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Original Articles.

SUGGESTIONS OF A PLAN OF ORGANIZING A HOSPITAL SYSTEM FOR THE CITY OF NEW YORK.*

BY STEPHEN SMITH, M.D.,

NEW YORK

FOR the following reasons the present seems especially opportune for the discussion of the question, What shall be the hospital system of New York during the twentieth century?

1. There is a growing disposition on the part of the medical profession to prefer and seek the advantages of hospital care and treatment for their patients. 2. Wealthy citizens are contributing more freely to the establishment and support of hospitals than at any previous period. 3. The municipal authorities are contemplating the expenditure of enormous sums of public money on hospitals, viz., $12,000,000, on a monster hospital at Bellevue; $7,000,000 on extension of the Blackwell's Island hospitals; $7,000,000 on hospitals for the Borough of Brooklyn; $2,000,000 on a tuberculosis hospital on Staten Island; $1,000,000 for a public hospital on the west side, and, finally, an incredible number of hospitals is being projected by private individuals.

Hitherto, New York has had no hospital system, and, as a consequence, these institutions, both public and private, have been located, constructed, and managed with slight regard to the necessities of the sick poor, or to healthfulness and economy. The first governmental restraint over the establishment of private hospitals was by an act of the Legislature, 1894 and 1895, requiring the approval of the certificate of incorporation of a proposed hospital by the State Board of Charities. Before approving a certificate the Board establishes, affirmatively, the following facts: 1. The desirability of such hospital at the time and place stated in the certificate. 2. The character, as to responsibility of the proposed incorporators. 3. The financial resources of the proposed incorporation. This law has proved of great importance by preventing the establishment, in undesirable localities, of hospitals, managed by irresponsible persons, and without adequate financial support. The location, construction, and management of the public hospitals are under the control of three independent departments of the municipal government, viz., the Charities, Health, and Bellevue and Allied Hospitals. The private hospitals are under no other governmental supervision than that exercised by the State Board of Charities, as stated above, in approving their certificates of incorporation.

A system of hospital development adapted to the wants of the people of the City of New York, during the twentieth century, must be based on a judicious consideration of the following questions:

(1) **What Will be the Future Demand for Hospital Care for the Sick?**—The experience of the last half of the nineteenth century teaches an impressive lesson as to the future demands of the sick for hospital care and treatment. During the first half of that century, there was but one hospital in the old city of New York, excluding the Almshouse, although the population increased from 60,515 to 515,547. During the last half of the century the hospitals increased to upwards of 70, with an increase of the population to 1,850,093. A similar ratio of increase of hospitals to population occurred in the Borough of Brooklyn. At the present time the efforts of public authorities and private corporations, and citizens to increase hospital accommodations is unprecedented.

The increasing popularity of hospitals is due to the great advance of scientific medicine and surgery in determining more accurately the nature of diseased processes, and the conditions essential to their successful treatment. New methods of analysis and instruments of precision are more and more enabling the students of pathology to discover the ultimate elements of disease. The result has been the identification of large numbers of individual diseases hitherto grouped under one name, and consequently treated in gross. These discoveries have enormously enlarged the field of operative surgery, and multiplied remedial measures that must be applied with the greatest exactness.

As these revelations of the modern requirements of practice are in an early stage of development, we can but conclude that hospitals will become more and more the resort of the sick during the present century. Already the conditions of success in surgical practice demand so much apparatus, and such precision in its use, that skilled and judicious surgeons insist upon the removal of their patients to the hospital. Not less important is the hospital for the treatment of a largely increasing number of diseases that fall to the care of the physician, and to the specialist. So impressed are practitioners with the necessity of hospital care of their patients that many are creating their own private hospitals.

We are justified in concluding that there is to be a constantly increasing demand for hospital accommodations for the sick of New York. It is, perhaps, not unwarranted to predict from the experience of the past that the time is not distant when acute diseases will not be treated in the homes of the people, but in hospitals.

(2) **What Shall be the Organized Municipal Authority Having Jurisdiction of the Hospital System Suggested?** There should be created a "Department of Hospitals." The chief officer should be a "Commissioner of Hospitals," who should be a physician of not less than ten years' experience in hospital practice, and of assured executive ability. The "Department of Hospitals" should be under the control of a Board consisting of the Com-

*A paper prepared for the Discussion of the "Hospital Question" before the New York County Medical Association.

missioner of Hospitals, the Commissioner of Charities, and the Commissioner of Health.

This plan of organizing a department is similar to that of the Department of Health, the Board of which consists of the Commissioner of Health, the Commissioner of Police, and the Health Officer of the Port. The object sought to be accomplished is the union, in the government of the Department of Hospitals, of the allied departments which have an interest in its operations. The Department of Hospitals should exercise complete control of all the public hospitals now or hereafter created, viz., the Bellevue and Allied Hospitals, the hospitals under the control of the Department of Charities, and the Contagious Diseases Hospitals under the control of the Department of Health. The assignment of ambulance districts to hospitals should be transferred from the Police Department to the Department of Hospitals.

(3) What Should be the Relation of the Department of Hospitals to Private Hospitals?—The Department should have the duty of approval or disapproval of the certificate of incorporation of all private hospitals, now imposed by statute upon the State Board of Charities, and such approval should be based on the facts required by that Board, viz.: 1. The desirability of such hospital at the time and place proposed in the certificate. 2. The responsible character of the proposed incorporators. 3. The adequate financial resources of the promoters. The Department should utilize the private hospitals in the care and treatment of dependent patients, when satisfactory arrangements can be made with the managers. There are many private hospitals so located, constructed, and equipped that they would form an important part of the hospital system suggested if they were subsidized by the payment of an adequate sum for the care of the patients received by them. Vast sums of money expended in the construction, equipment, and management of new hospitals could be saved if the public authorities would pay private hospitals a liberal *per capita* allowance for the treatment of charity patients. The Department should have visitatorial powers of all private hospitals, and such supervisory jurisdiction as will harmonize their management with the system of hospital administration created by the Department.

(4) What Should be the Relation of the Public Hospitals to the Medical Profession?—Every person who is legally qualified to practise medicine in the State of New York should be allowed to send his patients to the public hospitals of the city, to attend his patients exclusively while in the hospital, and to invite any legally qualified practitioner to cooperate with him in the treatment of his patients, whether as a consultant or operator. This plan of organizing the hospital service has been pursued for many years by hospitals in this State with the happiest results.

The exclusion of the medical profession from a participation in the benefits of a public hospital is not only a wrong to that profession, but works a serious injury to the sick. Under present hospital regulations, the medical staff exercises all the powers of the most exacting monopoly though the method of appointment secures only ordinary practitioners. Physicians, not members of the attending staff, whatever may be their abilities or rank, have no rights in the hospital. On sending their patients to a hospital they lose all control of the care and treatment, which are assumed by the physicians who have been so fortunate as to be appointed to the medical staff of the hospital. The result is that the outside physician loses his patient, and, what is perhaps of more importance, the patient loses his physician. Hence, large numbers of medical practitioners, perhaps more competent to treat their patients than the members of a hospital staff, refuse to send their patients to a hospital, though the disease is of a kind to require hospital advantages for successful treatment. This old-time custom of excluding the profession from the benefits of hospitals has come down to us from the hospitals of London, and ought to be abolished in this progressive age.

(5) What Should be the Relations of the Public Hospitals to the Medical Schools?—Practical instruction in hospitals is becoming more and more recognized by the Medical Colleges as an essential part of a complete medical education. It is good public policy to encourage the promoters of medical education to utilize the hospitals under municipal control for the purpose of clinical instruction by giving them access to the patients under proper rules. The popular prejudice against the admission of medical students to the wards of hospitals for the purpose of bedside instruction was formerly intense. It was regarded as an outrage upon the patients to expose their diseases to the observation of a class of students. In practice, however, it was found that the patients in a ward who were selected for study were very proud of the distinction, while those who were passed by were offended at their apparent neglect. The facts established by experience show that the benefits of clinical instruction are reciprocal as between the hospital and the school. The hospital which has the most perfectly organized system of clinical instruction has the most thorough and exhaustive investigation of the diseases of the patients, and, as a consequence, the highest grade of treatment, and this necessarily results in the most efficient administration of the entire hospital. On the other hand, the value of clinical instruction to the school is inestimable. The time is not distant, we trust, when the hospitals of the city will, as in the European capitals, be the centers of medical instruction, rather than merely accessories.

(6) What Should be the Relation of Public Hospitals to the People?—The public hospitals, built and supported by public funds, should furnish adequate facilities to all classes and conditions of the people, who, by accident or disease, require the advantages of hospital care and treatment. To meet these requirements the hospital should be so constructed as to furnish apartments adapted to every rank and grade of society, from the charity patient to the millionaire. The rate of pay should be scaled on the basis of the accommodations supplied, whether in a general ward, a room with one or more occupants, or an entirely private apartment, or apartments. Moreover, the patient who pays for hospital accommodations should have the privilege of selecting as his medical attendant any legally qualified practitioner, unconnected with the hospital staff, and all the resources of the hospital should be given to the service of such practitioner.

(7) What Should be the Classification of the Public Hospitals Adapted to the Necessities of the People?—The first class of hospitals which the sick and injured require is that which meets emergencies, viz., "The Emergency Hospital"; the second class should provide for the sick during convalescence, viz., "The Convalescent Hospital"; the third class should be equipped for the treatment of special forms of disease, viz., "The Special Hospital"; the fourth class should be devoted to diseases which require isolation, viz., "The Contagious Diseases Hospital."

(8) The Emergency Hospital.—The first hospital in the proposed system is the Emergency Hos-

pital, where the sick and injured receive first treatment. The capacity for these hospitals must vary with conditions, but in general it would be comparatively limited, as the term of residence of those requiring its special care and treatment must necessarily be brief. As much will depend upon the character of the population of the locality it may be estimated that their capacity will be for 300 patients as a minimum, and 600 patients as a maximum. The location of these hospitals must be in the vicinity of the people they are intended to serve. To determine this fact the city should be divided into *Hospital Districts,* the division being based on the laboring or tenement-house population, and registered sickness.

The construction of an Emergency Hospital in New York City admits of a variety of plans and details. The principle governing the construction of hospitals since the Civil War is to the effect that the danger to the health of the people, in domicil, increases in proportion to the increase of the persons occupying a given ground space. Therefore, the wards were spread out over a large area and were one, or at most, two stories in height. This sanitary maxim is true where people live in loosely constructed structures, or in many-storied buildings in which one story ventilates freely into another. In the country where land is cheap and construction work is not of the highest order, the best style of hospital architecture is the cottage form, with wards one or two stories in height. But in a city where land is expensive, and construction is under close governmental supervision, the conditions are so completely changed as to warrant an entire reversal of the ancient sanitary maxim. The modern "apartment hotel" has demonstrated the fact that construction may be so perefct that, in the multiplication of stories in a city structure, the healthfulness of apartments increases in proportion to their distance from the level of the street. The lofty apartment houses are rapidly supplanting the old style residences, on account of both health and the many additional conveniences and economies in living. In like manner the many-story hospital is destined to supplant, in cities, the two or three-story structures. The lower two or three stories will be devoted to the administrative duties, while the higher stories, exposed to the sunlight and free air of the country, will be devoted to the sick.

The plan here suggested of building a series of Emergency Hospitals, ten, fifteen, or more stories in height, on very limited areas of ground, in "Hospital Districts" carefully defined according to the needs of the people, greatly simplifies the problem we are attempting to solve. In the first place it will not be necessary to select expensive plots of ground, but any available place within a given distance could be taken. Next would be the diminished cost of building owing to the compactness of the structure; it is estimated that such buildings could be erected for hospital purposes at a cost per bed not to exceed $1,000. Again, the administration of such a hospital would be far less cumbersome and expensive than the old-time Cottage Hospital. Finally, the healthfulness of the hospital of many stories would be far greater than the hospital whose wards are constantly exposed to the foul air, heat, and noise of the streets.

The Attending Staff should consist of two grades, viz., the Senior and the Junior. The term of service in each grade should be five years, or a total of ten years in both grades. The Senior grade should be filled by promotion from the Junior grade, and no person should be eligible to the Junior grade who is over fifty years of age, nor who holds a similar position in another hospital. The Senior Attending Staff should have supreme control of the division of the service assigned to each, and the Junior Attending Staff should act as assistants and substitutes to the Seniors.

The Resident Staff should consist of two grades of graduates, viz., the Senior and the Junior. The term of service should be six months in each grade, or one year in both grades. The members of the staff should be residents through both terms. In apportioning the service an average of fifty patients should constitute a division to which an individual member of the Senior Attending Staff and his assistant, and a Senior and Junior member of the Resident Staff, is assigned. The service should be continuous.

The Consulting Staff should consist of two classes, viz., (a) General Consultants, and (b) Special Consultants. The General Consultants should be physicians and surgeons who have served the full term of ten years in the hospital, and the Special Consultants should be eminent practitioners in branches of medicine and surgery, classed as specialties. When the Consultants of either class are called in consultation on patients, in public hospitals, they should be paid a reasonable professional fee.

The Medical Board should consist of the Senior Attending Staff, and any member of the Junior Attending Staff acting as a substitute. The Medical Board should be responsible to the Department of Hospitals for the nomination of all subordinate officers and for a close, daily supervision of the order, discipline, efficiency, and economy of every branch of the service.

The Executive Officer should, preferably, be a physician of assured executive efficiency. The Executive Officer and subordinate officials should be recommended by the Medical Board to the Department for appointment, and no such official should be appointed without such recommendation.

The special features of the above plan of organizing the Medical Service of an Emergency Hospital, which require comment, are as follows:

1. The division of the Attending Staff into two grades, Senior and Junior, is important, viz.: (a) The diseases of the patients being acute, the members of the staff should visit daily, which requires that there should be two attendants to meet emergencies. (b) The training of the Junior member, during his five years' service, fits him to take the place of the Senior, on retirement, and thus a high degree of qualification is maintained in the medical service. (c) A fixed term of service of ten years, five years in each grade, is ample in an Emergency Hospital, to secure all the benefits of experience that a hospital can confer: if the term is limited the attendant is far more likely to attend strictly to his duties in order to gain all the advantages possible during his term; within ten years a competent physician will secure a private practice which will absorb all his interests and energies; finally, the limited term admits of the admission of a far larger number of capable and deserving young physicians to the advantages of hospital practice. This scheme would result in a reform of the present obsolete practice of appointing men for life to hospital staffs, many of whom, far advanced in years, hold similar positions in other hospitals, and would give scores of competent graduates opportunities for hospital experience. (d) Hospital consultations are too much neglected. Every medical staff of a hospital should have the counsel and advice of men of large experience when emergencies occur in practice, and hence the necessity of the two grades of Consult-

ants. The General Consultants are men who have already served in the hospital for a full term of years, and are able to appreciate the conditions which are present, and which require a judgment based on experience for their proper determination. The Special Consultants are necessary to meet satisfactorily the emergencies which arise on the admission of special forms of disease. The professional fee is the just due of the Consultant of either class. (e) The term of one-year service for the Resident Staff, in two grades of six months each, would secure greater devotion to duty and admit a larger number of recent graduates to the advantages of the hospital. (f) The continuous service and an average of fifty patients to each division secures that continuity of treatment of, and interest in, individual patients, so essential to their recovery. (g) The Medical Board should be composed of officers having the largest experience in the affairs of the hospital, and immediately responsible for every detail in its management.

(9) Convalescent Hospitals.—The questions which arise in the discussion of the establishment of Convalescent Hospitals are much more readily determined. The most important are, (a) Location; (b) Construction; (c) Administration.

(a) The location of a Convalescent Hospital should be in the open country, on an elevated site, easily accessible to the city. The location should be on a water front navigable from the city, for two reasons, viz.: 1. For facility of transportation of both passengers and supplies, and, 2. For the curative effect of the recreation afforded to the sick by excursions on the water. The site should contain ample grounds for the cultivation of farm supplies, as vegetables, milk, fruits, stock. There is a great variety of available sites for Convalescent Hospitals along the shores of the Bay, the Sound, and Hudson River, within suitable distance of the city.

(b) The Construction should be a colony, with cottages of the family type, and sufficient in number to allow of minute classification. These structures should be very simple and inexpensive, but substantial and durable. It has been experimentally determined in Germany that convalescents who do suitable work out-of-doors, on farms, recover much more rapidly than do those confined in city hospitals.

(c) The administration of the Convalescent Hospital should be under the direction of a medical officer of large experience in the practical duties of hospital management, with a resident medical staff of recent graduates, having a limited tenure of service. The Training School for Nurses of the Department should be located in this hospital, and, by properly arranged scheme of assignment, should furnish nurses to all of the other hospitals. The members of the attending staffs of the various hospitals should have the right to the continuous care of the patients whom they send to the Convalescent Hospital.

(10) Special Hospitals.—There is a growing need of well-equipped and managed special hospitals in this city in which instruments of precision are necessary to successful treatment. The provisions made in existing hospitals and dispensaries for the treatment of the special diseases of the poor, as of the eye, ear, nose, and other organs, are inadequate and preventive of that high grade of success. The importance of these special institutions is seen in the crowds which throng the few better-conducted hospitals and dispensaries, numbering often five and six hundred during the two or three hours of attendance. The proper treatment of the diseases of sensitive organs, as the eye and ear, requiring the expert use of delicate instruments, under these conditions of rush and confusion, is impossible. The only possible relief to those seeking treatment of special diseases is a large increase in the number of thoroughly equipped hospitals and dispensaries devoted to these specialties.

(11) Contagious Diseases Hospitals.—These hospitals were formerly under the control and management of the Department of Charities. Owing to their inefficiency, the Department of Health, in 1872-3, began to create hospitals for contagious diseases on an entirely new basis of location, construction, and management. The value of these new hospitals was at once demonstrated. The protection which they have afforded the tenement-house classes from the brood of domestic pestilences which formerly decimated the homes of the poor cannot be estimated. The remarkable improvement in the efficiency of these hospitals when removed from a department devoted to the custodial care of the poor to a department having expert knowledge of contagious diseases, strikingly illustrates the defects of our hydra-headed system of hospitals.

(12) Organization of Hospital System.—The practical application of the foregoing suggestions to existing conditions could be much more readily effected if the previous development and growth of our hospitals had been along definite and well-devised lines, and under a competent municipal authority. But even in their present chaotic state as regards location, construction, and division of authority in management, a serious effort should be made to so organize them into a system that during the present century they will develop symmetrically, and thus be better adapted to fulfill their mission to the sick efficiently and economically. To that end the following suggestions as to the method of organizing the hospital system, above outlined, are submitted:

1. The "Department of Hospitals" should be provided for by an amendment of the charter of the city.

2. When organized the Department should create "Hospital Districts," the division of territory being based on the population of the laboring or tenement-house classes and the sickness-rate.

3. The following public hopitals should become "Emergency Hospitals," with properly assigned districts, viz., Gouverneur, Bellevue, Harlem, Fordham. In furtherance of this plan, the proposed New Bellevue Hospital, to accommodate 2,000 or 3,000 patients and to be built at a cost of upwards of $12,000,000, should be discarded, and an Emergency Hospital should be constructed there on the plans above given, to accommodate 600 patients. The remaining grounds should be sold, the income of which would construct the proposed Bellevue Emergency Hospital and provide a Convalescent Hospital. This plan would save to the city, not only the $12,000,000 for the greater Bellevue, but, as seen in paragraph (5), also the $7,000,000 for the extension of hospital accommodations on Blackwell's Island.

4. In providing Emergency Hospitals for districts where none now exist, the Department of Hospitals should endeavor, first, to arrange with any private, well-equipped hospital in that vicinity, by suitable payment for the care of public patients, to become the "Emergency Hospital" of that district. There are a large number of private hospitals which would gladly accept that position and thoroughly perform its duties, if they could be com-

pensated adequately, thus saving to the city the enormous cost of erecting, equipping, and managing its own hospitals.

5. One or more "Convalescent Hospitals" should be at once created on ample farm lands located on the water front within easy access of the city. When such a hospital is ready for occupation the inmates of the hospitals on Blackwell's Island should be removed as they convalesce to the "Convalescent Hospital," and these Island hospitals should be converted into infirmaries for the incurables and other classes in that Department of Charities. By this change the $7,000,000 required for the additions to these buildings for hospital purposes would be saved to the city, and the accommodations of the Department of Charities would be greatly improved.

6. The "Special" and "Contagious Diseases" Hospitals would take their proper places in the system of hospitals organized by the proposed Department of Hospitals, and their location, organization, and management would be in accordance with the latest teachings of science and experience.

300 Central Park West.

REPORT OF TWO CASES OF DEMENTIA PARALYTICA, ONE ASSOCIATED WITH A LARGE HEMORRHAGIC LESION, THE OTHER WITH ATROPHY OF THE OPTIC TRACT.

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Though medical literature abounds in discussions of dementia paralytica in all its phases, few cases are recorded associated with gross focal lesions of the brain.*

Case I.—A. C., a well-developed male probably forty-eight or fifty years old, was arrested by the police for disorderly conduct and intoxication about two weeks prior to his admission to the Connecticut Hospital for the Insane, but subsequently it was ascertained that he was insane. No information was obtained in regard to his family or personal history, or the psychosis up to the time of his arrest. Upon admission to the hospital, and during residence there, he presented symptoms of the expansive form of dementia paralytica, accompanied by considerable deterioration. His memory was markedly impaired. His train of thought was desultory and he talked incoherently, never reaching a goal idea, and presenting many rapidly changing delusions of grandeur. His emotional state was one of elation in accord with his expansive delusions. He sat around the ward happy and contented, singing softly to himself, absolutely oblivious of his environment, or of his personal needs.

Physically, there were marked ataxia, Romberg's symptom, tremor of tongue, eyelids and facial muscles, exaggerated patellar reflexes, faulty articulation, and equally contracted pupils, which responded sluggishly to light and accommodation. At the end of a year he was more markedly deteriorated mentally, the patellar and deep reflexes were apparently abolished, the pupils were equally contracted but irresponsive to light or accommodation, and he was unable to stand alone. He laughed and sang happily the greater part of the night, but was generally quiet and stupid during the day. He deteriorated rapidly in the next few months, and ground his teeth together hours at a time until they were worn down to the gums, causing much laceration and swelling. From this time on he would lie in bed, softly crooning to himself, unmindful of his personal needs or of his environment.

Fig. 1.—Case I. *a*. Indicates the anterior tip of the lesion in the left side.

About one year before his death there was observed a progressive paresis of the muscles of the right forearm, accompanied by increasing contractures. This gradually extended to the upper arm, to the left arm, and both legs, so that at the time of death, three and a half years after admission to the hospital, the arms were strongly adducted with flexed forearms, while the legs were firmly flexed upon thighs, and thighs upon the abdomen.

An autopsy was performed some fifteen hours after death. The brain weighed 1,115 grams, and presented general cerebral atrophy, chronic lepto-

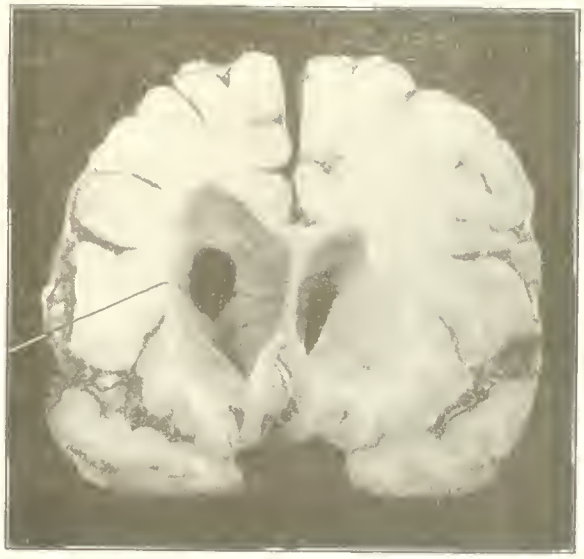

Fig. 2.—Case I. *a*. Note the marked dilatation of the left ventricles and the reduction of the caudate nucleus.

meningitis, and edema of pia. The left hemisphere of the cerebrum was slightly reduced in bulk, with a corresponding reduction of the right cerebellum. The frontal lobes were adherent. The cord presented calcareous placques in the pia. Frontal section of cerebrum revealed marked dilatation of the anterior horn and body of the left lateral ventricle. The posterior horn of the left, the entire right, and the third ventricles were moderately distended, and the ependyma of all presented marked granulations.

*The two cases here reported were on the service of Dr. A. B. Coleburn, to whom we are indebted for valuable notes. I wish also to express my grateful appreciation to Dr. A. R. Diefendorf for report of autopsy and suggestions.

The corona radiata of the left hemisphere presented an area of hemorrhagic degeneration measuring in frontal section anteriorly 4 cm. by 1 cm., and about 6 cm. by ½ cm. at the broadest portion. It began just anterior to the tip of the anterior horn of left ventricle, extending posteriorly to the dorsal extremity of the caudate nucleus. It was located above, below and external to the ventricle, forming almost a half circle around it. The caudate nucleus was much reduced in size, especially in the middle third, where it was so attenuated as to be scarcely recognizable. The lesion was grayish in color, and very spongy. Microscopically, it was composed of vacuoles surrounded by a compact mass of fine fibrils, with an increase of neuroglia cells. It lay in apposition to a similar, though much smaller lesion, involving the cortex, as well as some subcortical tissue of the external portion of the gyrus rectus. The structures involved in the larger lesion were the left caudate nucleus, the corona, lying adjacent to the external wall of the anterior horn and body of the lateral ventricle, as well as the anterior limb of the internal capsule.

FIG. 3.—Case I. *a*. Shows the lesion almost encircling the lateral ventricle, which is markedly dilated. Also note dilatation of right and third ventricles.

Microscopical examination of the cerebral cortex showed the characteristic vascular changes of dementia paralytica. The right and left paracentral regions were studied, but the most marked changes were observed in the right and left first frontal convolutions. The cortex was everywhere atrophied, many cells having fallen out, while the others were crowded irregularly together. Neuroglia cells were generally shrunken and deeply stained, but not increased in number. The blood-vessels were increased in number, showing periarteritis, with infiltration of the adventitia by small, round cells, plasma cells, and mast cells. Stäbchenzellen (red cells) were numerous in the vicinity of vessels. The contour of the small nerve cells was irregular, very few processes being traceable. The chromatic substance presented a fine network of partially-stained fibers. The nucleus was not always centrally placed, and was often distorted and deeply stained with nucleolus frequently seen at the periphery. There was marked central chromatolysis of the Betz cells, with staining of the achromatic substance, accompanied by a pigmentary deposit at base of cell and vacuolation of nucleus.

The spinal cord presented arteriosclerosis, with marked degeneration of fibers of the right-crossed pyramidal tract, with moderate degree of degeneration in the left direct pyramidal tract, and in the column of Goll on both sides.

CASE II.—J. W. This patient was a well-developed, temperate Irish laborer. Syphilis was denied, and family and personal history were negative up to his thirty-eighth year, when he suddenly lost the sight of both eyes, about which occurrence nothing more definite could be learned. There was no mental change noted for seven years after the loss of vision. At this time he had a "shock," which was said to have affected his hands and speech. He was mute for about an hour, after which his speech was stuttering in character. His insanity came on gradually following this "shock," and was characterized by insomnia, defective memory, irritability, talkativeness, excitability, and violence.

He was admitted to the Connecticut Hospital for the Insane, September 26, 1902, nearly eight months after the so-called "shock," and over seven years after the loss of vision. At the time of admission he was totally blind, except for the distinction between light and darkness. No hallucinations were elicited, but he was completely disoriented. His memory was seriously impaired, his thought was apparently very limited, and his replies were irrelevant and incoherent. No delusions were elicited during his residence in the hospital. Emotionally, he showed slight oscillations with predominance of depression, but volitionally he manifested no marked change.

Physically, he presented almost complete blindness, shuffling gait, Romberg's symptom, stuttering, explosive, and indistinct speech, tremor of eyelids, tongue, and fingers, active superficial reflexes, a moderate Babinski sign, and active patellar reflexes. He continued in much the same condition for a couple of months, when he became very restless, and frequently groaned as if in pain, but when questioned denied any uncomfortable sensations. His intellect was markedly deteriorated, and he showed considerable physical impairment, with incoordination, especially of the leg muscles.

Five months later the patient gave evidence of extreme pain by groaning, moaning, and moving restlessly from side to side. The next morning he was found in a semicomatose condition, with hands, arms, and legs twitching continually, and eyes turned to the left side. The muscular twitching subsided during the day, but he never regained consciousness, dying at 6 P.M. February 27, 1903, about one year after the so-called shock.

FIG. 4.—Case I. *a*. Note the reduction in size of the lesions and the reappearance of the caudate nucleus.

The autopsy was performed five hours after

death. Aorta and coronaries were sclerotic. About 3 cm. above the aortic valve there was adherent to the atheromatous vessel wall, a globular thrombus 2.5 cm. in diameter, which nearly occluded the lumen of the vessel. The thrombus was composed of a mixed clot, elsewhere the aorta, while atheromatous, was free of clots, but the mesenteric artery about 3 cm. from its origin contained a thrombus about 3 cm. long, firmly adherent to the vessel wall, with beginning necrosis of intestine.

The dura was free, but the frontal lobes were adherent. The pia was everywhere thickened, more especially over the motor, frontal, and temporal regions. The same areas showed shrinkage of the convolutions. The vessels at the base were sclerotic, but there was no external evidences of cerebral hemorrhage or embolism. The brain weighed 1.437 grams. The floor of the fourth ventricle was slightly granular. Frontal section was made one month after autopsy, when slight dilatation, with marked granulation of ventricles, was found. There was atrophy of both optic nerves and tracts, and the lateral geniculate bodies of each side were about one half normal size. These were brownish green

FIG. 5.—Case I. *a*. Showing only the extreme posterior tip of the lesion. The dilatation of the posterior horns of the lateral ventricle is nearly identical.

in color, and the white laminæ were completely absent. The superior corporaquadrigemina were somewhat reduced in size, and the superior colliculi were entirely absent.

Microscopically the right paracentral lobule (stained by Nissl's original method), showed the pia thickened and infiltrated with small, round cells. Immediately beneath the pia a few corpora amylacea were seen. The vessels were increased in number, their walls being much thickened, and the adventitia infiltrated with small round and plasma cells with much pigmentation. Stäbchenzellen (rod cells) were numerous in vicinity of vessels. The neuroglia cells were not increased in number, but their nuclei were shrunken. The neuroglia fibers were increased in the first layer. The regular arrangement of nerve cells was lost, and they were crowded together, the intercellular substance being much reduced. The small nerve cells were normal in shape, but somewhat irregular in contour from retraction between the processes, which were traceable but a short distance. The cytoplasm was composed of a fine, irregular reticulum of slightly stained fibers with many vacuoles. The nucleus was shrunken, deeply stained, and often triangular. The nucleolus was frequently seen at the periphery of the nucleus and was very deeply stained. The Betz cells were shrunken, the contour irregular from retraction, and the processes were not traceable. The chromatic substance exhibited no granules, except near the apical process. The achromatic substance was stained, giving a homogeneous appearance to the cell. The nucleus was shrunken, elongated, deeply stained, and the membrane thickened. The nuclear cap was very prominent and the nucleolus deeply stained.

Frontal section, as well as the left paracentral lobule, showed an increase in the number of neuroglia cells, the presence of many satellite cells, and the "rassen" formation of Nissl; otherwise the sections closely resembled those of the right hemisphere. In the cord there was a degeneration of a large number of fibers in the crossed pyramidal tract of the right side, the cervical and lumbar regions suffering the most.

In the first case there were no unusual symptoms until about one year previous to death, when contractures of the right side were noted, beginning with the hand, but gradually involving the arms and legs of both sides. The absence in this case of any history of shock, or any symptoms pointing towards a focal lesion, leave us in the dark as to the primary affection. Whether the hemorrhage antedated the mental symptoms, or appeared during the psychosis and was masked by it, is impossible to say.

In the second case, however, the sudden blindness, "shock," and dementia rather masked the symptoms of general paresis, so that there was some doubt as to the diagnosis before autopsy.

The duration of the disease does not seem to have been affected by the focal lesion, nor did it color the picture to any great extent in the first case.

THE INTESTINAL BACTERIA; HOW THEY ACQUIRE TOXICITY, AND HOW TO DETERMINE THIS EXPERIMENTALLY FOR CLINICAL PURPOSES.

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IN spite of the fact that a great deal has been written on the common intestinal bacteria, we are practically not much the wiser. We know that ordinarily the intestines contain numerous microbes, which may become harmful to the system, but the question is whether the same microbes of the intestines which are ordinarily harmless may become injurious, and if so under what conditions; or whether they cannot, and the harmful microbes are newcomers and are derived from other sources.

This most important question has not been answered clearly and definitely, but vaguely and guessingly. We often hear such explanations as lowered resistance or vitality, which are simply empty phrases, as we are not told in what the low resistance consists, how it is brought about, or how to prevent it. Such phrases make matters still more obscure, and those who do not wish to deceive themselves or their fellow men by using words without meaning, had better not use them at all. In this paper the writer will attempt to answer this question clearly from experimental facts.

First, however, it is necessary to know what bacteria are usually found in the intestines of man. An exhaustive treatise on this subject is given by Prof. Mannaberg.[1] It would be unprofitable to discuss here at length a subject that has been already so ably discussed.

A great many microbic species are said by inves-

tigators to have been isolated from the intestines, *i. e.*, the feces, as the bacteria are usually studied from the feces, and it is assumed that naturally they represent those of the intestines. This is so if proper precaution is taken to prevent the contamination of the feces by the bacteria from the container, the air, etc. In all probability some of the discrepancies in the findings of some authors are due to such contaminations.

The following bacilli are said by investigators to have been found in the intestines, *i. e.*, feces of man: (*a*) *Bacillus coli* or some of its congeners, like the *B. lactis ærogenes;* (*b*) *B. subtilis;* (*c*) *B. mesentericus vulgaris;* (*a*) *B. butyricus.* and (*c*) some other species. All investigators agree that the coli bacilli are constantly found in the intestines of man, even in those of young infants, and they have been found even in the meconium of newly born infants. It is a polymorphous organism, and according to Mannaberg the same microbe has been rediscovered under different names, with which I fully agree. I shall revert to it soon again. The other bacilli mentioned above are admitted not to be constant hosts of the intestines, but are found now and then. Anaerobes are, of course, found now and then; but the statement made by some that they are constant hosts of the large intestines is not true.

As to cocci, investigators agree that in one form or another they are also constantly found in the feces.

I have made a number of examinations of the bacteria of the feces, and in some cases the gastric contents of the same individuals were also examined chemically and bacteriologically. In cases where the gastric juice was normal, or in hyperchlorhydria, the only microbes I found in the feces in cultures were the coli bacilli and cocci, and in some cases of hyperchlorhydria an organism resembling the *Oidium lactis*, but which took the Gram stain, and fungi were also found, but none of the other bacilli mentioned before claimed to have been found by other authors. Several examinations of the feces of the same individuals at intervals gave nearly the same results. The authors, who claim to have made investigations of the intestinal bacteria, fail to state whether or not they examined the stomach contents of the same individuals.*

I have treated elsewhere of the bacteria which are likely to be found in the various conditions of the stomach, and it would be unprofitable to dwell on this subject here. Some investigators seem, however, either to be unaware of these findings or to neglect them entirely. I wish, therefore, to repeat here briefly and emphatically, that in a normal human stomach after a light meal, the only bacteria that can be found is yeast, and in hyperchlorhydria, especially when accompanied with alimentary stasis, there may be found in addition a small bacillus named by the writer, the bacillus chlorhydrici, and also sarcinæ, and sometimes fungi.[2] But no other bacilli are found as a rule in such conditions of the stomach.† In achlorhydria, where the gastric juice exerts little or no germicidal powers, other microbes can be found in the stomach, and the bacterial flora in the intestines are also apt to be richer, and in some cases they are.

It must be stated emphatically that many microbic species are never found at the same time in one natural medium. The writer has carefully examined the sputum, the gastric juice, and the feces, and he states positively that very seldom are more than four species of microorganisms found at one time in any of those natural media, and most frequently there are only two or three. It stands to reason that many species cannot grow together in the same medium, as the slowly growing ones are necessarily destroyed by the fast-growing. This is a well-known biologic law, and we see it all over in nature.

The coli bacilli and the cocci which are found in the intestines of individuals whose stomachs are normal, or in a state of hyperchlorhydria are probably old inhabitants, having found their way perhaps soon after birth, before the gastric secretion was fully established. For, though repeated examinations of the stomach contents did not show any such microbes, yet they were found in the feces of the same individuals. In the feces of a suckling infant ten weeks old, examined by the author at that age, and a month later, each time only coli bacilli and the same cocci were found. There were no other bacteria at the second and third examinations; evidently the stomach of the infant does not allow the passage of new bacteria. This may happen, however, under certain conditions, when the stomach is overtaxed or otherwise greatly disturbed. But it would appear that such an occurrence is the exception rather than the rule.

But as for the feces, admitting even that besides coli bacilli and cocci there may be found now and then some of the microbes referred to above, such as *B. subtilitis*, *B. mesentericus vulgaris*, etc., as they are nonpathogenic, their presence is practically of no importance. We thus have to deal with only two microorganisms which are constantly found in the feces, and which may become pathogenic, and these we shall consider here.

We shall first take up the coli bacilli. The morphology and cultural peculiarities of this microbe have been sufficiently described in standard works, so they need not be treated here. But as to the virulence the status of the colon bacillus has not been clearly established. We know that it is sometimes virulent and sometimes it is not. Thus, according to Lesage and Macaigne,[3] the microbe in question is nonvirulent when taken from healthy intestines, but when the intestines are affected, when there is diarrhea it is found to be virulent. The question to be decided is whether the nonvirulent colon bacillus may become virulent, and if so under what conditions; or whether the virulent and the nonvirulent coli bacilli are two different microbes, derived from different sources. Furthermore, it has not been proven to us whether the virulent coli bacilli found in diarrhea, as stated by Lesage and Macaigne, are the cause of the diarrhea or the effect of it. This question will be answered from the following facts:

In studying the feces of mice and rats the writer has always found in them cocci and coli-bacilli, or some of their congeners. The same microbes were also found in the intestines and in the stomach of these animals. It has been said in the stomach, which is not the case with normal stomachs of human beings. The stomachs of mice and rats contain hardly any hydrochloric acid, as was shown repeatedly by applying the usual tests for HCl; therefore, the above-mentioned microbes can be found in it, whereas they cannot thrive in a stomach containing a normal amount of HCl.

Now, by injecting into mice intraperitoneally fresh agar cultures of coli bacilli and cocci obtained from the feces of mice fed on bread and water, there

*Some authors describe microbes which they did not isolate in cultures, but which they claim to have seen in smear preparations. This is, of course, ridiculous, as one can never identify microbes except in cultures.

† An investigator recently claimed that ulcer of the stomach is caused by the coli bacilli. If that investigator had examined conscientiously the human stomach he would not have made such an absurd claim, as in ulcus ventriculi there is usually hyperchlorhydria.

was no effect at all. Some time ago, however, the writer isolated coli bacilli from a dead mouse, and, by injecting into mice intraperitoneally small doses of such an old agar culture, the mice thus injected invariably died within twelve hours. A fresh culture was then made from the three-months-old one, and the fresh one, when it was only two days old, was injected into mice, and, to the writer's surprise, the new culture did not act as did the old one. Of five mice injected, three died in about eighteen hours, on one there was no effect at all, and one died in four weeks.

It is interesting to say a few words concerning the last animal. There is, as a rule, an inflammatory state of the peritoneum and intestines of animals dying from the injection of virulent coli bacilli. The last-mentioned mouse was unwell all the four weeks, as was evidenced from its apathy and its apparent weakness in the hind legs. After its death its abdomen was greatly distended, and on dissection the intestines and stomach were greatly distended with gas, and were very thin, appearing like big soap bubbles; but there was also an inflammation of the peritoneum, the intestines, and the stomach, and the bubbles were greenish, and in spots reddish. The same condition may occur in human beings in chronic affections due to the coli bacilli.

Coli bacilli are, as a rule, found in the blood of dead mice, and also in other animals, some hours after their death, no matter what the cause of death may be. Frequently there are also found in the blood of dead mice cocci, which have been dealt with by the writer elsewhere.[1] Now, the coli bacilli from dead mice have always shown a great virulence. They evidently enter into the blood of the dead animals from the alimentary canal, and not from the air, because frequently they are the only bacilli present, no other bacilli usually found in the air being present, except, of course, when decomposition has already fully set in.

The same microbe, then, which is nonvirulent when obtained in cultures from the feces of a healthy animal fed on bread and water only, is virulent when obtained from the blood of the same animal when dead.

It is frequently stated that during life certain antibodies serve to mitigate or to diminish the virulence of bacteria. How far this is correct in general it would be out of place to discuss here. But it certainly cannot explain why the coli bacilli obtained in cultures from feces of mice fed on bread are nonvirulent, as the feces are just as much dead matter as the dead body of the mouse, and the former can no more form antibodies than the latter. The explanation we shall see immediately. It has been referred above to the feces of a healthy suckling infant studied by the writer. The feces, as has been said, contained coli bacilli and cocci. The former differed slightly morphologically from those found in dead mice, in that they were bigger; otherwise they were alike. The cocci were diplococci, and some of them formed short chains of from four to eight individuals, resembling short streptococci. Now, on injecting intraperitoneally into mice two days old agar cultures containing both the coli bacilli and the cocci, obtained from the feces of the infant in question, no effect was produced. The same was repeated at an interval of a month with fresh cultures, from fresh feces, with the same results. The idea suggested itself to me that the nonvirulence of the coli bacilli obtained from the feces of mice and from that of a suckling infant was due to the fact that such feces are deficient as a nutritive medium, and that the coli bacilli, in order to attain virulence, must have a medium of dead flesh.

To test the matter, the following experiment was made: A piece of butcher's meat was boiled for about half an hour; then it was put into a test tube, and to this was added normal gastric juice, and left for a few hours. This was done to destroy the bacteria of the meat and to imitate what takes place in the stomach. Before the meat was fully digested the gastric juice was poured off and sterile water added. Then were added a few loopfuls of a fresh culture from the feces of the infant, which culture contained coli bacilli and cocci, and were nonvirulent. At the end of three days an agar culture was made from the test tube containing the meat and sterile water, to which bacteria from the infant's feces had been added. This new agar culture contained again coli bacilli and cocci, and these were injected into mice, and it caused their death in sixteen hours. The same mice which had not been affected when injected with a culture obtained from the feces of the infant (which we shall call culture 1) died when injected with a culture obtained from the test tube of meat, and the latter culture was an offspring of the culture 1. Evidently a nutritive medium of flesh enables the coli bacilli to acquire virulence.

Furthermore, when culture 1 was two weeks old it was tested again, and this time it was found to have an effect on a mouse, causing its death in twenty hours. Indeed, gelose is practically also dead flesh, but evidently it takes some time for the virulence of the coli bacilli to develop in this medium, but it is accomplished much quicker in the body of a dead animal.

From the above facts and from others, which will be referred to soon, the writer considers it justifiable to draw the following conclusions: That a flesh medium enhances the virulence of the coli bacilli, and that in agar, older cultures are, on the whole, more virulent than fresh ones. This latter statement is not in accord with what we know about some other microbes, particularly diplococci and streptococci, which behave differently, nor is it in accord with the statements found in some books, that fresh two-days-old cultures are more active; but such were the findings of the writer, and so he records them.

I have also studied the feces of adults, and will briefly describe three cases.

Case 1. was that of a man of 50, who suffered from gastrointestinal trouble. He had vomiting and diarrhea a few months previous to his coming under the writer's observation, but he improved under treatment. When the writer saw him he had no more vomiting, but he had from three to five evacuations from the bowels daily. The patient was emaciated, had little appetite, and what troubled him most was flatulence. Gaseous distention of the intestines appeared in circumscribed places, simulating a phantom tumor, but there was no real tumor. An examination of the stomach and its contents showed some atony accompanied with hyperchlorhydria and hypersecretion. A bacteriological examination showed yeast and the bacillus chlorhydrici and also some sarcinæ and fungi, but no other bacteria. The feces were semisolid, very offensive in odor, and contained numerous gas bubbles. The feces rose in the container like fermenting dough. Microscopical examination of the feces showed nothing of special importance. Bacteriological examination yielded in cultures coli bacilli and cocci. A six-weeks-old agar culture of this feces injected into a mouse caused its death in twelve hours. Then the coli bacilli were isolated from the cocci and a two-days-old agar culture of the former injected into a mouse caused its death in twenty hours. This was evidently a case of enteritis due to the colon bacillus. What is impor-

tant to note in this case is that the stomach contents did not contain any coli bacilli nor cocci, though they were examined several times very carefully.

Case II. was that of a man of 40 suffering from chronic duodenal catarrh, with flatulence, and a tendency to diarrhea. There is occasional hyperacidity of the stomach, but the motility of this organ is good. Cultures from the feces yielded coli bacilli, cocci, an organism resembling the oidium lactis, but which was Gram positive, and also fungi. An injection of the same into a mouse caused its death in twenty hours, and in the blood of the mouse were found only coli bacilli.

Case III. was that of a woman 35 years old, apparently in good health, with rather costive bowels. This woman had typhoid fever at the age of 16 years, from which she fully recovered, and has been apparently in good health since. She is a heavy meat eater. The feces have a very disagreeable odor. An agar culture therefrom yielded coli bacilli and cocci, which caused the death of a mouse in twenty-four hours.

Cases I. and II. are also meat eaters. Now, from what has been said above, it appears that under a meat diet the coli bacilli of the intestines are most likely to become virulent. This is especially the case when some of the ingested meat happens to pass through the stomach and duodenum indigested so that it affords a good nutritive medium to the coli bacilli. Once the coli bacilli become virulent, they will, in their turn, cause injury to the intestines, and so the pathological process will go on. Under a milk or a vegetable diet some injury may also occur to the intestines from the ingestion of too much food or too irritating food, and the nonvirulent coli bacilli may thus settle at the injured part, thrive there as on dead flesh, and thus continue the pathological process.

I was able to produce sloughing experimentally in this way. The tails of mice were squeezed with forceps and allowed to drag in their own feces in the jar. The tails began to slough away, and the bacteria found on the sloughing tails were those of the feces, *i. e.*, the coli bacilli and cocci. If a clean bed is given to an animal the sloughing discontinues and the tail heals. Thus the injured tail affords a nidus and also nourishment for the coli bacilli of the feces, and endows them with some virulence, as they are not virulent when injected into the very same animals intraperitoneally. But healthy tails of mice, allowed to drag in their own feces, are not affected. Thus, in diseases of the intestinal canal due to the coli bacilli, these bacilli need not necessarily be new intruders, but the old, innocent bacilli may under indiscretion in diet become virulent and pathogenic. Indeed, it has been said that meat eaters are more subject to appendicitis than vegetarians. I quote the following: "Freedom from Appendicitis.—Dr. Nicholas Senn has made an interesting observation while visiting the hospitals in towns on the east coast of Africa. The physicians in those institutions informed him that they had never seen a case of appendicitis among the blacks. . . . . The relaxing effect of climate, laziness, and a fruit and vegetable diet would seem to offer the best explanation of this immunity."[5] How far climate and laziness can have any effect on the intestinal bacilli the writer cannot say, but the effect of diet was shown above.

According to some investigators quoted by Nothnagel (*Erkrankungen des Darms und des Peritoneum*, p. 682) most of the cases of appendicitis are due to the coli bacilli. The same can be said of the affections of the biliary ducts. If we examine the feces of animals living on a vegetable diet, like those of mice fed on bread only, and of cows and horses, and of healthy nursing infants, it will be noticed that there is hardly the offensive odor of the feces of the carnivora like cats and dogs, and of adults partaking of meat, though coli bacilli are found in the feces of all those mentioned. It is because indol, skatol and phenol are not formed in the healthy intestines on a milk diet and a vegetable diet, to any appreciable extent, as they are on a meat diet. The poisonous products of the coli bacilli are evidently less on a diet of the former than on the latter.

The above is said, not with the view of condemning a meat diet entirely, but to show that as far as the coli bacilli are concerned, their virulence is apt to be enhanced by such a diet. How other pathogenic bacteria are affected by it is a question yet to be answered.

Virulent coli bacilli also contain an extra cellular toxin, which they secrete into the medium in which they develop, and hence there may be an autointoxication derived from the intestinal canal.

I shall now say a few words concerning the cocci. A great many varieties of these are said to have been isolated from the feces. As the writer found them, they were usually like those in the feces of the suckling infant mentioned above. They appear usually in the form of diplococci, or form short chains. Sometimes they appear as staphylococci, and in this form they are usually found in the feces of mice. Pageand[6] doubts whether they can cause disease at all, as he found them in the feces of healthy suckling infants, and they were not virulent to mice. That is exactly my experience. Furthermore, whereas the coli bacilli, as was stated before, acquired virulence by passing through meat, the cocci did not. By injecting such cocci alone into a susceptible animal, like a mouse, the animal is not affected. If we inject such nonvirulent cocci, together with virulent coli bacilli, the animal dies, but neither in smear preparation nor in cultures from the blood of the dead animal can cocci be found. In such cases only coli bacilli are found. If, however, we inject both virulent diplococci and coli bacilli, both of these microbes can be recovered in cultures from the blood of the dead animal. When such microorganisms are injected into a mouse intraperitoneally, the animal usually dies in eight hours, and frequently the cocci cannot be seen in smear preparations, but they can be recovered in cultures from the blood of the dead animal.

The cocci obtained from the feces of the other cases seem also to be devoid of virulence.

Thus there seems to be a difference between the cocci obtained from the human sputum and those obtained from the feces. In the former they are, as a rule, somewhat virulent, which virulence can be enhanced by their passage through a susceptible animal like the mouse; but in the latter they seem to have lost their virulence entirely, and it cannot be restored. As to the coli bacilli the case seems to be reversed; they are more frequently found in a virulent form in the feces than in the sputum.

Though it is generally admitted that the coli bacilli are in most cases responsible for appendicitis, yet in some cases cocci, mostly diplococci and streptococci, are found alone in this affection. In such cases the trend of opinion is that the virulent cocci gain entrance through the blood and not from the intestines, and the writer is also inclined to this belief. Furthermore, the affection in question sometimes occurs endemically. Thus Galubow[7] reported an epidemic of appendicitis in Moscow in the spring of 1806; Louenburg, in the spring of 1899 in a certain section of Berlin, and similar reports are made by others. It is noteworthy, however, that these reported epidemics occurred in the spring and winter

months, when pneumonia is most prevalent, and not in months when gastrointestinal diseases are prevalent. The writer has elsewhere brought proofs to show that mice which are very susceptible to the pneumonia bacilli are responsible for this affection. Mice, in fact, are very susceptible to all kinds of cocci, and also to *B. coli*, which latter are enhanced in virulence on passing through the mice. The writer has furthermore proven that these animals are more abundant in houses at certain seasons, and that by their decomposing bodies after their death, or through their feces when they are sick, they are apt to spread very virulent germs. Are not mice the cause also of the local outbreaks of appendicitis, and in fact of most, if not of all, virulent cocci infection? This question is of sufficient importance to be taken up by investigators and to be decided one way or another.

I shall now say a few words concerning the method of testing the virulence of the intestinal bacteria: Obtain some feces, for obvious reasons better at the end of defecation, in a sterile container. Then make two cultures, one in glucosed agar by stab and one on agar slant by smear, and put them into the incubator at 38° C. for forty-eight hours. In hot summer weather the room temperature is sufficient. Make smear preparations of the cultures and stain by Gram and a counter stain like eosine. By examining the cultures and the smear preparations therefrom, one can usually see what bacteria there are. As the writer has said, in most instances there will be found Gram positive cocci and coli bacilli, the latter, of course, Gram negative. There is no necessity to make cultures on plates, and to isolate the bacteria, as this is a rather tedious process, and not easily applicable to clinical purposes. The easiest and simplest methods are the best. Then take an ordinary loopful of a platinum wire needle, the size of a small drop, that is, about a twenty-fifth of a c.c., either from the stab culture, if the growth is sufficient, or from the slant culture, or from both, and dissolve in 2 c.c. of sterile water, and inject the whole of it intraperitoneally into a mouse. If the animal happens to be small, half of it should be injected.

If the animal does not die, the bacteria are nonvirulent. If the cultures contain both virulent cocci and coli bacilli, the animal dies in about eight hours. Virulent coli bacilli alone will kill in from twelve to twenty-four hours, depending on the degree of virulence. If one wishes to go a little further, the mouse should be dissected and smear preparations from the blood of the heart and cultures therefrom should be made. The dissection should be made immediately after the death of the animal. If the smear preparations and the cultures contain only coli bacilli they are the only virulent microbes. If the injected cultures contain also virulent cocci, in addition to the coli bacilli, they can be recovered in the cultures from the blood of the dead mouse, but are hard to be detected in smear preparations, as the animal dies too quickly after the injection. If one suspects virulent cocci or anthrax bacilli, for instance, the injection is better made subcutaneously, not intraperitoneally, in which case death is not so sudden, and the bacteria develop better in the animal. Of course one can use two mice, one for intraperitoneal, and the other for subcutaneous injection. As was said before, the presence of cocci in the dead animal shows them to be virulent, as nonvirulent ones are destroyed in the body of the animal and cannot be recovered.

By remembering what was said before, we can conclude that the presence in the feces of virulent cocci, particularly diplo- and streptococci, as shown by the fact that they can be recovered from the dead animal, denotes a localized point of suppuration somewhere in connection with the intestinal canal, for in simple enteritis the cocci are, as a rule, nonvirulent, and the process is due to the colon bacillus, or some of its congeners.

This method is so easy and so simple of application that there is no reason why it should not be used very often, whenever there is reason for its use. In affections which are said to be due to autointoxication from the intestinal canal, such as giddiness, neuralgic pains, melancholia, etc., the toxicity of the intestinal bacteria should be tested. As has been said before, the ingestion of meat on the whole enhances the virulence of the coli bacilli, and they may be virulent in constipation as well as in diarrhea. In fact, in chronic catarrhal conditions of the intestines the two conditions are apt to alternate, and in constipation the danger of the toxins being absorbed into the system, as well as of localized affections, such as diseases of the biliary ducts and of the appendix, are greater and more frequent than in diarrhea.

The quantitative analysis of bacteria is a tedious and uncertain proceeding, and of little value. It is their virulence that is of importance. The writer has tried the injection of feces instead of cultures therefrom, but the results are apt to be misleading.

The same method should be applied to testing milk and other substances.

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321 EAST THIRTEENTH STREET.

AN ORIGINAL INVESTIGATION OF AN EPIDEMIC OF GRIPPE, FOLLOWED BY A LARGE NUMBER OF CASES OF PNEUMONIA;*

WITH SPECIAL REFERENCE TO THE INFECTIOUS NATURE AND PERIOD OF INCUBATION OF THESE TWO DISEASES.

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I DESIRE herewith to record eight cases of croupous pneumonia—pneumonia with consolidation (4 per cent. of the entire population), and upwards of 100 cases of grippe (or 50 per cent. of the entire population), and occurring during a period of six weeks, from February 14 to March 28, 1905, in a small rural district, Messer (Smith County), Texas.

As for the infectious nature and period of incubation of these two diseases, I believe that a report of these cases will be of special interest for the reason that the locality in which they occurred is one in which the inhabitants at this period of the year do not intimately come in contact with those living in cities, and who by such residence might have become exposed to more numerous sources of infection. Dwellers in the larger cities mingle with each other

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to such an extent in public schools, parks, street cars, carriages, hotels, hospitals, and apartment houses, that the special focus, person, medium, or thing by which the infectious agent is spread renders the determination of the period of incubation of an infectious disease exceedingly difficult.

Of the 200 inhabitants of the above-named community the eight cases here reported were all those of croupous pneumonia occurring within the six weeks above noted. As far as can be learned there was only one case of pneumonia which was reported in this community during the corresponding period of the previous year. It might be of interest to say that during the corresponding period of the following year (1906), there were only a few cases of grippe (less than 10 per cent. of the population), which occurred in this same community, while not one case of pneumonia occurred. While about one-third of the population are colored, all of the eight cases occurred in the white race.

The community of Messer is situated in East Texas, and in a well timbered and well watered district. The country is quite rolling in character, the hills being upwards of 200 feet in height, with gradual slope in all directions. The soil for the most part is composed of very red and gray sandy loam, with clay subsoil lying as a rule within eighteen inches of the surface. The climate, according to Cline, is between "low damp warm and low damp cold." Extending from north to south lies a small valley, and traversing it in the same direction is the International and Great Northern Railway. The area of the Messer community is about two miles square, and within this area upwards of 200 people reside. The distance between the houses of the inhabitants ranges from 100 yards to half a mile. Agricultural and truck farming are the principal pursuits.

During the period from February 14 to March 28 the inhabitants had just begun to plow their lands, and were preparing the soil for planting corn, cotton, and vegetables. During this time the weather conditions had been unusually variable, marked by more or less sudden or sharp changes in the temperature, with an abundance of ice upon the ground and trees, and the soil was kept saturated with moisture.

The dwelling houses for the most part are constructed of pine lumber, one inch in thickness, while others are composed of logs, the interspaces being sealed with clay or pine boards. Many wide cracks exist in the floors and sides of the houses. Wood is the only fuel used; it is burned in large open fireplaces. These houses are ill suited to protect one against the icy touch of winter, and against sudden changes in the temperature.

One interesting fact should be recorded here, to wit, that during the previous fall, and throughout the winter, grippe had been more or less prevalent in this community. About March 7, 1905, grippe began to rage and within a month thereafter probably 50 per cent. of the population had suffered from this disease. By April 5, 1905, it had almost subsided, and by May 3, both grippe and pneumonia had totally disappeared. Therefore, in considering the infectious nature of croupous pneumonia as it seemed to have occurred in this community in the year 1905, it will be necessary to observe the relationship which seemed to exist between it and the grippe. The writer is aware that inflammation of the lungs may be induced by other pathogenic microorganisms than the diplococcus of pneumonia, such as the bacillus of bubonic plague and tubercle bacillus, and is also fully aware of the susceptibility to what is now called "croupous pneumonia" during an attack of grippe. The relationship which seemed to exist between these diseases will be considered subsequently in this article, first by the study of the individual cases of pneumonia, and later in the epidemic of grippe.

In presenting this report I desire to say that I hope that certain inferences, which now seem tenable, may be left open to me for proper revision and correction, should such prove to be erroneous by more complete researches on this subject. I believe, however, that a report of the cases will furnish additional evidence of the infectious nature of the two diseases—croupous pneumonia and grippe.

Cases numbered 1 to 8 under the head of "pneumonia" correspond to the same families numbered 1 to 8 under the head of "la grippe."

Case I.—The first case of croupous pneumonia which occurred in the Messer community developed on February 21, 1905, in the person of W. R., a boy nineteen years of age, who had during this season been exposed to grippe, but not to croupous pneumonia. On February 14 he had been out hunting when the ground was covered with snow and ice. On the following day he had a cold and two days later had a severe cough. On February 17 he had some fever, and two days later developed a pain in the chest. He was examined on February 21, and lobar pneumonia was found. He was ill of pneumonia for six weeks. The lower lobe of the right lung was consolidated. There had been no other cases of pneumonia in his family and no subsequent cases of pneumonia developed after his recovery. No other member of the family developed grippe after his recovery from pneumonia. This patient had grippe in February, 1904, and measles in April following. No member of his father's or mother's family had ever previously suffered from pneumonia.

Case II.—The patient, Mrs. T. B. S., was a woman, aged thirty-five years. She had not been in the same room with a pneumonia patient for eleven months. She was taken ill with grippe, February 27, but did not go to bed. Croupous pneumonia developed March 6, the onset being ushered in with a severe chill and high fever. When first seen by the physician attending her on March 7 she was expectorating large quantities of blood. The temperature ranged about 104° F. She was in the sixth month of gestation, miscarried on March 9, and died March 11. The entire left lung and lower lobe of the right lung were consolidated.

The patient had never previously had pneumonia. Her brother, many years before, had suffered from pneumonia, but had recovered. Her father had at one time had pneumonia.

On the evening of March 7 or morning of 8 her sister and her sister's child (aged eight years), then seemingly in perfect health, moved over to the patient's home to nurse her. On the third day after going to the patient's house this sister and child, together with the patient's husband and daughter (the latter, Case III.), fell ill of the grippe almost on the same day. The symptoms in these cases were cough, pains, through the chest, fever, laryngitis, and otitis media. The husband was sick one week, and the others remained ill for two or three weeks.

Case III.—This patient, M. A. S., aged nine years, was a daughter of the patient just mentioned (Case II.). She had been in the room with her mother, who developed pneumonia on March 6. About March 9 she developed grippe, and on March 11 or 12 croupous pneumonia came on, the upper lobe of each lung being consolidated. The patient

had fully recovered on April 11. Her grandfather on the mother's side had years before suffered with pneumonia, but had recovered. Her grandfather on the father's side died with pneumonia in 1883.

Case IV.—The patient, Mrs. J. B., was a woman aged 25 years. She had not been exposed to any case of pneumonia. About March 5 she developed grippe, but did not go to bed. Pneumonia developed with a chill at 1 A. M., on the night of March 12. When first seen she was expectorating large quantities of blood (temperature 104°), and the upper lobe of each lung was consolidated. She had a miscarriage (sixth month of gestation), on March 15, and died March 20. This patient resided about 200 yards distant from the home of her father's family in which grippe was prevailing, nearly every member of the family suffering with it. She had made many visits to this house during the time the inmates suffered with the grippe. She had never before suffered with pneumonia, and no member of the family had ever had the disease.

Case V.—The patient, R. B., was a boy, aged two years and two months, living with his mother (Case IV.), and had been exposed to both pneumonia and grippe. About March 1 he became ill with grippe (cold and cough), and on March 24, though he had not entirely recovered from the grippe, was removed out of the neighborhood a distance of some ten miles. Pneumonia developed March 28 and the child was seen by a physician only once, that being April 4; he found the lower lobes of each lung consolidated. Patient was complaining of pain in the chest, was breathing fifty or sixty times per minute, and had a temperature of 103° or 104°. Death occurred April 5. The child's mother died of pneumonia on March 20. One aunt, one uncle, and one cousin had suffered with pneumonia during this epidemic of grippe (see Cases VI. and VII., and also the case appended). The child had never previously had pneumonia.

Case VI.—Patient, C. B., was a woman, aged twenty-four who had nursed her sister (Case IV.) suffering with pneumonia. About March 8 the patient developed grippe (cough, cold, body pains, and perhaps fever), but did not go to bed. On March 18 she had a chill about 2 A. M., followed by croupous pneumonia, which ran a typical course. The upper lobe of the left lung was consolidated. Recovery occurred at the end of two or three weeks. The patient's father and mother had never had pneumonia. One sister, one brother, and two nephews had pneumonia during this epidemic of grippe. The patient had not previously suffered with pneumonia.

Case VII.—The patient, B. F., was a girl, eight years of age. About March 12 she began to have pains in the back and chest, cough, and fever. The tongue was dry, and parched. The bowels were constipated and the abdomen slightly tympanitic. A physician was called, and on March 18 examined lungs, but found nothing abnormal. On March 19 the lungs were again examined, and it was found that the left lung and lower lobe of the right lung were consolidated. The patient died on March 22. One of the patient's uncles on the father's side, and one of her uncles on the mother's side had suffered with pneumonia. The patient had never previously had this disease.

Case VIII.—The patient, E. B., was a man, aged about thirty years, who lived some twelve miles from the home of his sisters (Cases IV. and VI.). On March 22, while he was helping nurse his sister who had pneumonia, he developed grippe, but he did not go to bed. After the burial of his sister (March 20), he returned home, some twelve miles away. On March 28 he became wet by rain and during the night following he had a chill, followed by all the typical symptoms of pneumonia. The lower lobe of the left lung was consolidated. The patient fully recovered at the end of two or three weeks. This patient's two sisters (Cases IV. and VI.), and his nephew (Case V.), all had pneumonia during this epidemic of grippe. The patient had never previously suffered with pneumonia.

Case IX.—While the following appended case of pneumonia did not occur in the neighborhood of Messer, it may have some bearing upon the question of susceptibility of certain families in their relation to pneumonia. The patient was the son of the patient in Case VIII., the nephew of Cases No. IV. and VI., and a cousin of Case V. Or in other words, of this series of nine cases of pneumonia, four occurred in one family. This patient's aunt and cousin had died of pneumonia during this epidemic of grippe. The patient was a boy, aged three years, who lived with his father, twelve miles distant from Messer. The child had not been away from home, and had not been exposed to any case of croupous pneumonia. For a few days previous to March 29 he had suffered from a cough and cold. The patient lived in the same room with his father, who developed pneumonia on March 28. The patient developed croupous pneumonia on the following day, or one day later than the father. The lower lobe of the right lung was consolidated, and recovery occurred at the end of two or three weeks.

Did any of these cases of croupous pneumonia contract the disease from any of those afflicted; and if so, what was the period of incubation?

In considering these eight cases of croupous pneumonia above presented, it is found that out of this number there were four who had been exposed to other cases of croupous pneumonia, namely: Cases III., V., VI., and VIII. and in whom there was some possibility of infection from forms of pneumococci of sufficient virulence to bring on an attack of croupous pneumonia.

A summary of these four cases so exposed may be made as follows: Case III., M. A. S., was in a child nine years of age. Her mother had developed pneumonia March 5, and six days later pneumonia developed in the case of the child. Case V., R. B., was in a child two years of age. The mother had developed pneumonia on March 12, and sixteen days later pneumonia developed in this case. Case VI., C. B., was a young lady, twenty-four years of age, who had nursed her sister, who developed pneumonia March 12, and six days later she fell ill of this disease. Case VIII., E. B., occurred in a man, thirty years of age, and apparently in perfect health. On March 17 he went a distance of some twelve miles to nurse his sister, suffering with pneumonia, and himself developed pneumonia eleven days after his arrival.

In this series of four cases in persons who had been exposed to other cases of croupous pneumonia, the shortest possible period of incubation could have ben six days, and the longest possible sixteen days, or a general average of ten days.

In this connection it might be interesting to reiterate that in the following year (1905), though 10 per cent. of the population in this locality had grippe, not one case of pneumonia occurred.

The question of heredity, or those cases in which the parents or grandparents had previously suffered with pneumonia:

Case II.—Father several years previously had suffered with pneumonia.

Case III.—Grandfather on mother's side years before had suffered with pneumonia.

Case VII.—One uncle on father's side had pneumonia ten or fifteen years previously; and one uncle on mother's side had pneumonia six years previously.

Therefore, of this series of eight cases of pneumonia, heredity might have exerted some influence in 37 per cent. of the cases. No one in this series of eight cases ever previously had pneumonia.

The question of susceptibility of certain families towards this disease has already been noted, but it may be well to reiterate that of these eight cases (and one appended case), there were four which occurred in one family, though the patients lived in different houses.

The Part of Lung Involved.—Case I.—Lower lobe of right lung (recovered). Case II.—Entire left and lower lobe of right lung (died). Case III.—Upper lobe of each lung (recovered). Case IV.—Upper lobe of each lung (died). Case V.—Lower lobe of each lung (died). Case VI.—Upper lobe of left lung (recovered). Case VII.—Left and lower lobe of right lung (died). Case VIII—Lower lobe of left lung (recovered).

Age of Patients.—Case I., aged nineteen years; Case II., aged thirty-five years; Case III, aged nine years; Case IV., aged twenty-five years; Case V., aged two years; Case VI., aged twenty-four years; Case VII., aged eight years; Case VIII., aged about thirty years.

The fatal cases occurred in patients aged respectively thirty-five years, twenty-five years, two years, and eight years.

Mortality.—Of the eight cases here reported there were four deaths or a mortality of 50 per cent. This high mortality was doubtless due to the fact that those physicians who had charge of the fatal cases did not have the opportunity of seeing the patients as a rule in the early stages and could pay only infrequent visits to them, sometimes not oftener than once in every two days, and in one instance only one visit was made. In two of the fatal cases miscarriage occurred about the sixth month of gestation. In this series the writer of this paper treated only three cases (Cases VI., and VIII, and the appended case), and all the patients recovered.

After studying this series of cases of pneumonia it was found impossible to determine the possible source of infection in the first patient, since she had not been exposed to any other case of pneumonia. The disease evidently came on as a complication or sequela of grippe. Whether she harbored in the sputum the virulent diplococcus of pneumonia before the attack came on was not determined.

Pneumonia and Grippe.—From an investigation of the histories afforded by these eight patients, who suffered with pneumonia, it is believed to be probable that every one of them suffered from grippe for a few days previous to the onset of pneumonia. This assumption is based purely on the symptoms and clinical signs presented, since the microscope and cultural methods were not resorted to in any instance. In the absence of complete bacteriological examinations the writer is fully conscious of the errors which might occur from making such an assumption as this. He is also fully conscious of the errors which might occur in differentiating correctly between a "severe cold," and grippe, and also the prodromal symptoms of pneumonia by the clinical signs and symptoms presented in any given case.

The symptoms and clinical signs exhibited by the cases of grippe in this epidemic were as follows: Cough, pains through the chest, fever, laryngitis, otitis, bronchitis, constipation, and a considerable degree of prostration, lasting in some instances two or three weeks. In all the cases of pneumonia the grippe was the first to appear. In some instances the grippe persisted in the family while the pneumonia was in progress, and in certain families the grippe continued after the pneumonia had disappeared. In one family (Case VII.), there was only one case of grippe, and this was later followed by pneumonia, though there were several other members of the family, aged respectively, five, eleven, thirty-one and thirty-seven years.

The climatic conditions (snow and ice, with rain and changeable weather), was perhaps the principal cause in rendering the soil of man more fertile for the cultivation of the bacillus of grippe, followed in certain instances by the possible development of the virulent pneumococcus and consequent production of croupous pneumonia.

Grippe in the Douglas Community in Previous Years.—At different periods during the past few years, grippe has prevailed to a certain extent in this community. Quite a number of cases existed here during the month of February, 1904, while, as has been previously stated, a few cases persisted throughout the following winter and were prolonged into February, 1905.

Grippe in the Family of Case I. (see Pneumonia, Case I.), W. R.—About January 1, 1905, the youngest child in the family, aged eleven years, had grippe which lasted one week; the second case in this family was the next older, aged fourteen years, who developed grippe about January 15; the third case was in the mother, aged forty-two years, who developed grippe about February 1; and the fourth case was the patient, aged nineteen years (see Case I., Pneumonia), who developed grippe February 15 (after having been out hunting in the snow), and who developed pneumonia on February 21.

Possible Source of Infection.—In this family patients I. and II. slept together in the same bed and one developed grippe fifteen days after the first one became affected. Patient III. was the mother who slept in a different room. Patient IV. (who had both grippe and pneumonia), until the pneumonia developed, slept in an adjoining room with his brother, aged twenty-one years, but this brother never had the grippe.

The only members of the family who did not have grippe were the father, aged sixty years, and the son, aged twenty-one years. There were three cases of grippe in the family during February, 1904. They all occurred at the same time and the patients were aged respectively eleven, seventeen, and nineteen years. Two of these cases slept in the same bed. The possible source of infection in the first case perhaps could not be traced.

Grippe in the Family of Case II. (see Pneumonia Case II)., Mrs. T. B. S.—The first case to develop grippe in this family was the mother (see Pneumonia Case II.), aged thirty-five years. She developed grippe February 27, but did not go to bed. Croupous pneumonia developed March 6. On March 9 her husband and her son (the latter fifteen years of age) and daughter (aged nine years—see Pneumonia Case III.), and another daughter, aged four years, all fell ill of grippe about the same day.

Possible Source of Infection.—The husband and three children developed grippe ten days after it occurred in the case of the mother. In this family there was only one member who escaped the grippe. After this patient with pneumonia recovered no other cases of grippe developed. The source of origin of grippe in the case of mother is unknown.

Grippe in the Family of Case III. (see Pneumonia Case III.), M. A. S.—Was a daughter of Case II. (see Pneumonia) aged nine years. She and her father, and two sisters and a brother all developed grippe about nine or ten days after the mother first became ill of grippe. This patient had been in the same room with her mother (see Pneumonia Case II.) and on March 11 or 12 this patient developed croupous pneumonia. Her mother developed pneumonia five or six days previously.

Possible Source of Infection.—This patient became ill of grippe ten days after it had developed in the person of the mother. The possible source of origin of the disease in the case of the mother was not investigated. In this connection it might be well to state that the sister of Case II. and aunt of Case III. (see Pneumonia) about ten days after Case II. developed grippe, went over to nurse Cases II. and III. This sister who went to nurse the sick ones (the mother ill of pneumonia and child with grippe) took with her a little daughter, aged eight years, both of whom were in perfect health. Within three days after the two latter persons entered the house occupied by the sick, both of them developed grippe, March 9.

Grippe in the Family of Case IV. (see Pneumonia Case IV.), Mrs. J. B.—In this family there were five members, namely: the father, about thirty years of age, the mother, twenty-five years of age (see Pneumonia Case IV.), one girl aged six years, another girl aged four years, and a little boy, aged two years and two months (see Pneumonia Case V.). They resided about 200 yards distant from the home of Case VI. (see Pneumonia). The youngest child, aged two years and two months, developed grippe March 1 and was at the time sleeping with its mother. The mother, although in good health, continued to sleep with the sick child until March 12. Six days after grippe developed in the child the mother became affected with grippe (March 5) but did not go to bed, and on March 12 the mother developed croupous pneumonia. When the mother developed pneumonia (March 12) the child was taken out of its mother's bed and afterwards slept by itself in a cradle adjoining the bed. The mother died of pneumonia March 20. On March 24 this child was taken through the country a distance of some ten miles. It developed pneumonia March 28 and died April 5. The father during February and March was sleeping with the two children, aged four and six years respectively, and continued to sleep with them until the mother developed pneumonia on March 12. About March 1 the little girl, aged four years (and who was sleeping with its father) developed grippe and had a mild attack. This sick child for a few days continued to sleep with its father, and the other sister, aged six years, but it was later taken over to the home of its grandparents, some 300 yards distant. The other sister, six years of age, was then allowed to sleep by herself, but on March 10 developed grippe. The father, though at the time sleeping with the sick child suffering with grippe, and waiting upon both his wife and children, never developed grippe.

Possible Source of Infection.—Careful inquiry fails to reveal the possible source of infection in the first case, since no one suffering with grippe (or convalescent) had visited this family, and these patients had not gone to any place where grippe was prevailing. In the other cases occurring in this family the possible source of infection might more easily be traced.

Grippe in the Family of Case V. (see Pneumonia Case V.), J. B.—A boy, two years and two months of age. This case is the youngest one in the family referred to under the head of Case IV. (see Grippe) who developed grippe March 1, and has been duly considered above.

Grippe in the Family of Case VI. (see Pneumonia Case VI.), Miss C. B.—Of this family there were seven members living at home, namely: the mother and father and children, whose ages were as follows: the father, aged sixty years; the mother, aged forty-seven years; a daughter, aged twenty-four years, a son, aged twenty-one years; a daughter, aged seventeen years; another daughter, aged twelve years, and a son, aged eight years. They resided about 300 yards distant from the home of Case IV. (see Pneumonia and Grippe). The youngest boy, eight years of age, slept with his mother and father during February and March. The daughter, aged twelve years, slept alone, while the other two daughters, aged seventeen and twenty-four years, slept together until March 12. The first person to develop grippe in this family was the boy, aged twenty-one years, who became ill on February 28; the second person who became ill of grippe was the father, which occurred on March 3; the third patient was the mother, who became ill on March 6; the fourth case was the girl, aged twenty-four years, who became ill March 8, and who at the time was sleeping with her sister, aged seventeen years. While having the grippe she continued to sleep with her sister, but the latter person never developed grippe. The fifth patient was the boy, eight years of age, and who became ill March 15. This boy had been sleeping with his father and mother, both of whom had suffered with grippe a few days before he became affected. The only members of this family who never developed grippe were the daughters, aged twelve and seventeen years. The only member of the family who had grippe last year was Case VI. (see Pneumonia). After the pneumonia had subsided, March 27, no other member of the family developed grippe.

Possible Source of Infection.—In the first patient the possible source of infection cannot be traced, while in the other instances such sources of infection might perhaps be more easily done.

Grippe in the Family of Case VII. (see Pneumonia Case VII.), B. F.—The only case of grippe which occurred in the family during this epidemic was the patient, a girl, aged eight years, who developed grippe March 12 and pneumonia March 19. There were four other members of the family, aged, respectively, thirty-seven, thirty-one, eleven, and five years. No member of the family had suffered from grippe or pneumonia during the previous year. Five years previously three members of the family had grippe lasting two weeks. No case of pneumonia had occurred in the house for eight years.

Possible Source of Infection.—There had been no illness of any kind in this household since the previous June. Three weeks before the patient became ill she had spent the night at the house of a relative in which grippe was prevailing. For many months no one had visited her home who had previously been ill. The patient had been attending a school in the neighborhood in which the pupils were suffering from cough, and some perhaps were convalescing from grippe.

Grippe in the Family of Case VIII. (see Pneumonia Case VIII.).—E. B., was a man, thirty years of age. He was a brother of Cases IV. and VI. (see Pneumonia) and lived about twelve miles distant from them. On being apprised of the illness of his two sisters, he, on March 17, went to aid in nursing them. He stated that when he left home he was feel-

ing perfectly well, and there had been no illness in his family. He helped to nurse his sisters and on March 22, or five days from the time he began nursing them (one of whom had developed pneumonia on March 12, and the other one of whom developed pneumonia the day after his arrival), he fell ill of grippe. On March 23 he returned to his home and lay in bed two days, during which time he complained of having had fever, pains, and cough. He afterwards got up and went to work. On March 28 he became wet by rain, and during the night developed croupous pneumonia. His son, aged three years (see appended case of Pneumonia) sleeping in the same room with him, began to have a cough a few days previous to March 29, and on that day developed croupous pneumonia.

Possible Source of Infection.—Infection might have occurred while patient was nursing his sisters, five days before he fell ill of grippe. Whether his child (appended case) had grippe previous to the development of pneumonia is not known, but the circumstance at least looks suspicious.

The Possible Period of Incubation in These Cases of Grippe.—Of this series of cases of grippe the shortest possible period of incubation could have been three days; and the longest fifteen days or a general average of seven days.

In this epidemic of grippe age did not seem to exert any influence in regard to the susceptibility of the patient. In some instances the first one affected was very young, in another the first affected was middle-aged, and in still another instance the first one affected was quite old. Sex exerted no influence.

In reviewing this series of cases of grippe it might be impossible to determine the source of infection in the first case of grippe occurring in the Messer community, since the disease had been more or less prevalent throughout the winter. The prodromal symptoms of croupous pneumonia must of course be considered in analyzing these cases of pneumonia and grippe.

Conclusions from the Study of this Series of Cases of Croupous Pneumonia.—While it is granted that croupous pneumonia may arise or develop in persons who have not been recently exposed to any other case of pneumonia (such as in those who may carry in their sputum the virulent diplococcus of pneumonia), which event might perhaps occur after getting wet by rain, and while it is granted that the evidence furnished in this investigation is based purely upon clinical grounds not supported either by microscopic findings or cultural methods, and while the writer is fully conscious that the absence of such data renders these observations less conclusive than they otherwise would be, it is believed that from a careful study of this series of cases of pneumonia the following conclusions seem tenable:

1.—Infection of the human system by the bacillus of grippe so lessens the natural immunity, or prepares the soil of man, that subsequent infection by the virulent diplococcus of pneumonia and consequent production of croupous pneumonia may more readily occur.

2.—The possible average period of incubation of croupous pneumonia by air transmission is about ten days.

3.—The influence of heredity renders certain families more susceptible to croupous pneumonia.

4.—The rise and fall of a large series of cases of croupous pneumonia occurring within a limited time and locality, may be dependent to a large degree upon the coexistence of grippe.

5.—Pregnancy occurring during an attack of croupous pneumonia renders the prognosis more grave.

Conclusions from the Study of this Series of Cases of Grippe.

1.—While grippe appears to be an infectious disease, not all of those who come in direct contact (such as sleeping in the same bed) contract the disease.

2.—The possible average period of incubation of grippe by air transmission is about seven days.

3.—One suffering with grippe should be warned against the tendency to develop pneumonia.

4.—An infant suffering with grippe should not be permitted to sleep with a healthy mother, and when the mother is affected she should not be permitted to sleep with a healthy infant.

5.—The weather conditions, such as excessive rains with snow and marked variations in the temperature exert the greatest influence in the spread of grippe and consequent production of pneumonia.

6.—Age and sex exert no protective influence against grippe.

7.—Proper care should be exercised to destroy all sputa and fomites which may aid in the spread of grippe.

My sincere thanks are herewith tendered to Drs. B. T. Bryant and C. H. Willingham, of Whitehouse; Mrs. Sam Messer, of Messer, and Dr. J. Z. Ferrell, of Tyler, all of whom so kindly assisted me in compiling the data regarding these cases.

THROAT DISEASES CAUSED BY THE MISUSE OF THE VOICE.

By N. J. POOCK VAN BAGGEN,

THE HAGUE, HOLLAND.

EVERY specialist for throat diseases knows that very many of the sufferers from those affections are to be found among those whose profession demands constant use of the voice, as orators, clergymen, professional speakers, and singers. The clergymen's sore throat disease is known to every throat specialist. It is obvious that the misuse of the voice is in most of those cases the cause of the affliction.

The patient, after speaking or singing, will complain of a dry and hot feeling in the pharynx and the larynx, of irritation, and a frequent cough. It is only with the utmost exertion that the patient delivers his speech or song, and when the work is done he is hoarse or his voice gives out entirely. Gradually the evil increases, and finally the patient, singer, or orator consults his doctor in the hope of finding relief for his sufferings.

Examining those patients, we shall find the following characteristic symptoms: Catarrh of the pharynx and of the larynx, with congested and swollen mucosa. The pillars of the fauces are swollen and often highly developed. There is always paresis of the vocal cords which are red or yellow in color and which do not close well. The paresis of the vocal cords is mostly united with paresis of the m. cricothyroid anterior, the m. thyroid aryt. int., and the m. crico. aryt. laterales. In some serious cases a swelling of the arvepiglottic ligament is observed. Organic defects are not the cause in this case. They may be. It is known well enough that enlarged tonsils, adenoids, nasal polypus, or malformations of the tongue may be the cause of exertion in speaking, hoarseness, and loss of the voice. This is not the case here; the fault is purely functional. This is clearly proved by the

fact that as soon as the patient gives entire rest to his organ the affliction decreases and sometimes even disappears altogether, to reappear, however, as soon as the voice is used again in the wrong way.

Observing those patients while speaking or singing, we shall see that they do not use their breathing, articulation, and vocal muscles normally. There is no harmonious cooperation between those three groups of muscles; the faulty breathing and articulation fail to support the vocal muscles sufficiently, and are therefore an obstacle to the undisturbed vibration of the vocal cords.

As the breath is the chief element in the production of voice and speech, the patient has to learn in the first place the right way of breathing and how he may make the best use of the breath in phonation. Usually the breathing is clavicular in those cases, but even when the breathing is diaphragmatic the patient does not know how to control his breath and how to direct it. He lets it go as it will. Instead of striking the hard palate, the sound or vibrating air strikes the soft palate, whereby the tone is smothered as in a room hung with heavy curtains, and in order to make himself understood the orator or singer has to exert his voice to the utmost, while, if the breath is directed against the hard palate the voice is clear and carries to a long distance without any particular effort. The combined diaphragmatic and costal breathing is recognized as the best way of breathing. We get not only the largest amount of air and the best control of it in this way, but this is also the only way of breathing by which we are able to direct the breath consciously.

In regard to the articulation, we shall see the back of the tongue rising as a thick and heavy wall between the opening of the mouth and the pharynx. The consonants are not formed in the anterior part of the mouth with the tip or the middle of the tongue leaning against the hard palate, as is the right way, but the articulation is done way back in the mouth. K, g, and r are formed between the back of the tongue and the soft palate, or the pharynx.

The thickness of the voice tells us also that the action of the soft palate is insufficient; while the dullness of the voice betrays to us a lack of resonance caused by the swelling of the mucous membrane which lines the resonance cavities. However, those two defects just mentioned have to be considered as a result, but not as a cause of the disease.

As to the use of the vocal cords, we observe mostly an unnatural contraction of the muscles of the larynx. When pronouncing the vowel we hear constantly the shock or spasm of the glottis which means that the vocal cords are pressed tightly together by the pronunciation of each vowel. It is clear that this unnecessary effort is fatal to the already overstrained cords, and is not one of the least causes of the congestion of the larynx.

All speakers who misuse their organ must be specially warned not to take singing lessons to improve their speaking. The speaking has to be faultless before any good results in singing can be obtained.

It is superfluous to say that no exercises are to be undertaken before the patient has gone through a judicious medical treatment united with rest to the organ.

108 PLAATS.

Pregnancy and Abortions in Women Employed in Tobacco Manufactories.—J. Livon has investigated this subject. He refers to the opinions of various authorities who have been interested in the effect of tobacco on the pregnant woman. The opinions of these men vary. Among others, Brochard and Decaisne are convinced that women who work in tobacco manufactories are more subject to abortion than other women. Other observers, for example Ribemont and Lepage, do not believe in the harmful influence of tobacco on the progress of pregnancy or on the newborn. All observers are in accord concerning the considerable mortality of the newborn whose mothers work with tobacco. The larger number of deaths occur from the second to the fourth month. This is the period in which the mother resumes her work and gives the child, according to Vinay, nicotinized milk. A mother exposed in her work to the vapors of nicotine ought not to nurse her child. Her milk has a very pronounced odor of tobacco, although the presence of the poison has not yet been determined chemically.—*Revue Française de Médecine et de Chirurgie.*

Alteration of the Functions of Nutrition in the Nursing Infant.—G. Mya discusses the alterations in nutrition produced in the nursling by the use of cow's milk as a substitute for mother's milk. In some infants it agrees perfectly, especially when its use is not begun in the first months of life. In others, and when begun soon after birth, it produces affections of the digestive system, nervous system, skin, circulatory apparatus, and finally death from marasmus. The author believes that no single factor is the cause of these changes. The excess of casein, excess of fat, which being saponified uses up the alkalies of the body, the antagonism between the human and the cow's albuminoids, the changes due to sterilization of the milk, making it less digestible, may all contribute to the bad effects. Another factor is the rapidity with which the milk is taken, permitting the child to be easily overfed. Individual idiosyncrasy is an added factor in the causation of the evil effects of the milk. The liver has as one of its functions the reduction of alimentary and other substances, so as to render them innoxious in the circulation, and in the baby this power is slight. The weakness of the infant makes him succumb more easily than the adult to infections or general diseases. As to the treatment of such conditions, medicines should be little given. The indications are to change the diet so as to render it easily assimilable by the baby. Get him a wet nurse if possible. If not modify the milk, so as to render it easy of digestion.—*Rivista Critica di Clinica Pediatrica.*

Resistance of the Spores of Bacillus Anthracis.—Santi Sirena has shown that spores of anthrax, when dried in the hot sun in free air, live for nineteen days. In the thermostat in dry air they live 400 days. When dried by chemicals they live a longer time. Creolin up to 60 per cent. strength does not destroy them, but when used pure, they die in twenty-four hours. The bacilli are killed in fresh blood after ten minutes by 10 per cent. creolin, and after twenty minutes in the spleen of a diseased animal. In sterilized garden earth they lived fifteen years. In damp earth they lived four years. In earth saturated with moisture they lived thirteen years. In sea water they lived eight years. In sterilized water they lived more than eight years. In pregnant animals they passed from the mother to the fetus by way of the maternal and fetal placental vessels. They were found in the chorion, and in the placenta in great numbers. There were alterations of the muscular and epithelial layers of the uterus, consisting of hyperemia, dilatation of the vessels, and extravasation of blood. There were extravasations in the serotina also.—*Archivio per le Scienze Mediche.*

MEDICAL RECORD.

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MUNICIPAL CARE OF THE TUBERCULOUS.

THE active campaign which is being waged in this city against the spread of tuberculosis may be said to have had its actual beginning in 1894, when the reporting of cases of pulmonary tuberculosis in public institutions was made compulsory. This was supplemented in 1897 by an amendment to the Sanitary Code, in which the condition was included among infectious, communicable, and reportable diseases. The scope of this work has been gradually broadened, and it was early recognized that the establishment of a municipal clinic or dispensary would be of great assistance in the attainment of several most desirable objects. These were the early recognition and diagnosis of pulmonary tuberculosis, the intelligent supervision of patients under treatment, the continued observation of the indigent, the removal of suitable patients to a hospital, and the care of those suffering from laryngeal tuberculosis, which is among the most distressing and painful of complications. The first report of this clinic, which was opened in March, 1904, shows that the results attained have been most satisfactory, and one of the important features of the work is that almost fifty per cent. more patients were seen in the second than during the first year in which the clinic was open. This shows conclusively the value of the institution in bringing new cases to light, and many cases hitherto concealed were sent to hospitals, benefiting in this way both patient and family. Sanatorium treatment was also made available for a large number of incipient cases, and many other patients were assisted by the furnishing of an extra diet.

Although much has thus far been done with the means at hand in bringing tuberculosis under control, the authorities point out three essentials which must be carried out to complete this process. First and foremost comes the education of the people as to the nature of the disease and the procedures to be adopted to avoid its contraction; second, the early recognition of the disease and the removal to more favorable conditions of all sufferers, and third, the location and disinfection of all infected houses and premises occupied by the tuberculous subjects. It is only a public clinic, undertaken and supported by municipal agency, which can hope to enforce the suggestion of bringing patients suffering from tuberculosis under direct control, particularly those of the indigent class. It constitutes a form of paternalism in government which should be encouraged, however, rather than combated, as is unfortunately done in certain quarters. In addition to the help which it affords the needy, an institution of this kind should also serve as an object lesson to the profession in showing what can be done in the treatment of the disease with the means at hand. Too many practitioners still cling to medication as the essential in treatment, and neglect the many dietetic and physical measures which have been shown to effect the largest percentage of cures. The thoroughly scientific and ethical character of this public institution is well shown by the leaders in the movement, and the united and cordial support of the profession in this city should be extended to it in the effort to eradicate, if such a thing were possible, or at least to limit the spread of this destroyer of man."

THE EFFECT OF SALIVA ON BACTERIA.

IT is a well-known clinical fact that operative or traumatic wounds in the oral cavity have a tendency to heal kindly in all but exceptional cases. In explanation of this phenomenon it has been assumed that the saliva possesses bactericidal properties which serve to protect the individual against infection, although no one has come forward with any satisfactory experimental proof to sustain the claim. An attempt to solve the question has recently been made by Clairmont of v. Eiselberg's clinic in Vienna, who investigated the bactericidal properties of the saliva in animals and the human subject. His results, which are published in the *Wiener klinische Wochenschrift*, November 22, 1906, form an interesting contribution to the subject and show that the salivary secretions can be depended upon to furnish a certain degree of protection to the organism.

When wounds of the oral cavity heal by primary union, this fact, according to Clairmont, may be ascribed primarily to two conditions, viz., an unsuitable local environment and the mechanical cleansing action of the salivary flow. No specific bactericidal action of the saliva could be detected in tests made with the pathogenic germs of typhoid fever or tetanus, or with staphylococci, streptococci, or the colon bacillus, nevertheless a small number of organisms will find here such unsuitable conditions present for extended growth that they are soon destroyed. In this respect the saliva may perhaps be compared with physiological salt solution. Animals seem to have these properties much more markedly developed than human beings. Aside from individual variations, differences in the secretions of the submaxillary and of the parotid glands could be determined in the case of most of the species examined. The former produces saliva which seems to have but little or no effect at all on bacterial growth, while that from the parotid of both man and animals has a well-marked inhibitory action on the same, so that a considerable number of bacteria may be destroyed. It was found that the most intense effect was present in goats and other ruminants, and that the pyogenic organisms suffered to the greatest extent. In culture experiments, however, the addition of a favorable medium to the saliva seems to offset whatever inhibitory action may have been manifested by the salivary secretions. If the latter, in either man or animals, are artificially stimulated the resultant fluid will after a time be found to be perfectly sterile or to contain only a very small

number of organisms, which soon perish. Another curious fact which was noted in the course of these experiments was that the excised suppurating parotid gland showed a remarkable resistance to decomposition.

The observations made by Clairmont afford us some ground for believing that the conditions present in the oral cavity constitute an important element in the protection of the organism against infection from without. If this is so it is possible that the protective action may be increased by stimulating the salivary flow and washing away various culture media which would otherwise favor bacterial growth. This is probably of more importance than any bactericidal action which the saliva may exert.

UTERINE RELAXATION.

An atonic condition of the uterus has been observed under various circumstances, but most commonly perhaps during the puerperal state. Kossmann some years ago directed attention to the fact that it may also occur in nonpuerperal women during or after the operation of dilatation and curettage, and since then various explanations have been advanced to account for the phenomenon. The most probable of these is concerned with a local congestion of the uterus due to the operative invasion which also results in a relaxation of the uterine blood-vessels. The accompanying increase in the blood pressure is then believed to result in a straightening of the tortuous vessels which carry the relaxed muscle along in this process. The whole uterus swells and straightens out like an erectile organ while the cavity is distended. If the tone relaxation of the vessels and that of the muscle remain entirely coordinated the phenomenon will end as it began—simultaneously; the congestion disappears and the muscle contracts. Should there be, however, an incoordination, which is readily possible when the irritation is artificial instead of physiological, the congestion may disappear before the muscle regains its tone, the expansion remains and the condition becomes one of complete atony.

This condition of uterine atony in the nonpuerperal state as the result of dilatation and curettage probably occurs quite frequently, but is not recognized or the operator assumes that perforation has taken place. The subject is discussed in a recent paper by Maier in *Surgery, Gynecology, and Obstetrics* for December, 1906. In reporting several cases the writer draws attention to the practical interest and value of a definite knowledge of this fact. Dilatation and curettage are probably among the most frequently performed gynecological operations. For this reason it is well to bear in mind the acute changes which may take place in the uterus at this time and not to be too hasty in assuming that perforation of the organ has taken place when the condition is merely one of atony. Unless this fact is borne in mind, an abdominal operation may often be undertaken in cases in which, after dilatation, the curette suddenly slips into the uterus to an apparently abnormal degree.

Another possibility, to which the writer does not call attention, however, which may result from this atonic condition of the uterus, is the entrance of irrigating fluid through the Fallopian tubes into the abdominal cavity. The fact has occasionally been referred to, and in isolated instances in which a laparotomy has followed curettage, the fluid has actually been demonstrated free in the peritoneal cavity. This phenomenon may be explained in the same way, and a knowledge of the possibility of the accident should lead to the exercise of great care in douching the uterine cavity; and to the use of absolutely sterile and nonirritating solutions for the purpose, so that if they do gain entrance into the abdominal cavity a minimum of harm will result.

A New Suture Material.

The disadvantages inherent to most of the suture materials in common use are too well known to require rehearsal, but several new methods of preparing silk for this purpose, founded on what appear to be rather important considerations, described by Wederhake in the *Münchener medizinische Wochenschrift*, December 4 and 11, 1906, seem of more than usual interest. After a lengthy disquisition on the physical properties which render silk, catgut, and silver wire undesirable as routine materials for buried sutures, the author describes several new forms of suture material which he says possess decided theoretical and practical advantages. The first of these is the so-called silver silk, which is intended for use as a ligature material in small sizes only, and not for buried sutures. Its advantage is that it possesses powerful and lasting antiseptic properties. It is prepared by rendering the silk fat-free by extraction with ether and absolute alcohol, sterilizing by boiling in 1-1,000 aqueous solution of bichloride of mercury, immersion in a 10 per cent. peroxide of hydrogen solution, and treatment for several hours with an alkaline silver solution, by means of which it becomes impregnated through and through with metallic silver. This silver solution is made by adding potassium hydrate solution to a 1 per cent. solution of silver nitrate and dissolving the resulting precipitate in ammonia. As a last step the material is again sterilized by boiling in bichloride solution. The author is of the opinion that a material intended for use in buried sutures should not be permeable by fluids, and in order to effect this he impregnates silver silk prepared as above with caoutchouc. The silver silk is dried, is soaked in chloroform, and is then immersed for from two to twelve hours, according to its size, in a 16 per cent. solution containing 8 grams of caoutchouc in 50 c.c. of chloroform. This material also can be sterilized by boiling in bichloride solution. Silk prepared in this way is not only impermeable to fluids, and therefore not likely to become infected in the wound, but is stronger than the corresponding size of ordinary silk and than the silver wire ordinarily used for suturing. The third of the author's innovations is an absorbable silk. This is prepared in a manner similar to that used in making parchment paper. According to its size the thread is treated for from twenty seconds to four minutes with concentrated sulphuric acid, is washed with water, is dehydrated in alcohol, and is then subjected to a hardening process by means of tannin and absolute alcohol. This silk is said to be as strong as untreated silk and is rendered flexible by treatment with glycerin. It can be sterilized by boiling in bichloride solution, and when buried in the tissues it is completely absorbed at the expiration of from four to six weeks. It would require too much space to reproduce the author's theoretical discussions concerning these

suture materials, but while it may be that others will not be as successful in their practical applications as he has been, they at any rate represent a promising attempt to solve what has been one of the greatest difficulties in operative work.

Primary Carcinoma of the Appendix.

Although in this country the consensus of opinion among surgeons is in favor of inspecting the appendix in all laparotomies in which this is possible and of removing it when any abnormalities are present, this doctrine has not yet apparently gained acceptance in Germany. At least Landau makes a strong plea to this effect in a recent number of the *Berliner klinische Wochenschrift* (December 10, 1906), taking as his text the occurrence of primary carcinoma of the appendix. So far he says sixty-four cases of malignant disease of the appendix have been reported, and he considers that the lesion will be observed much more frequently in future now that more and more attention is being directed to it. In Landau's own case the laparotomy was made for the purpose of enucleating a uterine fibroid and of removing a tube and ovary. The appendix was found stiff and sharply bent on itself with a somewhat enlarged extremity, and was therefore removed. It was not until microscopical sections had been made that the condition was recognized as one of typical carcinoma simplex. Landau, therefore, urges upon his colleagues the rule to inspect the appendix whenever possible, and states that in order to do this he has come to resort more and more to laparotomy instead of vaginal operation. If the organ appears to be healthy both on inspection and on palpation he does not interfere with it; but if there are any evidences of disease, or if the history points even remotely toward appendicular involvement, it should be removed without hesitation.

Suboccipital Tuberculosis.

A surgical operation of unusual difficulty is described by Payr in the *Deutsche medizinische Wochenschrift*, December 13, 1906. It consisted in the removal of considerable portions of the atlas and adjoining structures owing to tuberculous disease. The patient was a woman of thirty-five years, who, eighteen months before the operation, manifested the first evidences of the lesion, consisting in enlargement of the cervical glands and pain behind the ears and in the nape of the neck. Later on, stiffness, dysphagia, and a retropharyngeal abscess developed, and at the time of operation, in addition to a profusely discharging cervical sinus, there was a communication of the abscess cavity with the pharynx. For the details of the operative procedure by means of which the diseased areas were extirpated, and which, of course, presented many technical difficulties, the original must be consulted. The postoperative course was uncomplicated, the extensive wound healed without sinus formation, and now, about a year later, the patient is still free from any evidence of impending relapse and is able to do all her own housework. While, as the author points out, the conditions under which an operation of this sort can be carried out with hope of a radical cure are no doubt but rarely encountered, the fact that even occasionally a patient can be freed from a lesion that must otherwise lead to a miserable death is a sufficient incentive to stimulate the daring of surgeons.

The Geographical Distribution of Gastric Ulcer.

It is a well-known and long recognized fact that certain diseases of the stomach are more prevalent in certain localities than in others, that their symptoms likewise assume varying degrees of importance, and that complications which are prevalent in one place are scarcely ever found in the other. In a recent book Rütimeyer has subjected these facts to a critical analysis, using for the purpose not only his own series of over two hundred cases, but also a large number of extracts from the literature on the subject. This investigation shows conclusively that the frequency of gastric ulcer varies within wide limits in different countries, and that even in a relatively restricted geographical section differences may exist in its constituent parts. The clinical symptoms also vary considerably in men and women, hyperacidity and hemorrhages being more common in the former than in the latter, in addition to a number of other distinctions. Hyperacidity also varies as it seems with the locality: in Zurich, for example, about 20 per cent. of the cases of gastric ulcer are attended by this symptom, whereas in Geneva, not so very far off, nearly 100 per cent. of the cases are thus characterized. These facts are of general interest, and if they can be further developed can perhaps also be made of practical interest in the treatment of this condition, for if climatic influences exert themselves on the progress of the lesion in the manner indicated a knowledge of this favorable effect is of considerable value.

News of the Week.

Memorial to Dr. Christian Fenger.—Original research work in all branches of medicine is to be fostered by an organization in memory of Dr. Christian Fenger. The Fenger Memorial Association for Medical Research was incorporated at Springfield, Ill., recently, the incorporators being Drs. Frank Billings, Ludwig Hektoen, and Karl Doepfner. The plan is to raise a fund of from $5,000 to $10,000 to be used in encouraging medical students to take up original research work in bacteriology, surgery, and other branches of medicine.

Dr. Charles S. Benedict, upon his retirement, on December 31, from the Health Department after twenty years' service in the division of contagious diseases was presented with a silver service by thirty of the men in this department who have served a good part of the time with him. Dr. Darlington presented the gift.

The Weber-Parkes Prize and Medals.—Mr. Edward Liveing, the Registrar of the Royal College of Physicians, London, announces that the next award of these prizes will be made in 1909, and that the adjudicators have selected as the subject of the essay for that occasion: "The value of bacterial products in protecting against or in curing tuberculous diseases, with special reference to pulmonary tuberculosis in man." All essays, together with any preparations made in illustration of them, must be transmitted to the Registrar of the College during the last week of May, 1909, in accordance with the regulations relating thereto, copies of which will be forwarded from the college on application. The award will be made at some time previous to October 18 in that year, on which day the prize and medals will be presented to the winners.

Death Rate at Panama.—The report for November of Colonel Gorgas to the Isthmian Canal

Commission shows that during this month there were sixty-six deaths among the employees of the commission in Panama. This is as against 113 deaths in July, the decrease being largely due to the lessened mortality from pneumonia. Among the 5,000 American employees there were only three deaths. Among the whole population in Panama, employees and others, there were 241 deaths, as against 422 in July.

Brain Surgery and Moral Qualities.—According to the newspapers a fifteen-year-old Cleveland boy who was operated on some time ago by trephining in order to correct moral deficiencies supposed to be the consequences of a depression of the skull due to an accident received in early childhood, has lapsed into his former evil ways. For a time the operation appeared to have been successful in restoring his moral control, but then as the result of the fall of a hammer from a height his head was again injured, and now he is a bad boy again.

To Control Immigration.—A commission to investigate the existing legislation relative to immigration has been appointed by Secretary of Commerce and Labor Straus. The law which regulates steerage accommodations on steamships coming to this country was passed in 1882, and since that time the changed conditions of ship building, etc., have made many alterations desirable in order to conform to the requirements of the times.

A Remedy for Mountain Sickness.—In a recent communication to the *Revue Scientifique*, Professor Agazzotti announces that he has been able to prove that the sole cause of mountain sickness is the rarefaction of the air, and that by administering a mixture of oxygen, carbon dioxide, and nitrogen the symptoms can be entirely prevented.

Bubonic Plague.—Owing to the presence on board of a Lascar seaman suffering from what he officials suspect may be bubonic plague the steamer *Kybfels*, which arrived last week in Philadelphia from Calcutta, is being detained at quarantine. In the week ending November 3, the day the *Kybfels* cleared, there were seven deaths from the plague in Calcutta and eighty-three cases and fifty-six deaths in Bengal. The *Kybfels* got a clean bill of health at Calcutta, but a suspicious death occurred on the voyage.

"Brooklyn Medical Journal"—In its December issue this journal contains the announcement that with the close of the year 1906 its publication will cease. During the twenty years of its existence the journal has been prominent in reflecting the medical activity of the Borough of Brooklyn, and has been the official organ of the Medical Society of the County of Kings. Its editors have been Drs. William C. Braislin, James P. Warbasse, John A. Lee, and Clarence R. Hyde.

The Craig Colony.—Dr. Wm. T. Shanahan has been promoted to the position of First Assistant Physician and Dr. Kirby Collier has been promoted to the position of Second Assistant Physician in this institution, both promotions to date from January 1, 1907.

Death of an Oldest Inhabitant.—On December 28 patient No. 7 of the Middletown, N. Y., State Hospital died after having been an inmate of the institution for thirty-two years. He was the oldest patient of the hospital, having been the seventh to be admitted after the institution was opened.

The Chicago Home for the Friendless, by the will of Otto Young, will receive $20,000, and the Chicago Home for Incurables $400,000.

Donation to Cancer Fund.—On the occasion of their golden wedding Mr. and Mrs. Henry Louis Bischoffesheim of London distributed $500,000 to various charities, and of this sum the Imperial Cancer Research Fund received $200,000.

The Scranton Typhoid Epidemic.—From thirty to forty new cases of typhoid fever daily have been reported from Scranton, and on December 26 the total for the month was 751 cases, and for the epidemic 791. The hospitals are all overcrowded, and even their emergency accommodations are taxed to the utmost. The epidemic is believed to have originated from water from the Elmhurst dam.

Tuberculosis Exhibition.—The Committee on the Prevention of Tuberculosis of the Charity Organization Society will hold a tuberculosis exhibition at the Twenty-third street branch of the Young Men's Christian Association, 215 West Twenty-third Street, beginning Wednesday, January 2, and lasting until January 10. Numerous public lectures, illustrated with stereopticon views, are to be given by various speakers. The exhibition will be open all day, and admission will be free.

Washington Heights Hospital.—The entire medical board of this institution has resigned, but four of its members have been reinstated by the Board of Directors. These are Drs. Nathan, Frisner, Sable, and Clarence E. Sichel. Early in January the hospital will be removed to 165th street, near Broadway.

Beth Israel Hospital.—At the seventeenth annual meeting of this organization it was announced that $76,500 had been contributed toward the erection of the new hospital building. According to the report there were during the year 1,353 free patients treated out of a total of 2,377. More than 1,000 applicants had to be refused because of lack of facilities. There were 72,712 consultations and 81,841 prescriptions given. The actual hospital expenses were $83,492 and the total expenses $114,000. This included $30,000 for improvements.

Western Reserve University of Cleveland.—President Charles F. Thwing, of this University, announces that a chair of experimental medicine has been established in the medical school, and that Professor George N. Stewart of the University of Chicago, has been appointed to the professorship. The funds for this purpose and for the endowment of a laboratory have been provided by two gifts of $100,000 each, made by Mr. H. M. Hanna and Col. Oliver H. Payne.

American Association for the Advancement of Science.—At the closing session of this association, held in New York, December 31, the following officers were elected for the coming year: *President*, E. L. Nichols, professor of physics at Cornell University; *General Secretary*, F. W. McNair, president of the Michigan School of Mines; *Secretary of the Council*, Prof. William Harper Davis, of Lehigh University. Besides these ten vice-presidents were elected. A banquet was given the retiring president, Prof. W. H. Welsh, at the University Club by the members of the executive council.

Comanche County (Okla.) Medical Society.—This society has elected the following officers for the ensuing year: *President*, Dr. A. N. Campbell; *Vice-President*, Dr. M. A. Jones; *Secretary and Treasurer*, Dr. J. L. Lewis.

Dickinson and Iron Counties (Mich.) Medical Society.—Officers for this society have been elected as follows: *President*, Dr. F. Larson, Crystal Falls; *Vice-President*, Dr. Libby, Iron River;

Secretary and Treasurer, Dr. H. Sethney, Crystal Falls.

Jefferson County (Tex.) Medical Society.—At the annual meeting of this society, held at Beaumont on December 18, the following officers were elected: *President*, Dr. H. A. Barr; *Vice-President*, Dr. A. A. Bailey; *Secretary and Treasurer*, Dr. R. R. Sullivan.

Farmington (N. H.) Medical Society.—The physicians of this town and vicinity have organized under the name of the Farmington Medical Society and have elected the following officers: *President*, Dr. G. W. Ellison; *Vice-President*, Dr. R. J. P. Goodwin; *Secretary*, Dr. P. H. Greeley; *Treasurer*, Dr. H. P. Wheatley.

Neosho (Kan.) County Medical Society.—Officers for this society for the following year have been elected as follows: *President*, Dr. J. C. Lardner; *Vice-President*, Dr. M. A. Duncan; *Secretary*, Dr. W. K. Mathis; *Treasurer*, Dr. A. M. Davis.

Kent County (Mich.) Medical Society.—At its recent annual meeting, held at Grand Rapids, the following officers were elected by this society: *President*, Dr. S. L. Rozema; *Vice-President*, Dr. William Fuller; *Secretary*, Dr. H. Alden Williams; *Treasurer*, Dr. F. C. Warnshuis.

Kankakee (Ill.) Physicians' Club.—At a regular meeting of this club the following officers were elected: *President*, Dr. G. H. Lee; *Vice-President*, Dr. T. E. Caron; *Secretary-Treasurer*, Dr. C. K. Smith.

Obituary Notes.—Dr. Walter Judson of New Haven died on December 25, at the age of eighty-seven years. He had been visiting a patient, but slipped on the pavement and fell, and shortly afterward died of cerebral hemorrhage. He was born in Bristol, Conn., and was graduated from Yale in the class of 1864. He received his medical degree from the College of Physicians and Surgeons in this city.

Dr. Timothy H. Bishop of New Haven, died of pneumonia on December 26, at the age of seventy years. He was graduated from Yale in 1860, and had practised in New Haven for many years. He was a member of numerous historical and geneological societies.

Dr. Frank E. Beckwith of New Haven died of apoplexy on December 27, at the age of fifty-nine years. Dr. Beckwith was born in Norwich, Conn., and was graduated from the College of Physicians and Surgeons in 1871. He practised in this city until 1880, and was then appointed to the chair of obstetrics at the Yale Medical School. In 1885 he relinquished this position and devoted himself exclusively to private practice.

Dr. Francis E. Doughty of this city died of pneumonia on December 28, at the age of fifty-nine years. He was born in Albany and was graduated from the College of Physicians and Surgeons in the class of 1869. He was consulting surgeon to the Hahnemann, Flower, and Laura Franklin Hospitals.

Dr. L. W. Babcock of Wadena, Minn., died on December 25, at the age of sixty-six years. He was Speaker of the Minnesota House in 1903.

Dr. William Steward of this city died on December 24 in the Brooklyn Hospital. He was born in England and received his medical education in the Bellevue Hospital Medical School. He was actively interested in medical missionary work.

Dr. John C. Sanders of Cleveland, O., died at the age of eighty-two years, on December 23, as the result of injuries due to a fall on an icy pavement. In 1882 and 1883 he served as president of the American Institute of Homeopathy and had practised for fifty years in Cleveland.

Dr. J. W. Mount of Kansas City died on December 18 at the age of sixty-eight years. He had practised in Kansas City during the past twenty years.

Dr. William H. Hipp of Chicago died on December 19 of pneumonia. He was born at Berrien Springs, Mich., in 1864, and was graduated from the Bennet Medical College in 1885. He had been surgeon at the Cook County and Chicago Hospitals, and was a member of the State Board of Health.

Dr. John MacDonald of Chatham, N. B., died on December 18 after a lingering illness. He was born at Mount Stewart, P. E. I., fifty-six years ago, and was a graduate of St. Dunstan's College, Charlottetown, and the Jefferson Medical College of Philadelphia. He had practised in Chatham for about twenty-five years.

Dr. A. J. Dooley of Marion, Ind., died on December 18, at the age of thirty-four years. He was a graduate of the Rush Medical College in the class of 1897, and had practised in Marion ever since.

Dr. William H. Huger of Charleston, S. C., died on December 17 at the age of eighty-one years. He was graduated from the South Carolina College in 1846 and a few years later from the Medical College of South Carolina. He completed his medical education in Paris and then returned to Charleston, where he had practised ever since. Two years ago he completed a half century of service to the Charleston Orphan House and was presented with a silver bowl in commemoration of this event.

Dr. Clark Leavitt of Danville, Ill., died on December 19 after a long illness. Dr. Leavitt was born in 1833 and received his medical education at the University of Ann Arbor, from which he was graduated in 1861. After practising in Newport, Ind., for sixteen years, he removed to Danville, where he had practised ever since.

THE FIFTH HARVEY SOCIETY LECTURE.

The fifth lecture in the present series given by the Harvey Society was delivered at the Academy of Medicine on Saturday evening, December 15. The speaker, Dr. S. J. Meltzer of this city, chose for his topic "The Factors of Safety in Animal Structure and Animal Economy." He began by defining what was meant by factor of safety, and illustrated the use of the term in the construction of buildings, bridges, and machinery. All of these, as was well known, were constructed of more than sufficient strength to bear even the extraordinary strains to which they might be subjected. Such construction, however, was not economical.

To what extent was the animal body provided with factors of safety? The speaker said that although there were quite a number of facts bearing on this point, no one, so far as he was aware, had ever approached the subject from just that point of view. Just this, however, was really an advantage, for then one might feel sure that the facts were without prejudice. We all knew that nature, above all, was economical; factors of safety, as already pointed out, were not economical. Was the animal body constructed to work with the greatest economy, or were factors of safety provided?

Safety provided for by excess of structure was well exemplified in the bilateral organs. If one of the kidneys were excluded the loss was compensated by the other. The increased work was taken up immediately without any noticeable impairment. It was possible to remove as much as two-thirds of

each kidney without ill effect. The normal secretion of the kidney, it was pointed out, was not nearly the maximal capacity; the margin was at least twofold. The lungs were organs of supply and elimination. In spite of their important work, life was possible with the major portion of the lung tissue consolidated or destroyed. In pneumonia and empyema death was due not so much to mechanical interference with respiration as to toxemia. Halle had completely removed the right lung of rabbits —more than half of the respiratory organs—without deleterious effects and without altering the respiratory quotient. In the lungs, then, there was a large factor of safety in the amount of lung tissue provided. This was not really excessive when we considered the importance of this function. The speaker next cited the tissues of the generative organs as another example of quantity in excess of that apparently required. Small pieces of the organs left after surgical removal were capable of functionating normally. It had even been recorded that pregnancy had occurred after supposed double ovariectomy. These cases had been explained by assuming that a tiny piece of ovarian tissue had been left behind. In operations on the young, if fragments of the organs were left behind after removal, the sexual character was normally developed. This had been well shown by experimental work on cocks.

In the thyroid gland the removal of four-fifths or five-sixths was not followed by the symptoms produced by complete removal of the organ, symptoms of cretinism, etc. In other words, one-fifth or one-sixth of this gland, or a single small accessory thyroid, sufficed to carry on the functions of the larger structure. Complete removal of the adrenal glands was followed by death in from thirty-six to forty-eight hours. If, however, only a tenth of a large gland or a small accessory one were left the functions were normally maintained. Here the margin of excess capacity was at least ten times the normal requirement.

Going on next to the nervous system the lecturer pointed out that the brain did not follow the rules just indicated. This structure should be regarded rather as a number of isolated functionating organs than as a single bilateral organ. It was not really bilateral; the right motor area, for example, controlled the muscles of the left side. However, this division did not hold for the centers of muscles of respiration, of deglutition, etc. Thus if only one of the vagi were cut the normal respiratory rhythm was maintained. If both were severed the inhibition of the rate of the heart beat was abolished, while the respiratory muscles were paralyzed. One vagus, therefore, was sufficient so far as functional capacity was concerned, yet two vagi were provided.

The same provision for safety was found in the unsymmetrical organs. Complete removal of the pancreas resulted in glykemia and glycosuria. If but a tenth of the organ were left behind, however, the animal would be completely protected. Removal of half of the liver did not interfere with its many important functions; in fact, as much as three-fourths could be removed without special ill effects. The stomach could be completely excised, or as much as 70 to 80 per cent. of the small intestine removed without necessarily interfering with normal health. It had recently been suggested that functionally the colon was almost useless to man.

A similar abundant provision was found in the products of tissue activity. Thus in the digestive enzymes we had pepsin, trypsin, and Cohnheim's erepsin for the digestion of proteids, ptyalin and amylopsin for carbohydrates, steapsin and gastric lipase for fats. The last mentioned enzymes were also present in the liver and bile. The amount of the enzymes secreted was also far above that really required, and it was known that most of them could be excluded, individually, from the digestive tract without noticeable effect on nutrition.

It was interesting, the speaker said, to see how well nature safeguarded the reproductive functions. For the sexual functions of a woman about 500 ova were all that could possibly be used. At birth the ovary of a female child contained perhaps a hundred thousand ova, and even at the time of puberty there were still some thirty to forty thousand. Similarly, in the male, there is an enormous production of spermatozoa. It had been calculated that an average ejaculation contained several million spermatozoa. Only by providing this enormous excess was nature certain to overcome the many obstacles in the passage of the spermatozoon to the ovum, and so provide for a continuation of the species.

It was strange, at first sight, to see how scantily in this respect certain vital functions were provided for. This was particularly exemplified in the medulla, where slight mechanical injury caused serious damage. On the other hand few of the organs were so well protected mechanically from external violence, and few possessed such an abundant vascular supply.

Factors of safety were also provided in the circulation. There was, for example, more blood in the body than was actually required. One-half of it could be withdrawn without serious consequences, and the loss was rapidly and easily replaced. The relation of the volume of the blood to that of the vessels, and the fact that the blood can easily be thrown into the splanchnic areas, the skin, or the working muscles, were also factors of safety. So also was the existence of collateral vessels which might be called upon in an emergency. The heart possessed a superabundance of force and volume.

The speaker then called attention to another method of furnishing a margin of safety, namely, by providing multiple and parallel mechanisms. The principle was well exemplified in the several vasomotor centers, *e.g.* the main one in the well-guarded medulla, and subordinate and compensating centers in the dorsal cord, in the sympathetic ganglia, and even in the vascular wall itself. Central as well as local mechanisms were also provided for the heart, the intestines, and the uterus. In the pancreatic secretion and in the formation of milk we had examples of chemical-stimulating mechanisms supplemented by nerve control. Pancreatic and gastric proteolysis, and water elimination by the sweat glands, kidneys, and mucosa were examples of coexisting mechanisms. The distribution of work among several groups of tissues so that some act as reserve forces was also a factor of safety. Self-repair, regeneration, hypertrophy were factors of safety peculiar to living forms, and these processes tended not only to replace or compensate injured and used tissue material, but to maintain and restore margins for safety beyond present or normal requirements.

Did principles of economy or those of superabundance prevail in nutrition? There was a reserve of oxygen, and glycogen and fat were saved for unforeseen emergencies. A storing up of proteid food did not occur except in convalescence, in the spawning of fish, etc. Dr. Meltzer believed that a diet containing more available proteid than that advocated by Chittenden was desirable, for this would be in accord with the existing principles of

maintaining a large margin of safety in the animal body. Chittenden's *a priori* assumption that the smallest amount of proteid on which the animal body could regularly maintain itself would be the most desirable, was, Dr. Meltzer said, quite unwarranted and seemingly opposed to the principles above enunciated.

Correspondence.

THE SCIENTIFIC CRITERION OF A MALIGNANT TUMOR.

To the Editor of the Medical Record:

Sir:—In view of the publication by Dr. Clarence C. Rice (Medical Record, November 24, 1906) of a case of laryngeal cancer, treated by injections of pancreatic ferments, the time seems opportune for a few words upon the matter looked at from the standpoint of the scientific investigator. Dr. Rice in his paper only states that it was "supposed to be carcinomatous," and I am given to understand that this point and the fact that no pathological examination was ever made before treatment (rightly in my scientific opinion) have been seized upon by the critics. What do they suppose it might have been? No number of injections of pancreatic ferments would ever have the slightest effects in diminishing the size of a benign neoplasm, for such a thing is composed of normal or somatic tissues, not of "imitation tissues," like a malignant tumor. The true nature of a malignant tumor is a question to be determined by scientific methods, and at this juncture it is fitting that the scientific investigator should place himself in front of the physician, announcing his determination to defend the latter against all attacks. Well, the scientific investigator steps confidently into the arena, the sword of science is now held ready to strike; it has no scabbard to throw away, its point is sharp, its edge keen. The hand grasping it and holding it aloft knows how to use it!

During the past few weeks (November, 1906) the pages of a medical journal in Great Britain contained several letters upon that neoplasm of the mouse, commonly known as "The Jensen Mouse-Tumor." The controversy, originally started by Mr. W. Roger Williams, F.R.C.S., raged at first around two points: (1) its nature and whether it was or was not a true cancer, and (2) the justification of applying to it the name of its finder, and thus of naming it "The Jensen Mouse-Tumor." In the sequel, apparently, the first point was lost sight of, and the original writer and Mr. Henry Morris, President of the Royal College of Surgeons, narrowed the discussion to the second and more trivial point as to whether Moran's or Jensen's name should be applied to it. Looked at from the strictly scientific point of view, it should not be called by either name. Like the chameleon, "the creature's neither th' one nor t'other!" In anatomy, at all events, that system of nomenclature has been abolished.

But the original question, raised by Mr. W. Roger Williams, touches much graver issues. He denies that this tumor is a cancer at all! If this conclusion be right, it is not very flattering to the scientific acumen of any one of all the investigators of cancer, who have used or still employ this neoplasm in their work. In the *Centralblatt für allgemeine Pathologie* (Vol. 17, p. 870) the pathologist, F. Henke, now of Konigsberg, states the results of his critical examinations of this and other now well-known mouse-tumors. The paper was read before the German Pathological Society at its meeting in Stuttgart on September 18, 1906. Obviously, Mr. W. R. Williams was not present, for Henke's verdict met with no contradiction! Briefly, his conclusion was that the Jensen mouse-tumor, like the others examined, was a true cancer, and analogous to a human carcinoma.

We have here the diametrically opposed views of two experienced pathologists. My concern is not with the conclusion arrived at by Henke, but with that advanced by Mr. W. Roger Williams. One might, indeed, surmise that there was no pathological criterion for a cancer. What is the criterion for the statement that this mouse-tumor is not a cancer? Scientific reasons are not contained in the original report of his lecture in London or in his letters to the medical papers. The criterion for his judgment is simply his authority. The Jensen mouse tumor is not a cancer, because—he says it is not! As he stated in *The Lancet* of 1904 (December 3, p. 1613) regarding other aspects of the problems of cancer, he is satisfied, he has convinced himself, he has stated his conviction, that the Jensen neoplasm is *not* a cancer. "Damit Punktum!" as the Germans say.

Is this or is it not a scientific question? Are or are not the pages of the chief medical newspapers in Great Britain open (unpaid) to the pens of all scientific men? I am well aware that they are not open freely to mine! Matters have reached a climax, when scientific questions are disposed of in this arbitrary fashion. It is the kind of "argument" which authority always employs. "I know far more about the thing than you do!" But—it is not "science." One is reminded of some of the things—wonderful things they were—contained in a leader in *The Lancet* of February 4, 1905, and written by one who did not understand the difference between a scientific fact and a conjecture. "In short, Dr. Beard passes from one conjecture to another. He begins by views on embryology, which on his own showing are not generally accepted by embryologists. He goes on to express opinions on the histology and the pathology of cancer which are not in accordance with known truths and launches into the realm of therapeutics with assertions about the action of ferments which would inevitably cause the rejection of a candidate in physiology." The lack of commas in these passages is quite characteristic of the writings, up to date, of him who wrote these highly complimentary things. Since that time he has himself adopted, *without acknowledgment*, two of the "opinions," *i.e.* conclusions, expressed by me, that of the "mimicry" of the tumors, and that of the identity of cancer and sarcoma. As to the rejection of a candidate in physiology, perhaps he is not aware that in the year of my birth, 1858, it was held by physicians and physiologists that the sweetbread, or pancreas gland, had no *digestive functions*, and both Corvisart and Kühne, who were the first to describe the functions we now assign to it, also ran this serious danger of rejection, but as they had no intentions of being examined in physiology, they did not mind running the risk. It is nothing less than a gross insult to the intelligence of a scientific man of nearly twenty-five years' standing to say such things regarding his work. He is not a paid official researcher. As if, too, the "generally accepted" in science were of necessity true! From 1870 to 1900 a somatic origin of germ-cells, based on the researches of Waldeyer, was "generally accepted," but in 1902 Waldeyer, like the great man of science that he is, withdrew his researches, and thus took away all the basis of this general acceptance. The view is now without any basis in observation, *but it is still "generally accepted"* because it fits in with other human superstitions.

The writer is not a pathologist, and probably he would never have felt deeply concerned about the sayings of pathologists had they not invaded the realm of biology and embryology. The proceedings of the Stuttgart meeting are full of both biology and embryology—of a sort—biology and embryology, which only exist in the human pathological imagination. However, this writing is not intended to be a treatise on either science, based in actual observation. To come to the point at issue. What is the pathological criterion of a cancer? Now, in asking this question I have no desire to raise a storm about anaplasy, metaplasy, and all the other words, not things, ending in "plasy." Therefore, the question may be put in another form: What is the *scientific* criterion of a cancer?

There is now a pretty general agreement that a growth made up of normal tissues and containing hair, skin, teeth, and bones is a more or less reduced individual, an embryoma, a twin identical with the individual harboring it. Can any similar conclusion be reached regarding a cancer? Is it germinal in nature, as some have insisted? Where is the criterion? If it be germinal in nature, it should form eggs or sperms, or both, but it never does so. Unless it be due to a parasitic organism, as it is neither somatic nor germinal, it can only be one other thing. For of the life-cycle there only remains trophoblast. *Cancer is an irresponsible trophoblast.* If this be true, where and what is the criterion? The criterion is, that if it be trophoblast it cannot live in the presence of the secretion of the pancreas gland, especially in that of the ferment or enzyme, trypsin. The chemical test (*exact science*) of cancer is its behavior, when living, toward injections of extracts of real, *not imaginary*, pancreatic ferments.

As these words are written one seems to hear certain surgeons and official researchers remark, "We have tried trypsin, and it has no action upon cancer. It is useless." Softly! Wait a little! As an Italian physician said: "I have given any number of injections of trypsin in a case of cancer of the tongue, and the thing calmly pursued its 'parabola,' its course." The reply made to this gentleman in choice (?) Italian was: "Yes, and nearly all the time you were acting in opposition to my scientific advice, while a similar cancer of the tongue further south in your own country was gradually healing." I will not invoke the microscopical evidences, but will instead refer to the numerous human patients, who have been, or are being, treated with hypodermal injections of pancreatic ferments, which are guaranteed to be what is printed of them on the labels of the boxes. From many of these cases I have

noted, and some physicians have agreed, that it is an easy thing to kill every cell of an ordinary unoperated cancer, even a matter of a few weeks, but not at all easy to remove the dead tumor. In the presence of sufficient trypsin, and this is not a large amount, no cell of an ordinary unoperated cancer can live. Where is the proof? Recently I was informed of two cures in New York, one a cancer of the larynx, the other a cancer of the tongue. The former has been reported, and possibly by this time the latter also. "None in Great Britain?" Not yet, for most of them are like the one which ran its parabola in Italy, and for the same reason, because the wrong stuff was employed. "Two only, then." *Two human lives saved!* Add to these some others who will be saved, as well as a certain lady in South Italy. She had suffered from the torments of "inoperable" cancer of the tongue since January, 1903. She is the mother of a large family of children, all living and healthy. Early in March, 1903, the lady was examined, cancer of the tongue diagnosed, operation at first advised, but afterwards declined, by Dr. Guiseppe Caccioppoli, Professor of Operative Medicine and of Clinical Surgery in the Regius University of Naples, Surgeon to the Hospitals for Incurables and Loreto, and she was also examined and the like diagnosis given by Dr. Cavaliere De Giacomo Annibale, Professor of Operative Surgery in the Regius University of Naples. The pancreatic treatment (injectio trypsini and injectio amylopsini, Fairchild) was undertaken under the scientific directions given by me from time to time, by Gennaro Cavaliere Guarracino, Physician and Surgeon to the Provincial Hospitals for the Insane of Naples, and to the Hospital of St. Eligio, and by Professor Michele Manzo, Surgeon to the Pilgrims' Hospital. In the opinion of these two latter the last of the cancer is gone, but she has lost most of her tongue, which the two eminent surgeons hesitated to try to remove. By the end of September the last remains of the cancer came away. The chief physician wrote confirming this, and added: "This is a wonderful result, and I declare that it seems to me the most considerable fact which our science has ever obtained." Long ago he promised me his full notes with a view to their publication in English. *That is the scientific criterion of a cancer—the chemical test!*

Certain British surgeons and others have obtained only negative results. Why have they not reported them? The reasons for their failures would then have been apparent. Some of them tell patients that they have tried trypsin and found it "useless in cases of cancer." How do they know that they were using trypsin? Have they ever tested, as a chemist must do his reagents, the injection as to its ferment powers? Are they sure they were not using something little, if any, better than glycerin and water? As well might a brewer assert, "I have tried yeast, and it won't act upon the wort of my intended brew of ale. It is quite useless for brewing beer." I and others have tested all the injections advertised, and I have seen the results of assays. The finds are astounding. My published scientific work lays down that the injection should be "the secretion of that important digestive gland, the pancreas," that is to say, be prepared from the fresh gland direct, that this injection should contain all the ferments, that, generally speaking, it should be given for not a very great number of weeks, and be followed by injections of amylopsin, the diastatic ferment of pancreas gland, to remove all the bad symptoms of "eclampsia"—a thing it has done again and again, and never failed.

Two persons claimed to have discovered that "the proteolytic ferment of the pancreas, and not the diastatic" converted glycogen or animal starch, and acting logically on this "discovery," they put out, the one selling and the other using, an injection of trypsin so pure that it had no action upon glycogen or animal starch! When in 1905 I wrote of the secretion of the pancreas gland, do those who have failed imagine that I really meant the dispensing in a chemist's back shop of somebody's trypsin in powder, just as though it were so much blue pill? There is only one set of preparations now on the market which satisfies the above requirements. Before they put out their injections the makers of this preparation, and they alone of all the makers, asked my opinion of their procedure. All their products are stable and aseptic. There are in my house, as I write, ampoules of injection, which, if taken out of the thrice-sealed box, would be found to be—so much glycerin and water!

Those surgeons who have described the treatment as "useless" have actually never employed it. They are really in the same logical "scientific" position as one of their colleagues in Chicago, Dr. Nicholas Senn, who frankly condemns it as "a failure," while admitting that he has never tried it! (*Chicago Tribune*, August 5, 1906.) He might just as well declare that yeast will not ferment the wort of beer, and state at the same time that he has never made an experiment with yeast to test its supposed powers in this direction! Surely this is *not* a sample of science, "made in Chicago!"

The criterion of a cancer, the exact chemical test, is not, let me insist, its behavior toward a glycerin and water solution of ferments in powder, but toward an extract of fresh pancreas gland, scientifically prepared. Unless "boiled" or otherwise spoiled, such an injection can never be described as "useless."

All this is not merely a criterion, but it is *the criterion*, and no other is possible. Therefore, one does not need to ask the surgeon named in the opening passages of this writing to produce a criterion, for he has none, any more than Dr. Nicholas Senn has, except in each case his "authority." Science, sad to say, does not recognize this as valid. By the chemical test the mouse-tumor, known as Jensen's, is a malignant neoplasm, a cancer, for it is killed and its albumin pulled down by the ferment, trypsin. That is *a fact* of comparative physiological chemistry, *an exact science!* It is not open to the contradictions of any surgeons living, least of all to those of Mr. W. Roger Williams and Dr. Nicholas Senn.

In the same way the "supposed cancer" treated by Dr. Rice according to the scientific method of treatment revealed by my work, is now proved to have been a true malignant neoplasm, for the chemical test has demonstrated its nature. It is no argument to the contrary to assert that other cases failed to yield. Chemical experiments do not always succeed at the first attempt. I have known the two great men of science, who taught me chemistry, Sir Henry Roscoe and the late Professor C. F. W. Krukenberg, to fail often, but in the end they *always* succeeded. In cases of failure, some of the conditions needed for the success of the experiment may be absent.

EDINBURGH. JOHN BEARD, D.Sc.

OUR LONDON LETTER.

From Our Special Correspondent.

BRADSHAW LECTURE — EOSINOPHILE PLEURITIS — INFECTIVE TUMORS OF DOGS—CHOREA—NOMENCLATURE OF DISEASES—ELECTION TO GENERAL MEDICAL COUNCIL—LEAGUE OF MERCY—ACTION AGAINST SURGEONS—OBITUARY.

LONDON, December 14, 1906.

THE "Bradshaw Lecture" was delivered on Wednesday at the Royal College of Surgeons by Mr. Edmund Owen, V.P., who took for his subject "Cancer: Its Treatment by Modern Methods." He laid down emphatically that in the present state of our knowledge the only way of dealing with it is by prompt and thorough removal. As soon as a surgeon has made up his mind that a growth is malignant and could be removed, no time should be lost. No surgeon, from a desire to lessen mental distress or allay the dread of his patient, should be led to consent to any dallying with any problematical treatment. Surgery could not go in advance of facts, and at present she could not promise cure, whether by cutting operation, by *x*-ray, by Finsen's light, or by any drug. Treatment was not the same thing as cure. The most effectual treatment of cancer, however small, was the knife. It was owing to the freedom and thoroughness of operations that great advances had recently been made. Our forefathers would have been astonished at the thoroughness of modern methods of operating. To them the presence of enlarged glands was almost a bar to interference. But men and women have now no greater powers of resistance than fifty or a hundred years ago. The triumphs of modern surgery, to put it figuratively, might be ascribed to Lister having shown the virtue that lay in soap and water and the nailbrush. In the world of therapeutics there were dark tracts and continents which could only be discovered by men of imagination and energy. When the happy discovery should be made it would not be by columns of figures and percentage calculations, which like pancakes must be served quickly or be spoiled. Percentages might be of value worked out by an actuary in a life office, but were hardly the same when compiled by a surgeon to set forth the result of his treatment, for two patients with a disease called by the same name were not of the same clinical value, nor were twenty nor two hundred. The sooner surgeons discarded the activarial method of setting forth progress in connection with cancer, the better. Speaking of the excellent work of the Imperial Cancer Fund, the lecturer referred to the patient, hopeful work of the Director, Dr. Bashford, and his staff. He regretted that their researches were running the risk of being hampered by the limited space in which they worked and the inadequate skilled assistance the fund could afford. It was likely that experimentation on mice would be mentioned at a meeting of the Vivisection Commission, and some misinformed and therefore apprehensive witness, or some little Englander of the scientific world might be asking himself what profit can come from such

experimentation, claiming that mice are of more value than many human beings who are or may be the subjects of cancer, and demanding that further experimentation—the only means by which a cure is likely to be discovered—shall forthwith cease. As to the precise value of the work it was too early to speak; but seeing into whose care the direction of the laboratories had been placed the result might be awaited in full assurance that no cruelty would be allowed to dishonor the research.

Regretting that it was not possible to call attention to any method of treatment which could honestly and confidently promise a cure, as surgery at present knew of none, Mr. Owen added that nevertheless the surgeon would do a great deal for his patient; might be able even to set him free from his disease. But the word "cure," if ever used, should at present be uttered only in a whisper as it were; though perhaps later it might be proclaimed from the housetops. Disheartening as it was to be obliged to confess that at present no certain cure had been discovered, and that, so far as known, the searchers were not obviously on the track of one, yet the public might be assured that if ever a cure should be found those who are strenuously working at the subject would be in immediate possession of it. If the exact position of affairs could be placed before the public it might induce more people to give financial support to the National Fund for the promotion of cancer research and might also prevent some who fear they are attacked from falling into the hands of so-called "cancer-curers."

At the Pathological Society, on the 4th inst., Drs. Perkins and Dudgeon contributed an account of a case of eosinophile pleurisy. A girl of twenty-two attacked with bronchitis and acute pleurisy in a few days developed acute pericarditis, and, twenty-two days after admission to hospital, endocarditis. By aspiration nine ounces of yellow fluid were removed from the pleural sac. Cytological examination showed 34.6 per cent. of coarsely granular polymorphonuclear eosinophiles in a count of 500 cells, 10 per cent. polyneutrophiles, 23 per cent. small lymphocytes, 32.4 per cent. epithelial cells. Examination of the blood at the same time gave leucopenia, slight anemia, eosinophilia, and increase of mononuclear cells. Staphylococcus aureus, and albus were cultivated from the sputum. A blood examination six weeks later showed absence of eosinophiles, a normal number of leucocytes, and a normal differential count. Autopsy showed pleural adhesions on both sides, adhesions, pericarditis, and vegetations on the mitral and aortic valves. No sign of tuberculosis in any part of the body. No positive information was obtained as to the source of infection, and the authors suggested it might possibly have been influenzal.

Dr. Seligmann exhibited a number of infective venereal tumors of dogs from British New Guinea. It could not be said the dogs were of pure native breed, as there had been too much crossing with those introduced, but the natives said the disease was known before white men came there. The tumors were considered as most probably identical with those described by Bellingham Smith and Washbourne. The position, microscopic appearances, and transmission were the same. An important point was that in one instance metastasis had occurred to the testicles, both of which were completely replaced by new growth which, however, had not penetrated the tunica albuginea. Mr. Shattock considered this last point particularly interesting, the testicles showing real metastasis and not extension by continuity with the prepuce. The tumors presented perfect histological pictures of large, round-celled sarcoma with no signs of inflammation. That they were contagious did not prove them not malignant. Contagiousness and infectivity were only relative terms. The tumors should be classed with sarcomata, and it might be that the investigation of such ambiguous forms or connecting links would eventually lead to a knowledge of the pathogenesis of cancer.

At the Therapeutical Society Dr. Cecil Wall read a paper on the value of certain drugs in chorea. The effects of different methods of treatment were compared, the criterion adopted being the number of weeks before the choreic movements ceased. Under arsenic it appeared that the duration was the same as under no treatment. Under sodium salicylate the result was very little better. Under acetosalicylic acid the duration was much less. In half the cures the movements ceased in less than a month; in 92 per cent. in less than two months. Under arsenic the movements continued for over two months in 62 per cent. of the cases. Dr. Duncan said that in the North of England they obtained excellent results with arsenic, and he suggested that probably in the south there was some difference in the disease or else in the temperament of the children.

Dr. A. F. Hertz then read an elaborate paper on the importance of a salt-free diet in the treatment of edema and serous effusions.

The third revision of the fourth edition of "The Nomenclature of Diseases" is being issued this week. The work may be considered official, as its primary use is for the purposes of the registration of diseases, and to this end the elaborate index is of the greatest value. It is to be feared indeed that many practitioners confine their attention to this, consulting the work only as the necessity of certifying a death may recur. But the book is full of information in a condensed form and represents no small amount of the most recent advances in our views. The preparation of the first edition dates back to 1859, the second to 1880, the third to 1892. This fourth was begun in 1902. At the meeting of the Royal College of Physicians, Sir William Church presiding, in July of that year, it was determined to begin the decennial revision, to be issued in 1906, and here it is before the year has expired. All along it has been the production of a committee appointed by the college, representing not only its own fellows but the public services, the universities, and most medical authorities. There is also a very strong "subcommittee on classification" and twenty-three other subcommittees (worthy of two persons) for the revision of the classification of local diseases. The Latin, French, and German translations have engaged three separate scholars. Mr. Shattock, the Latin reviser, has adopted a plan deserving of the highest commendation, selecting as far as possible Latin equivalents which would be readily understood should the language again become an international medium of communication. Moreover, he has not followed the absurd plan of Latinizing proper names, but treats them as indeclinable—though when a Latinized name has been established he sometimes admits it as a synonym. A memorandum by the classification committee reminds us that the large, heterogeneous section, headed "General Diseases" in the third edition, has been broken up into the following groups: (1) Infective diseases, (2) intoxications, (3) general diseases not included in the two preceding groups, and (4) certain morbid conditions incident to various parts. These embrace conditions which do not necessarily affect the whole organism, but which it is desirable for registration purposes to return under a general rather than a local heading. They are Malformations, New Growths, Cysts, Effects of Injuries, of Parasites, of Poisons, and of Foreign Bodies.

An action against two surgeons at Cardiff for negligence was tried last year at the local assizes, and the jury could not agree. A second trial was wanted and held last week in the high court, and the jury, after three or four times reporting that they could not agree, at last gave a verdict to the plaintiff with £100 damages instead of £2,000 asked for. The case was one of a bicycle accident causing a dislocation of the humerus, complicated with extensive bruising and swelling, concealing at first a fracture of the surgical neck of the humerus. This was found with Roentgen rays, but the danger of gangrene prevented active manipulation, and a pad in the axilla, and bandaging the arm to the side, was considered at the consultation the best course. The patient recovered with some stiffness of the shoulder, for which with a patient's gratitude he sought a solatium of £2,000, and Messrs. Rose, Pepper, and Balke gave evidence for him, though they were opposed by Sir F. Treves, Sir W. Bennett, and Messrs. Bowlby, Moullin, Lane, Page, Owen, and Waterhouse. An appeal is expected, so not much may be said. I hear that the costs of this trial are expected to be £6,000 or £8,000—a scandal to the law which permits it, and lawyers who profit by it. If doctors are to be subjected to these dangers in obscure cases they will have to demand an indemnity before proceeding to treat the sufferer.

As I anticipated, the British Medical Association has carried its three nominees at the election of representatives to the General Medical Council. I have nothing to say against the three gentlemen chosen except that they represent—instead of the electorate—the British Medical Association, which is always striving to get everything under its control. But the profession is to blame, for, like the grumbling ratepayer, it is too apathetic to vote. The elections have regularly declined in interest so far as votes show. The highest number polled this year is below that of unsuccessful candidates ten years ago. Another rather discreditable circumstance is the inability of so many electors to fill up the voting paper, notwithstanding most explicit directions which accompanied it. Out of the 12,828 voting papers sent in, 911 were returned through the dead-letter office, 615 voters had not signed the identification envelope, and 467 had not fastened it, 193 had not put the voting paper in the envelope, 105 sent in too late, and 35 had not properly marked their paper with the cross only.

The League of Mercy is making great progress. The annual meeting of the presidents of districts was held on Wednesday, when it was stated that probably a sum of £17,000 would this year be handed to the King's Hospital

Fund. This will bring up the total obtained by the league in its eight years of existence to £80,000.

Dr. W. T. Greene died on Monday. A highly-cultured man with a fine literary taste, he was also a naturalist of wide attainments and a special bent toward ornithology. His great work on the "Gray Parrot" is probably known to you. Smaller books on birds of various kinds fell from his ready pen, and he also wrote some stories and verses for magazines which displayed delicate and refined taste. He practised for many years in a southern suburb and later in a western quarter of London. Possessed of an attractive personality and courteous manner, his patients had the greatest confidence in his skill, and well they might, for in some branches he was more than up to date and had forestalled certain advances. He was partly educated in France, where he took the degree of Bachelor in Letters. Afterward he entered Trinity College, Dublin, and took the A.M. and M.D.

Mr. R. S. Fowler, F.R.C.S., of Bath, where for many years he had enjoyed the confidence of a wide clientele resorting to that famous spa, died on the 9th inst., aged seventy-six.

Lieut.-Col. C. R. Bartlett, R.A.M.C., died on the 5th inst., aged forty-seven, at Sierra Leone, where he was senior medical officer. He saw service in the Ashanti Expedition of 1895-6, and two years later on the North-western Frontier, India.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE CHOLERA EPIDEMIC OF 1905, ITS ORIGIN, AND THE MEANS TAKEN TO SUPPRESS IT—LEPERS IN PANAY—PERSONAL.

MANILA, November 10, 1906.

THE regular monthly meeting of the Manila Medical Society was held November 5, 1906, at 8.30 P. M. at the St. Paul's Hospital. Dr. McDill demonstrated a number of cases, among others a case of carcinoma of the uterus, and stated that his experience of the past year confirmed the earlier reports that carcinoma was not very prevalent in the Philippines. This experience is in conformity with the generally-accepted statement that carcinoma does not occur with the same frequency in tropical climates as it does in temperate ones.

The first paper of the evening was read by Dr. Victor G. Heiser, Director of Health for the Philippine Islands, entitled "The Outbreak of Cholera in the Philippines of 1905, and the Methods Used in Combating It, with Statistics to January 1, 1906." He stated that in the pandemic which ended March 8, 1904, there were 166,252 cases, with 109,461 deaths reported, but that reliable observers were of the opinion that at least one additional case occurred for each one that found its way into official records. From March, 1904, until August, 1905, there were no cases known to have occurred, but suspicious cases, which clinically resembled Asiatic cholera, were encountered from time to time. All those that came under notice were carefully autopsied and bacteriologically examined by such competent observers as Dr. Richard P. Strong, of the Bureau of Science (Bureau of Government Laboratories), with negative results. The first recognized case of the present outbreak occurred in the person of a prisoner in Bilibid Prison. The next case occurred outside the prison in the person of an American woman residing in the Walled City; the next case was that of an American residing in the Santa Cruz district, a distance of over a mile from the first case, the two persons having nothing particularly in common. At the same time suspicious cases were occurring at Fort William McKinley, which is located about seven miles up the Pasig River from Manila, with symptoms which were attributed to vino poisoning, but later definitely diagnosed as cholera.

Cases then occurred in Manila as follows: August 23, 2; August 24, 1; August 25, 3; August 26, 8; August 27, 10, and thereafter an average of about ten cases per day until about the middle of September.

The characteristic tendency of the outbreak continued during the early weeks of the scourge, *i.e.* no connection could be traced between cases; no two cases occurred in any one house, nor did any two cases occur in any one group of houses, neither did more than one case occur at a time in any one section of the city. It was pointed out that during the first two weeks of this outbreak there had actually been more cases than during the same period of the outbreak of 1902, which went to show that the disease was virulent in character, and that perhaps the principal reason that it did not reach the proportions of the epidemic of 1902 was probably due to the measures employed in suppressing it. After the presence of the disease in Manila was recognized it was learned that it had made its appearance about a week earlier in a small town called Jalajala, in Laguna Province. A review was then given of the foreign ports which had direct steamship communication with Manila. From the evidence it appeared that the disease was probably not introduced from without, but was rather a recrudescence.

Numerous tables were exhibited, showing the number of cases by age, race, nationality, occupation, etc. The table by race was the most interesting, and is given in full:

Race.	No. of cases.	No. of deaths.	Mortality.	Ratio of 1 case to.	Date of last case. 1905
Americans	11	6	54.0	399.	Oct. 10
Filipinos	220	200	90.9	802.6	Dec. 31
Chinese	4	4	100.0	5,307.5	Oct. 8
Foreigners	20	16	80.0	227.	Nov. 8

From the above table it will be seen that in proportion to their number more foreigners contracted cholera than any other group; that the Americans ranked next, but had the lowest death rate, and that the smallest number occurred among the Chinese. The mortality of 100 per cent. among the Chinese may be attributed to the very few cases that occurred among them, and that those who recovered probably escaped detection by the health authorities. This immunity among the Chinese is particularly noteworthy, because it is, in all probability, due to their firmly-established habit of drinking tea instead of water, and not eating raw vegetables.

That no further cases occurred among Americans after October 10 was probably due to the fact that as soon as they believed the disease to be actually present they observed the prophylactic measures against cholera more strictly.

In mapping out the campaign for combating the disease the work was divided into four parts: (1) The isolation of the sick in the cholera hospital, and rigid disinfection of their houses and effects; (2) protection of the city water supply, including the closing of wells located in the City of Manila; (3) the prohibition of the sale of foodstuffs likely to become contaminated, and the proper protection, by fly-screens, of the remainder; (4) the education of the public in the precautions to be observed in order to avoid the disease.

Particular stress was laid upon the fourth part of the work: the education of the public, and the success in controlling the outbreak was no doubt due to the cooperation which was given. In order to place something practical before the public sixteen simple rules for combating cholera were printed in the newspapers, and then issued in the form of a handbill in English, Spanish, Tagalog, Ilocano, Visayan, and other native dialects. The Bureau of Education sent these circulars to every teacher in the Islands, with instructions that the rules should be taught to the pupils until they could recite them, and then the pupils were requested to repeat them to their parents. The Archbishop of Manila sent the circulars to all priests, with instructions that they explain their contents to their parishioners, and the churches of other denominations did likewise. In addition, large, flaring posters with the rules printed in the different languages were displayed in the postoffices, municipal buildings, and other places throughout the Islands. Later a more advanced cholera circular was prepared for the use of teachers, and the information contained in them enabled many of the American teachers to cope successfully with cholera when it made its appearance in the towns in which they were working.

By the above means many thousands of Filipinos soon learned that they could easily avoid contracting the disease, which was an entirely different attitude from that displayed in the epidemic of 1902, when only fatalistic indifference was shown, and the only measures taken by the natives themselves consisted in nightly religious processions. This time, with the exception of a few instances, in the districts in which dense ignorance prevails, the religious processions were scarcely ever encountered.

The following conclusions were given: (1) From the evidence obtainable at this time it is impossible to state whether the cholera was reintroduced into the Philippines or whether it remained here in some latent form during the year and a half in which no cases were detected; (2) while there is no evidence to show that the disease spreads by other means than that of enteric fever, yet the rapidity with which it makes its appearance in many widely separated places puts it in an entirely different class so far as combating it successfully is concerned; (3) that maritime quarantine can practically insure the prevention of its spread by sea; (4) that it is practically impossible to make land quarantine effective, hence it is useless to engender the opposition with which it is usually met, and the time and money required by quarantine will yield much better results by the education of the public in the manner in which the disease spreads; (5) that education of the public is a much more effective measure in the suppression of

cholera than methods that depend upon force for their application. (6) In order to make a serious outbreak of cholera in the Philippines impossible it will be necessary to replace the present insanitary water supplies with artesian wells, or other sources by which infection from surface drainage cannot be effected, or to correct it by filters or other means where it occurs.

The collection of the lepers from the Island of Panay was successfully accomplished, and over three hundred were landed at the Leper Colony at Culion November 1. The officials in charge of collecting the lepers report that many persons who have heretofore been carried in the official reports as lepers were, upon microscopical examination, found not to be afflicted with the disease. If this same proportion should hold in the remaining islands of the Philippines the total number of lepers will be much less than has heretofore been thought to have been the case. Many physicians, with considerable experience in the Islands, have always maintained that there were at least ten thousand, but later observation seems to indicate that there are under four thousand. If such should actually prove to be the case it should not be so many years before the leper problem in the Philippine Islands is entirely solved.

Owing to the improved cholera conditions in Manila and vicinity, the outgoing quarantine detention which has heretofore been imposed upon outgoing vessels bound for Philippine ports was removed November 10.

Major Mearns, United States Army, who has been Chief Surgeon of the Department of Mindanao, and who was previously reported as being relieved from duty in the Philippines and proceeding to the United States by the next transport, has decided to remain some time longer in the Islands, and last week went to one of the least explored of the Philippine Islands, viz., the Island of Mindora, for the purpose of pursuing his studies as a naturalist. Mr. Horace Fletcher, the advocate of the so-called "Fletcherism," has accompanied Major Mearns on the trip.

Progress of Medical Science.

New York Medical Journal, December 22, 1906.

Paralysis of the Peroneal Nerve Following Childbirth.—After some observations on the various paralyses following childbirth, J. H. Lloyd gives the history of one case of paralysis of the peroneal or external popliteal nerve. His patient was a woman of twenty-three years, primipara and delivered by forceps. Labor was slow and the pelvic measurements were rather small throughout. The patient did well till the ninth day, when she complained of numbness and tingling in the left leg. It was found that there was paralysis limited to the muscles supplied by the peroneal nerve and of the skin supplied by the same nerve. There was also some pain about the hip and a subjective sense of numbness which the patient said involved the whole limb. The office of the muscles involved being to extend the foot and toes, the result of paralysis was to produce a very characteristic foot drop. The author finds the true explanation of involvement of this particular nerve in the anatomical relations of the lumbar and sacral plexuses. The sacral plexus receives from the lumbar a large nerve trunk called the lumbosacral cord which, passing from above downward into the true pelvis runs over the brim of the pelvis at a point where it may be readily compressed. The great sciatic nerve generally divides into its two terminal trunks just above the back of the knee joint, but it may divide anywhere between the sacral plexus and the lower third of the thigh. In case of a high division the portion of the main nerve going to form the peroneal nerve is really the lumbosacral cord. In fact the former is a continuation of the latter. Hence pressure from the child's head might easily affect the lumbosacral portion and the manifestations of such pressure would be noted in the regions supplied by the peroneal nerve.

Rhinitis in Children Including Recurrent Coryza, due to Intestinal Autointoxication.—After some remarks on the circumstances under which rhinitis occurs in children, L. Fischer describes what he calls intestinal rhinitis, a form caused by the results of indigestion. It occurs frequently in dyspeptic children with residual and intestinal stagnation. The vasomotor nerves supplying the mucosa of the nose when affected by intestinal toxins produce vasomotor disturbances, one of which is recurring coryza. Climatic conditions are naturally a minor factor in such cases. When this form occurs in children the urine invariably contains indican. The peculiar gastric and intestinal disturbance arises from overeating meat. It should be prohibited in every form as soon as any evidences of the rhinitis appear. Saline cathartics should be given, sodium phosphate being administered in sufficient quantities to produce liquid stools and the administration kept up until the urine contains indican. Water should be taken freely and fruit may be given in abundance. Milk, buttermilk, cereals and butter should be prescribed. The author regards it as irrational to use the familiar oil sprays and powders. The proper plan is to seek out the cause of the rhinitis and remove it. We must remember that rhinitis may usher in meningitis, various eruptive fevers, diphtheria, influenza, and specific disease.

Is the Supposed Efficacy of Quinine in Malarial Fever More Apparent Than Real?—A. C. Jacobson says that we know that plasmodia are driven out of the blood stream and kept out as long as sufficient quinine is administered and absorbed. Their disappearance does not mean that they have been destroyed since upon the withdrawal of the quinine they reenter the blood seeking refuge and sustenance, when hard pressed, within the erythrocytes. Hence quinine is at best only a palliative. It is not curative and is in no sense of the word a specific against malaria. It frequently happens with patients whose paroxysms have been relieved by quinine, but who have the plasmodia still remaining in their blood that on the withdrawal of the quinine they again have the paroxysms. Large doses of the remedy may even induce chill and fever. The leucocytes become paralyzed. Kidney damage may result from quinine and it is the author's opinion that the renal damage following artificially induced paroxysms of malaria is of a higher grade than that of the usual kind. Hemolysis must be favored by quinine because of the full sway of the plasmodia in the presence of leucocytic paralysis. This increased hemolysis when coincident with the renal irritation constitutes with the latter the determining factor of hemoglobinuria. The author also declares that the withholding of quinine during acute malarial attacks will expedite ultimate cure. In chronic malarial cachexia the uselessness of the remedy is generally recognized.

The Scope of the Federal Food and Drugs Act.—H. W. Wiley calls attention to the fact that under the new law there are two standards for drugs entering into interstate commerce. First, that of the U. S. Pharmacopœia and second, those placed on the drugs themselves. Drugs used for technical purposes are not included in this category. In case of alcoholic beverages when used as such, it is not necessary to state on the label the quantity of alcohol they contain, but if used as tonics, etc., the label must bear the percentage statement. A legal point comes up here concerning which the author gives no positive opinion. A physician orders wine or malt extract. The patient may buy it at a saloon where it is a beverage or at a druggist's where it is called a remedy. In either case, however, the package should theoretically contain a label stating its alcoholic percentage. The most striking feature of the act is that relating to the practical exemption from supervision as to the standards, of the so-called proprietary remedies. Amendments to the act are needed which shall impose equally rigid inspection upon such proprietery remedies. A large majority of all these preparations are made by firms whose names do not appear on the labels and who would doubtless be ashamed to have them there. As is well known, most of this class of remedies which are of any real therapeutic value are merely old-time prescriptions done up under new names or compounds of some of the newer laboratory products.

Journal of the American Medical Association, December 29, 1906.

Closing Aseptic Abdominal Wounds.—H. O. Marcy emphasizes the importance of accurate readjustment of the severed structures with aseptic buried sutures, and gives details of his methods in abdominal wounds. He considers the reduction of scar tissues to a minimum a very important factor, rejects drainage as a rule, and in dressing the wound, instead of employing dressings for absorption of exudates he uses one for their retention in the form of collodion, in which has been incorporated enough iodoform to make it light-yellowish urine color. He prefers the contractile collodion, as it contracts more firmly and holds the skin better in place. This comes off in about ten days, and he usually uses a second and third application to complete the process.

Diphtheria Bacilli in Meningitis.—J. Morrell and H. E. Wolf report a case of meningitis in a child in whom the diphtheria bacillus, identified morphologically and culturally as well as by inoculation experiments on guinea-pigs, in which it produced typical symptoms, was obtained from the cerebrospinal fluid. The bacillus was found both by antemortem spinal punc-

ture and after death. The authors remark that they have found but one case in the literature, that of Wilson and Head, in which this organism was positively identified from the central nervous system, and think that the circumstances of this case indicate that it occurs more commonly in that location than has been suspected, and that, with careful examination, it will be found more frequently.

Cerebral Palsies of Children.—W. J. Butler discusses the etiology of the spastic cerebral paralyses in children, and reports three cases. He comes to the conclusion that the causes are essentially the same as those that give rise to hemiplegia in later life, and can be stated briefly as follows: First, vascular lesions, viz.: (a) hemorrhage from venous or arterial rupture, the result of trauma occurring spontaneously in intense congestions, as in convulsions, or the spasms of whooping cough; (b) embolism from cardiac or arterial thrombi or endocarditis; (c) endarteritis and thrombosis. Second, inflammatory changes, to-wit: acute encephalitis and meningoencephalitis. Third, rarely, a tumor. In children we lack the miliary aneurysms and arteriosclerosis of later life, but the intense congestions to which they are subject in convulsive diseases are enough to compensate. While the frequency of acute inflammatory processes as a cause may be in dispute, the fact that they may be occasionally causes seems established beyond a doubt.

The Blood in Infantile Bowel Troubles.—J. C. Cook reports the results of examinations of the blood in 30 cases of bowel and other affections of infants, in which the white and red cell counts, differential counts of the white cells, and hemoglobin tests were made. The cases all presented, more or less, the clinical aspect of anemia, and included, besides the intestinal and gastric disorders which constituted the majority, cases of acute infections, chronic disorders, like scurvy, rickets, etc., and also syphilis, cretinism, and cerebral paralysis. From the results it would appear that the value of the blood count in the diagnosis of infantile anemia is comparatively slight. In those cases, however, which present the clinical aspects of anemia and show a higher or even normal blood count, there is a concentration of the blood, indicating a lack of sufficient fluid ingestion or a depletion from vomiting or diarrhea, and probably a high concentration of toxic substances. An examination of the special congenital diseases in the series, as compared with those of so-called enteritis, would suggest that the increase in the number of white cells is probably due to the specific character of absorbed toxins. If there is more than one variety of microorganism in the intestinal and other lesions, the number of white cells and the differential count will not be characteristic of either. We must look to the hemoglobin test for more definite information as regards the condition of the blood in these cases. Taken in conjunction with the red cell count it can be seen that the color index gives the more exact indication of the clinical condition.

Reduplication of Heart Sounds.—From a study of 162 cases, in which were considered all the various conditions that might affect the phenomenon, past and present morbid states, general conditions, relations to exercise, habits, etc., H. C. P. Pillsbury summarizes his results, in substance, as follows: Reduplication of heart sounds is a not uncommon symptom. The cause may be either the asynchronous contraction of the ventricles or the auricular sound. Normal persons with thin chest walls usually show reduplication. Those with thick chest walls should not. In persons who should not show reduplication it is a valuable sign. Reduplication of the first sound means that the heart is not working properly. This may be due to nervous interference, as in persons with bad habits, or it may mean that the heart is hampered by external causes, by pressure or by traction; or it may signify that the heart muscle is inefficient, either from systemic conditions or from inherent defects. Reduplication of both first and second sounds is usually only a more advanced degree of the same condition. Reduplication of the second sound alone means an alteration in the relative blood pressure of the systemic and pulmonary circulations.

Uveal Sarcoma.—Brown Pusey emphasizes the importance of making microscopic sections of the eyeball as soon as possible after its enucleation for uveal sarcoma. He reports a case in which, while the diagnosis of choroidal sarcoma was clear, the enucleated eyeball showed no macroscopic indication of external extension of the growth. Nevertheless a year and a half later a pigmented tumor was removed by exenteration of the orbit. If the sections of the eyeball had been promptly made and examined microscopically at the time of the first operation the later operation might have been avoided.

The Lancet, December 8 and 15, 1906.

Epileptic Idiocy Associated with Tuberose Sclerosis of the Brain.—The patient of Mr. G. Dobson was a boy of ten years, who died from pneumonia. The mother was of a nervous temperament, and the father had a weak chest. The whole family circle was neurotic, and some had died from pulmonary tuberculosis. Convulsions came on one year after birth. Autopsy showed the cortex cerebri covered with large white granular looking and exceedingly hard areas, occupying more especially the fronto-parietal and temporosphenoidal lobes of both hemispheres. These sclerosed areas protruded slightly above the general surface of the brain, and a few showed central umbilication. On section these areas showed considerable cortical hypertrophy; they were white in color, and the normal striations were almost absent. The cortex was badly defined, and tended to pass gradually into the underlying medulla. The transition from normal to sclerosed cortex was sharp. The vessels of the medulla, more especially in the occipital regions, were surrounded by collars of gelatinous-looking material. The lateral ventricles were not dilated. The choroid plexuses were healthy. Under the ependymal lining, which was smooth and glistening, hard, white, nodular growths were seen (varying in size from that of a pin's head to that of a small hazel nut) projecting into the ventricular cavity. These growths occurred in the groove between the caudate nucleus and the optic thalamus, and appeared to run along the course of, and to be intimately connected with, the vein of the corpus striatum. Two very tiny growths appeared on the wall of the third ventricle; the fourth ventricle was healthy. No pathological change was noticed in the cerebellum, pons, or medulla. Red hepatization of both lungs was present. No change of any interest was found in the other organs of the body. The microscope revealed the sclerotic areas as a firm, dense network of fibers quite devoid of cells. The subependymal tumors were covered by a single layer of columnar-shaped epithelial cells. Beneath this healthy ependyma was a firm, dense network of fibers, containing numerous cells. The blood vessels in this layer were fairly numerous, and were contained in dilated perivascular canals. The main growth beneath this layer was composed of coarse connective tissue, the blood-vessels of which had thick, diseased coats, the lumen being in some instances nearly obliterated. In the medulla the vessels were contained in round, wide spaces. Surrounding the vessel wall and occupying this space were found cells having long, delicate intertwining branches. The appearance suggested myxomatous degeneration of the adventitial coat.

Coincident Acute Appendicitis and Twisted Ovarian Pedicle.—J. Cahill and W. H. Bennett report the case of a girl of seventeen years suddenly seized with the usual symptoms of inflammation in the right iliac fossa. Surgical intervention was recommended but refused, and the patient went along for a week, the evidences of inflammatory deposit gradually becoming more and more evident. Abdominal incision was finally made on the seventh day from the initial symptoms. The appendix, which lay posteriorly, intimately matted to the bowel, and surrounding parts by firm adhesions was removed and showed a tight constriction at a quarter of an inch from its junction with the cecum and another towards its distal end. Between these points it was greatly distended with pus, and its wall showed all the conditions of very chronic disease. The extreme distal end was little more than a fibrous cord. No suppuration had occurred outside the appendix itself, but the intestinal coils around were greatly injected and matted by recent adhesions. Upon making the usual further examination of the abdominal cavity a dark firm mass was found occupying the upper part of the pelvis and intimately adherent to the rectum, the uterus, and the bladder. After a considerable extension of the abdominal incision this mass was with very great difficulty separated from the parts with which it was matted and was brought up to the wound. It proved to be an ovarian cyst of about the size of a cocoanut, with a very thick pedicle which had become twisted upon itself for about three quarters of a complete turn. Its walls were thin and blackish and its contents mainly decomposing blood. The pedicle was ligatured in the usual way and the cyst was removed. The operation which was necessarily prolonged, was well borne and the subsequent progress was steady and uneventful.

The Influence of an Excessive Meat Diet on the Osseous System.—The investigations made by D. C. Watson on a large number of meat-fed rats show that the bones of animals fed on an excessive meat diet present an appearance of delayed and imperfect ossification with increased vascularity and an increase in the number of red blood corpuscles. Associated with this there is in a number of cases the presence in the bony ribs of nodules of cartilage,

developed from the periosteum, with direct transformation of these cartilage cells into bone. It is noteworthy that, while the naked eye appearances of the skeleton may closely simulate those present in advanced cases of rickets in the human subject, the microscopic appearances in the epiphyseal lines of the long bones are quite distinct from those present in that disease. The author is able to add the history of the case of a child fed on raw meat juice for six weeks. Under this diet the child, originally anemic, became very pronouncedly so and steadily deteriorated. There was marked physical and mental lethargy, fretfulness on movement and a few purpuric and petechial spots. The general appearance recalled to the author the clinical picture he had frequently noted in young rats, and he formed the opinion that the state of profound anemia and physical and mental lethargy was dependent on an exhaustion of the functions of the bone marrow, thyroid gland, and other structures, consequent on the excessive meat consumption by the mother. The child died in a few days. At the post-mortem examination no trace of tuberculosis was found, nor other recognized cause of marked anemia in children. A partial post-mortem examination only was allowed and was conducted by the consultant who had charge of the case, and who kindly gave the author pieces of tissue for histological examination. The long bones were unduly soft in consistence and it is declared that the histological appearances of the radius of this child were identical in their essential features with those present in the ribs of the rats.

Appendicitis as a Cause of Intussusception.—L. Rawes gives the history of a boy three years of age admitted to hospital with an abnormal swelling and colicky pain. For three months previous he had had attacks of abdominal pain, for six weeks frequent vomiting, and occasionally some shreds of blood in the stools. Under anesthesia a reniform tumor about three inches long was discovered just above and chiefly to the left of the umbilicus. On the second day following, abdominal incision revealed the case to be one of intussusception. It was easily reduced with the exception of the last portion (about one and one-half inches), which was edematous and consisted of the appendix deeply imbedded in a fold in the wall of the cecum firmly bound down by adhesions, and this, it would appear, had formed the apex or head of the intussusceptum. On "freeing" the appendix it was found to be in a chronic inflammatory condition and to have perforated about one inch from its base. Appendicectomy was performed and the abdominal incision was closed. The boy made an uninterrupted recovery.

Cancer of the Male Breast.—The patient of G. E. Peachell was a man of fifty-eight years, admitted to hospital for melancholia, with auditory and visual hallucinations. In the left breast, below and internal to the nipple, there was a small, irregular soft lump, non-adherent to the skin or underlying tissues. Squeezing of the breast caused the exudation from the nipple of a little blood-stained fluid, but there was no glandular enlargement. The growth increased in size and was finally removed. It proved to be a typical scirrhus carcinoma invading the pectoral muscle. The man died eight months later from fatty heart and syncope, but autopsy revealed no secondary deposits.

Sprue Treated by Strawberries.—On the strength of the successful result from this plan of treatment in a case previously reported, M. F. Squire details his experience with a man of twenty-nine years with vomiting, diarrhea, and emaciation. At first the case was considered one of colitis and treatment was carried out with this end in view. Later it was realized that the condition was due to sprue. Under a milk diet his condition rapidly improved, but he was a gluttonous eater and was rebellious against dietetic restrictions. The addition of bread and butter and an egg brought about a relapse. Under various diets and on various drugs he gradually deteriorated. Then the strawberry season came around and he was allowed one pound of berries (gradually increased to three pounds) daily. This was in addition to his regular diet of milk, beeftea, bread and margarine, milk pudding, and an egg. From this time he permanently improved, and by the time the berry season was over he was able to resume ordinary diet and made an uninterrupted recovery. Concerning the action of the berries, the author advances no theories along chemical lines. He says simply that they seemed to supply something to the alimentary canal which enabled it to digest and assimilate the nourishment supplied in the diet.

Some Observations on Paralyses of the Brachial Plexus.—A careful consideration is given this subject by W. B. Warrington and R. Jones, who find the common causes of these palsies to be (excluding invasion of the nerve roots by disease of the meninges and vertebræ and pressure by new growths and aneurysms) (1) indirect violence (Erb's or Klumpke's palsy in adults, or Duchenne's if at birth) and (2) rare cases due to neuritis. They have been able to trace the records of thirty cases with eleven complete recoveries, the percentage of recoveries in traumatic cases being somewhat less. They discuss the nature of the lesions and their pathology, and they pass on to consider the symptoms of loss of function in nervous tissue indepent of cause, and finally the symptoms of complete loss of function. Under the latter heading are mentioned: Alteration in sensation, extent of the muscular paralysis, and the electrical reaction of the muscles involved. Under the heading of clinical guides to the seat of the lesion, they state as follows: (1) Pupillary paralysis results from an intravertebral lesion; (2) paralysis of the rhomboid, serratus magnus, or levator anguli scapulæ indicates a lesion internal to the extravetebral portion, situated in either the intra or intervertebral portion; (3) paralysis of the supra and infraspinati muscles indicates a lesion before the formation of the plexus proper. The white rami for the sympathetic, stimulation of which causes dilatation of the pupil and enlargement of the palpebral fissure, are derived from the first, second, and third dorsal anterior roots, and especially from the second. Hence, though damage to the first root causes characteristic oculopupillary signs, they may not be permanent; the use of cocaine may give some information as to the extent of damage, for if the pupil fails to dilate when a solution of this drug is instilled into the eye it is probable that the lesion has affected the second as well as the first root. As to prognosis unmodified by surgical treatment, they conclude (1) that the condition is a serious one, only from thirty to forty per cent terminating in useful recovery. That birth palsy of any severity less commonly results in good recovery than the corresponding condition in adults. That the cases due to a local neuritis are a good deal more favorable than when injury is the cause. (2) The pathological experience shows that the lesion is in general a severe one caused by laceration, tearing, or tension of nerve tissue, simple pressure being less common. (3) That a complete block of conduction with a corresponding graver prognosis may be diagnosed from (a) a consideration of the extent and kind of anesthesia (Head and Sherren); (b) a study of the electrical reactions, especially with the constant current; but that the presence of the full reaction of degeneration is compatible with complete recovery; and (c) attention to the extent and distribution of the muscular palsy. The order of gravity of prognosis is lesions of the spinal cord, roots, plexus proper, peripheral nerves. (4) That if spontaneous recovery happens, some signs of it are visible within seven months in adult palsy, but that in birth palsy signs of recovery may be delayed for a longer period, but are complete within a year. In birth palsies partial recovery is frequent, leaving the residual paralysis to be treated surgically. The authors hold that if the paralysis has lasted several weeks, there is little chance of complete recovery unless the elongated muscles are relaxed.

British Medical Journal, December 8 and 15, 1906.

Errors of Vision as a Factor in Motor Car Accidents.—C. Clements reports a series of cases of examination of the eyes in those who have experienced motor car collisions. He notes that both eye and nerve strain if at all excessive, as is so often the case with motorists, are always liable to emphasize an error of vision or a deficiency of muscular tone. This tendency is much increased by approaching dusk. Clements utters a word of warning about motor goggles. Goggles with bowed glasses should never be used under any circumstances, and for this reason—though theoretically they are similar to plain glass, practically they are really myopic glasses of varying strength. Hence they may just turn the scale in favor of spasm of accommodation. Flat, glazed goggles should be worn, and, if required, they can be replaced by the requisite correcting lenses, care being taken that the existing goggles are properly centered. No smoked goggles should be worn after sundown, as they are liable to create a false dusk and so increase the existing danger.

Present Views on Diseases of the Joints.—H. Marsh declares that infection of some kind is the one great factor in joint disease. He makes the following classification: 1st, those following wounds or occasionally operations, or occurring in the progress of acute infective osteomyelitis or pyemia; 2d, those met with in the specific fevers, rheumatism, scarlatina, typhoid, influenza, or in dysentery; and 3d, those caused by some such organism as the streptococcus, staphylococcus, or gonococcus, which may produce, how-

ever, various types of symptoms. While the gonococcus generally causes an acute infection, it may set up an inflammation of a low grade of intensity. It seems to be growing on an exhausted soil and dwindling by extinction. It is doubtless present in small numbers and associated with other organisms which enfeeble its effects. Under these conditions the joint effusion is not necessarily great, but there is a slowly increasing swelling of the synovial membrane and a perisynovial tissue. Pain is a minor factor. Stiffness is usually marked and there is the muscular wasting characteristic of chronic arthritis from any cause. In fact the symptoms strongly suggest tuberculosis. The author says that under the influence of environment the gonococcus has been deprived of so much of its virulence and is in such small quantity that the degree of irritation it produces is practically identical with that to which the *B. tuberculosis* gives rise. Several cases of the type above referred to are detailed. The sources of infection may be various. Even a bad tooth or a mere surface abrasion may lead to joint involvement. The primary step and treatment of such cases is to discover and shut off the source of infection. The particular steps to be followed in handling the joints in any given case will depend on the exact bacterial factor in action. Thus in some instances we should open and drain the joints early. In other cases the joints should be kept at rest and the patient live an open-air life. Douches should be employed twice daily as hot as can be borne without blistering. Small blisters are often useful. If the joint is cool and painless but stiff, manipulation should be the first step. Sometimes permanent adhesions may form leading to ankylosis. Force may be employed to rupture a fibrous union if the limb has become fixed in such a position that the heel cannot be brought down.

Sprains and Their Consequences.—W. Bennett divides sprains into three classes: 1st, those involving the soft parts only; 2d, those associated with fracture, and 3d, those with gross nerve injury. He notes that deferred or remote swelling in deep sprain may show itself a long way from the seat of the original injury in consequence of its being caused by the blood tracking along the fascial planes in the lines of least resistance. In all cases of sprain the first thing to determine is whether fracture coexists, and this can be done by radiography. We should next eliminate the existence of gross nerve lesion. If numbness is found and if it persists for more than twelve hours a gross lesion of the nerve branch is pretty certain. In sprains without swelling, the first indication is relief of pain. We should rest the part and exercise pretty firm compression. This having been effected, massage cannot commence too soon. If extravasation of blood is present, we should first stop the bleeding. Rest is the best remedy. Ice applications are practically useless, and in persons with renal lesions may easily cause sloughing. Hot fomentations, however, are often of value. The increase of the immediate swelling having ceased, should the part involved be a joint, firm pressure by means of a porous bandage, firmly and evenly applied for twenty-four hours, followed by massage, gives the best and quickest results. The use of impermeable rubber bandages is unadvisable. For the prevention of adhesions and muscle waste, voluntary movements, massage, and passive movements rank in the order mentioned. Slight voluntary movements cannot be commenced too soon; splints, therefore, should in a general way not be used. The patient should, in fact, from the earliest moment amuse himself by seeing how far the part, if a joint, can be bent without permanent increase of discomfort. Massage should not, except in special circumstances, be delayed for more than twenty-four hours or at the most thirty-six hours after the cessation of increase in the local swelling. Passive movements should follow freely as soon as all heat has left the damaged part. In regard to remote consequences of sprains, the author makes the following tabulation. Preventable consequences are persistent pain, stiffness, muscular wasting, general joint relaxation, and deformities. Unavoidable in certain cases are osteoarthritis, local paresis, and myositis ossificans.

Cancer: Its Treatment by Modern Methods.—In the Bradshaw lecture E. Owen speaks particularly of cancer of the breast, lip, and tongue, and takes up the treatment by starvation and injections. He gives certain statistical results, discusses the conditions of the "Imperial Cancer Research Fund," and shows results obtained by the labors of the committee of the fund as thus far accumulated. He declares that the Doyen method of injection has proven a flat failure and that the *Bacillus neoformans* of the French surgeon produces in animal experimentation only inflammatory and not cancerous deposits. As yet we know of no sure "cure" for cancer, and he regrets the publicity afforded from time to time in newspapers and periodicals to very misleading notices in favor of the numerous so-called cures. He notes that in the course of inoculation experiments upon mice every now and then a mouse which has been infected with cancer gradually triumphs over the disease, and at last gets entirely free from it. The same thing sometimes occurs in the human subject—an undoubtedly malignant deposit steadily growing smaller, and eventually fading away. Unfortunately, this takes place so rarely in the human subject that it is impracticable to hope for it. *But it may happen;* and in cases in which the disease is regarded as inoperable, the surgeon does not lose sight of this possibility. The question arises as to what there was in those mice, or in that happy individual, which enabled the natural forces to vanquish the disease. And as soon as we are able to imitate that process in the laboratories, the cure of cancer will be within our reach. Is it due to some extraordinary property in the colorless blood corpuscles which has, somehow or other, been awakened into activity, so that the cancer cells—which, in the absence of proof of the existence of specific cancer germs, must still be deemed the essence of the disease—are routed and destroyed? In this direction experimenters are already at work, some with drugs administered by the mouth; others with injections of sterile cultures of potent germs; others with animal or vegetable juices, chemical solutions, or emanations of some radium or electricity. The author refers to the work of Bashford and Murray, who made the discovery that by injecting a few drops of blood from a normal mouse into the circulation of a healthy mouse on which they are about to graft a cancer, they can effectually prevent that graft taking root, though blood of a rat or of a guinea pig similarly injected has no such protecting influence on the mouse. If these results be confirmed by other workers, the next thing will be to find out *why* this happens. And if it be conceded that the mere injection of a few drops of healthy blood can prevent the mouse becoming a prey to cancerous infection, the thought comes home that, after all, it may be only some small thing which is needed to check the progress of a cancer by which a human being is infected—it needs but an infinitesimal amount of vaccine lymph to render a whole country proof against the ravages of smallpox. The time is surely ripe for the advent of a Jenner in the world of cancer!

Berliner klinische Wochenschrift, December 3, 1906.

The Transference of Tumors in Dogs by the Sexual Act.—Sticker expresses the opinion that the reason why it has been found impossible to secure the transference of tumors from one animal to another by the contact that takes place when they are kept together in captivity is because any injury which might become the site of an inoculation is usually also the seat of an infection whereby the vitality of the transplanted cells is destroyed. He was able, however, to produce tumors in a number of dogs that he had inoculated with tumor juice squeezed from a sarcoma of the vagina of a bitch. He also reports the occurrence of sarcoma of the penis in two dogs out of seven that were allowed to copulate with a bitch having sarcoma of the vagina. In each of these instances the period of incubation was about three and a half months, and the growth appeared at a spot on the penis corresponding to the position of the vaginal ulceration. The author suggests that the proof that is thus afforded of the possibility of inoculation in this way should be taken into account in passing judgment on the case of cancer *à deux* occurring in husband and wife which have heretofore usually been considered as being the result of coincidence.

A New Cardiac Remedy.—Lewin and Stadelmann jointly contribute a favorable report on a substitute for digitalis in heart disease. The former author has carried out the chemical and pharmacological investigations and the latter has tested it clinically. The remedy in question is obtained from an East African tree, the *Acokanthera*, belonging to the family of the *Apocynacea*, and occurring from Lake Nyassa, northward into Abyssinia and Somali land. Two varieties are recognized, *Acokanthera schimperi* and *Acokanthera deflersii*. From the wood of these trees several toxic principles may be obtained, of which the most active is a crystalline glucoside, oubain. This is highly toxic and in many respects, which are detailed by the authors, appears to resemble digitoxin. Stadelmann's clinical observations were made on twenty-nine cases of heart lesions, and the remedy was usually given in the form of an infusion made from the wood in the strength of about one per cent. and given in tablespoonful doses. The therapeutic effect is analyzed in detail, but appears to be closely allied to that of digitalis. The remedy has the advantages, however, that the wood appears to keep its virtues indefinitely, in contrast to the well-known instability of digitalis leaves, and oubain can be injected hypodermically without causing pain or irritation. While the authors feel very sanguine as to the future of this drug, they consider

that much more experience with it must be gained by careful tests in hospitals and clinics before its use can be permitted in general practice.

Münchener medizinische Wochenschrift, December 4 and 11, 1906.

Packing the Nose in Ozena.—Sondermann states that the ordinary means available for use by patients with ozena in order to remove the crusts, are inadequate and impractical. The commonly used method of irrigation is troublesome and is therefore often omitted by the patient, and in addition it involves danger of infection of the Eustachian tube and middle ear. He proposes the following plan which he says he has found very successful. The patient is provided with a small bag of very delicate rubber tissue, which is affixed to a detachable tube and rubber bulb. The bag is introduced into the nasal passage in the collapsed condition, and is then inflated by means of the bulb. It applies itself closely to all the irregularities of the wall of the nasal space and even reaches into the nasopharyngeal space. The air is prevented from escaping by the use of a pinch cock, and the bulb is detached; at the expiration of five or ten minutes, the air is allowed to escape and the tampon can easily be removed, carrying with it the crust. The apparatus is kept in water and by the time it is to be used again the adhering crusts will have separated from it. The author advises the use of this method twice a day during the first week and later once a day.

The Treatment of External Anthrax.—Lengfellner says that excision is being used less and less frequently in the treatment of external infections with the anthrax bacillus, and that the conservative method is gaining constantly increasing favor. The essentials of this method consist in leaving the pustule absolutely undisturbed, in thoroughly cleansing its surroundings, in applying a nonirritating ointment in order to prevent rubbing of the dressing, and in suspending the injured member, and keeping it absolutely at rest. The underlying principle is not to interfere with the tissues in their struggle against the germs or to do anything that may cause the entry of these into the blood stream. The author reports fifteen cases of anthrax, in which the diagnosis was made miscroscopically and bacteriologically, and which were treated by this method in von Bergmann's clinic with 100 per cent. of recoveries. In about a third of the cases the pustle was situated on the arm, in another third it was on the face, including one case in which the upper eyelid was infected, in one-fifth it was on the neck, and in one-fifth on the hand. The author states that one case is reported in the literature in which a severe infection was cured by the use of a serum, and he is of the opinion that this method offers great possibilities for the future, and should receive more attention than has hitherto been accorded to it

An Autopsy on a Typhoid Bacilli Carrier.—Levy and Kayser believe that they have been able to offer the first positive proof that the gall-bladder can be the nidus of proliferation for the typhoid bacilli in cases of chronic typhoid carriers. The patient on whom the observations in question were made at autopsy was a woman of forty-eight years, who for thirteen years had been a patient in an institution for the insane. In 1903 she went through with an ordinary typhoid infection without complications, and apparently recovered from this completely. Early in October, 1905, on the occasion of a typhoid epidemic in the institution, it was discovered that the stools of this patient contained typhoid bacilli, and in the course of the following year the authors were able to verify this discovery on ten different occasions. On October 11 the patient died of a septic infection, and at the autopsy it was found that the right lung was the seat of a hypostatic pneumonia. Cultures made from the interior of the spleen, the interior of the liver, the wall of the gall-bladder, the bile, and the interior of a gallstone whose exterior had been sterilized by heat, all revealed the presence of typhoid bacilli in these situations. In the authors' opinion this case, particularly the discovery of the bacilli in the interior of the gallstone, affords proof of the view that the gall-bladder is the seat of chronic typhoid infections, and also of the fact that such persons may suffer from an autoinfection, for they regard the patient's death as being the result of a typhoid sepsis as evidenced by the presence of bacilli in the spleen.

A Convenience in Examining Sediments.—Sachs-Muke calls attention to the length of time that is often necessary in examining sediments microscopically, such, for example, as those obtained from supposably tuberculous sputum by means of inoscopy or some other similar process. He then describes a procedure intended to render such examinations less tedious. This consists in spreading out about .5 c.c. of the sediment on the surface of the slide and allowing it to dry. A similar amount of sediment is added and the procedure is repeated, and the process is continued until the necessary quantity of sediment has been transferred to the slide. The preparation may then be stained in the usual way. As the sputum by previous treatment has been rendered free from coarser particles, mucus, etc., the film of sediment adhering to the slide is perfectly well suited to microscopical examination, and in this way a considerable bulk of sediment can be thoroughly searched through in much less time than if a large number of separate preparations were made.

Deutsche medizinische Wochenschrift, December 6 and 13, 1906.

Agglutinins and Specific Immune Bodies in Gonococcus Serum.—Vannod describes the manner in which he was able to obtain a specific agglutinating serum from rabbits that had been treated with an extract of gonococcus cultures. For this purpose the bacteria were treated with potassium hydrate and a precipitate was obtained by the addition of acetic acid. This precipitate when dried formed a powder soluble in sodium solution, and it was this material that was used to inject into the rabbits. In this way a serum was obtained which was strongly agglutinating, both macroscopically and microscopically, for gonococci, but not for staphylococci, streptococci, or typhoid bacilli. Meningococci, on the other hand, were agglutinated by the serum, and meningococcus serum was found to agglutinate gonococci. The author also describes the steps by which he was enabled to prove the existence in the gonococcus serum of specific amboceptors, but that the serum did not contain amboceptors specific for meningococci, and that therefore the demonstration of the specific amboceptors, rather than agglutinative power, affords the best differential diagnostic method

The Catgut Suture in Fracture of the Patella.—Riedel does not believe in the use of silver wire as a suture material in cases of fracture of the patella, and describes a procedure which he considers preferable to the open operation. An incision one cm. in length is made two cm. above the upper fragment of the bone, and through this a suitably curved handled needle is pushed behind the patella and is brought to the surface through the ligamentum patella just below the lower fragment. The point of the needle is cut down upon before it is pushed through the skin in order that the four catgut threads, which are now threaded into its eye, may be more readily drawn through the little incision, behind the patella, and out through the upper wound. The needle is then reinserted in the upper incision, is passed down in front of the bone, and emerges at its former point of exit below the patella. It is again threaded with the same strands of catgut, which are brought out at the upper opening and tied to their other ends. In this way the patella is surrounded by the catgut ligatures, and the two fragments are held firmly in apposition. The knot is a buried one, and each of the two small incisions is closed with a single stitch of catgut. The author recommends this procedure very warmly for recent cases, though he gives warning of the aseptic inflammation which the presence of the catgut may occasion. He cites eight cases of fresh fractures treated in this way with excellent functional results. For old cases of ununited fracture Riedel also recommends suture with catgut, but as in these instances it is necessary to freshen the surfaces of the fragments and to remove any synovial fringes, etc., that may have dropped between them, he employs two lateral longitudinal incisions on either side of the patella in order to secure access to the joint. This is done because he is very much opposed to long incisions in front of the patella or below it on account of the interference with kneeling that scars in these situations are likely to occasion.

Analgesia of the Ulnar Nerve from Pressure and Its Value as a Symptom in Tabes.—Jean Heitz declares that analgesia of the ulnar nerve from pressure is not a special symptom in tabes. This symptom is noted with very great frequency in tabes and is found after the abolition of the reflexes and Argyll's symptom. It is more frequent than anesthesia of the skin of the inner region of the arm. Biernacki's symptom appears very early. It is a useful indication in those cases in which the association of two or three symptoms makes clear the diagnosis in incipient tabes. This holds good in patients showing aortic lesions, and old syphilitic lesions, in whom the nervous system and the aorta are affected at the same time. In patients of this kind determination of ulnar analgesia, especially if it is bilateral, offers one symptom more for the clinching of the diagnosis. *Journal de Clinique Médicale et Chirurgicale*

Book Reviews.

RATIONAL ORGANOTHERAPY WITH REFERENCE TO UROSEMIOLOGY. By Prof. Dr. A. von POEHL, Prof. PRINCE J. von TARCHANOFF, Dr. ALF. von POEHL, Dr. P. WACHS. Translated by Dr. CARL SCHÜLIN, Billings, Mont. Vol. I. Philadelphia: Blakiston's Son & Co., 1906.

In 1878 Schreiner isolated in crystalline form spermin, an organic base found in semen, styling it spermin. The crystals of spermin phosphate had been discovered by Boettcher as far back as 1865. In 1890 von Poehl first prepared the base in the pure state in large amounts and published certain important investigations upon its physiological action. Since then he has been unremitting in his labors in this field of organotherapy. The first volume of this work is devoted to a general outline of organotherapy from the viewpoint of von Poehl and his followers, describing the chemistry of spermin, the physiological action, and the clinical value of this preparation.

Prof. von Poehl supports his brief with a mass of experimental data and quotes a full bibliography of the subject. His work is an amplified and codified collection of the mass of research which has been done in his own particular branch of organotherapy, and he is supported in this by a group of workers whose names appear on the title page, including Prince Tarchanoff, who was the first to study the physiological action of spermin. Poehl and his pupils regard spermin as a catalysant (catalysator is the word they use), which assists in oxidation and promotes metabolism. He maintains that spermin is one of the normal division products of the leucocytes and takes a great share in oxidation, and supports this claim by an elaborate meshwork of scientific data, including chiefly observations on the urine—the osmotic coefficient of this fluid, and other means of studying urinary metabolism.

The book will be accepted with a certain reserve by those who have followed the trend of Professor Poehl's work. It will be remembered that doubts have been expressed as to whether his preparation is actually spermin hydrochloride ($C_5H_{14}N_2HCl$), and his methods have been severely criticised. The controversy is an old one now, however, and receives due consideration in this volume. The translation is, on the whole, good, although many un-English words have been coined, not always with felicity, to reproduce the original expressions. Such silliness as the repeated mention of Dr. G. v. Hirsch as "the Czar's physician" should be discouraged in a scientific work.

A TEXTBOOK OF OBSTETRICS. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania; Gynecologist to the Howard, the Orthopedic, and the Philadelphia Hospitals, etc. Fifth Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1906.

HIRST'S Obstetrics is so well and favorably known to the medical public that it is hardly necessary to add anything to this announcement of the appearance of a new edition. In this the author has made a careful revision wherever necessary, "paying particular attention to the recent advances in our information regarding puerperal infection and gestational toxemia, but incorporating in the text only the facts that seem at present clearly established." A comparison with the previous edition, published about three years ago, shows few changes of importance, yet such as have been made are of a character to increase the value of the work as a teaching guide to the student and to the practitioner whose lines are laid in the field of obstetrical practice. The illustrations are good, 767 in number, 40 of which are colored. A sacrifice has been made to them in printing the book on glazed paper, the reflection of which makes the reading of the text a trying task to the eyes. Most of the pictures would have been as clear if paper with a dull finish had been used, and those which called for a special surface might have been printed as inset plates. The reader would have been thereby spared much irritation, and we venture to say the book would have found a much wider circle of readers. Publishers in these days apparently attach an undue importance to the work of the illustrator. Pictures are useful, and often necessary, but the text is, after all, the thing, and the reading of this text should be made as easy as possible instead of, as in so many books, a vexation of eyes and spirit.

ABDOMINAL OPERATIONS. By B. G. A. MOYNIHAN, M.S. (London), F.R.C.S. Leeds. Second Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1906.

THE first edition of this really superb work appeared only a little over a year ago, yet so rapid is progress in this most important surgical field that the author has found it necessary to make a large number of additions to the text and illustrations. In this work Mr. Moynihan treats of those diseases and the operations for their relief which concern the abdominal organs common to the two sexes, and all strictly gynecological subjects are omitted. He also excludes, rather arbitrarily, consideration of those organs, such as the bladder and the kidney, which are partly extraperitoneal, and of hernia. The title might be rather "Intraperitoneal Operations," which would more accurately define the scope of the work. The author has very definite views and does not hesitate to advance them, rejecting, to the point of absolute silence, any consideration of methods or technique which do not meet with his approval. This renders the book of special service to the practising surgeon, but lessens its value as a guide to the recent graduate who cannot afford to pin his faith upon the teachings of any one man, however great an authority he may be. The illustrations are numerous and handsome, but it is a pity that the publishers should have sacrificed the text to them by printing the book on highly glazed paper. The reading of the book, especially by artificial light, is for this reason most trying to the eyes. If half-tone pictures cannot be printed on paper with a dull finish, then the illustration should be drawn and not photographed; the text is the thing, after all, in a book of this sort, and simple diagrams will suffice to illustrate it. The book will perhaps be less "showy," but it will be more useful and more read

ESSAYS ON PASTORAL MEDICINE. By AUSTIN O'MALLEY, M.D., and J. J. WALSH, M.D. New York and Bombay: Longmans, Green & Co., 1906.

THESE essays are addressed to the priesthood of the Roman Catholic Church, but their importance will be appreciated by clergymen of other denominations. The subjects present that part of medicine which concerns a pastor and his flock and those divisions of ethics and moral theology which concern a physician in his practice. Pastoral Medicine sets forth facts and principles whereby the physician himself or his pastor may direct the operator's conscience whenever medicine takes on a moral quality; and it also explains to the pastor, who must often minister to a mind diseased certain medical truths which will soften hard judgments, and other facts which may be indifferent morally, but which assist him in the proper conduct of his work. There is, therefore, an urgent necessity that competent men should fix that shifting and debatable point of ethics and moral theology which includes pastoral medicine. The following are among the many topics treated in these essays: Ectopic gestation; pelvic tumors in pregnancy; abortion, miscarriage, and premature labor; cesarean section and craniotomy; maternal impressions; social medicine; hypnotism, suggestion, and crime; the priest in infectious diseases; infectious diseases in schools; school hygiene; mental diseases and spiritual direction; menstrual diseases; epilepsy and responsibility; venereal diseases and marriage, and social diseases. These scholarly essays by Drs. O'Malley and Walsh are pathfinders and most admirable, and should be read and pondered over by the physician, surgeon, gynecologist, priest, minister, editor, lawyer, patient, teacher, and parent. The volume really fills a long-felt want in medicine and sociology.

DIE TUBERCULOSE. Vom Prof. Dr. G. CORNET. Berlin und Reichenhall. Zweite, vollständig umgearbeitete und im Umfang verdoppelte Auflage. Mit 15 Illustrationen, 1 Karte, und 5 Tafeln in Farbendruck. Wien: Alfred Hölder, 1907.

SOME idea of the scope and thoroughness of this work may be gained from the author's statement that during the seven years that have elapsed since the appearance of the first edition about 13,000 articles on tuberculosis have been published, and that most of these have been consulted by him in the original. In consequence of this enormous amount of material to be incorporated, in its present edition the book has been almost doubled in size and now comprises over 1,400 pages. In its original form the work was recognized as one of the most comprehensive on this subject, and it now undoubtedly stands preeminent among treatises on tuberculosis. It would be a work of supererogation to try to summarize the table of contents, which covers twelve pages, or, indeed, to particularize at all in regard to the subjects discussed, for there is no question connected with the disease as encountered by the internist that is not covered, and the author's authority both as a clinician and as an investigator is so firmly established that no discrimination is possible between his achievements in either direction. Within the present limits of space it is useless to attempt to do more than to call the attention of medical readers to the fact that the work has been revised, and to assure those not already familiar with the first edition that this book undoubtedly represents the most comprehensive single treatise on tuberculosis as a whole that has yet been published. Its value as a work of reference may be inferred from the fact that it contains a classified and indexed bibliography of 9,500 articles by about 8,000 authors.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON DERMATOLOGY.

Stated Meeting, Held October 30, 1906.

DR. A. R. ROBINSON IN THE CHAIR.

Three Cases for Diagnosis.—Dr. CHAS. MALLORY WILLIAMS presented three children, the oldest twelve years of age, of a family of four, several of whom had shown typical lesions of syphilis of the skin and of the bones. For several years they had all shown a similar eruption, occurring principally on the forehead near the nose, and consisting of deeply-scratched papules; sometimes arranged in segments of circles, sometimes scattered irregularly. They had been treated for several years, taking mercury, iodine, and tonics internally, and using protective and antiseptic ointments and pastes locally; often with temporary improvement, but with no permanent benefit. Prolonged observation left a strong impression that the scratching was the cause of the eruption, but its persistence in the same region in all of the children was very curious.

Dr. POLLITZER said that without going into the question he was quite willing to concede that these three patients were syphilitics; but he was confident that the papular lesions on the face and hands had nothing to do with syphilis. As to the nature of the process it would be presumptuous for any one to venture on a diagnosis after a single and rather inadequate examination when the excellent dermatologists who had long had the cases under observation confessed themselves at fault. He would like, however, to venture the suggestion that this family disease characterized by the occurrence of intensely pruritic papules, possibly vesicles, resulting in loss of tissue and scarring, located on the exposed parts of the face and hands, might bear some relation to that group of diseases described under the inept term of summer prurigo.

Dr. WHITEHOUSE saw undoubted stigmata of syphilis in all the children exhibited, but was not familiar enough with their histories to state the exact course of the disease in each case. The obstinate skin lesions which they now manifested upon the head and face, however, he did not regard as syphilitic in any respect. It was a secondary local septic dermatitis such as might occur, and continue unaffected to any appreciable degree by treatment, in subjects exhibiting such a lowered state of nutrition, whether due to syphilis or to some other dyscrasia. General constitutional and hygienic measures looking to improvement in their general tone would, in his opinion, be the only successful means of removing the eruption.

Neurotic Eczema.—Dr. WILLIAMS reported the case of a man 25 years of age, a laborer, whose family and the previous personal history were negative. The patient denied having had syphilis or gonorrhea. He did not use coffee or alcohol, but smoked about three ounces of tobacco a week, and took about three cups of tea daily. His diet was rather low, being chiefly bread, milk, and tea, with very little meat. He began to masturbate at 18 years of age, performing the act two or three times a day, often till the blood came. About a year later he noticed an eruption like the present, which he said appeared first on the back of the right thigh. The self-abuse was continued till two or three years ago, since which time he had had sexual intercourse about once in two weeks. Partial erections were now easily provoked, and mental excitement often caused emissions, even without erection. Nocturnal emissions were common, and seemed to occur regardless of sexual intercourse. Since its first appearance, six years ago, the eruption had never been absent more than a week or two at a time. An outbreak was provoked by any nervous or physical strain—a normal coitus, a nocturnal emission, a day's work in the field—and was sufficiently distressing to incapacitate him, so that he hardly did a full month's work in a whole year. The region most affected was usually the face. He said an attack always began with great swelling and redness, so that sometimes he could hardly see. Soon vesicles appeared which ruptured and exuded, the serum drying to a yellow crust, and the process then gradually declined. He was a man of 167 pounds in weight, of stocky build, and nervous, restless manner; tongue moist and coated, appetite good, bowels regular; pulse 66, regular, good force; the urine amounted to 36 ounces in twenty-four hours, sp. gr. 1.018, acid, total urea 12.4 g., trace of albumin, few hyaline and granular casts, no spermatozoa. The scalp was clean. The skin on the middle of the face and forehead, extending on each side about as far as the external canthus, was red and swollen. The border was irregular, with outlying spots of disease, but still fairly sharp. The affected area was set was small papules and vesicles, many of the latter having ruptured, their secretion drying to a yellow crust. There were many scratch marks. Besides the crusts there were many fine, small scales. The swelling was firm, as from a subacute inflammation, not soft and edematous. The skin of the scrotum was dull red, thickened, harsh, and scaling slightly. On the forearms and thighs were a few scattered red papules, the appearance here being that of a mild dermatitis. The chief interest in this case lay in the coincidence of the appearance of the dermatosis with the development of sexual neurasthenia, and in the close causal relationship between the expenditure of nervous force and the outbreak of an acute attack. The diathesis, the faulty metabolism, the personal idiosyncrasy, or whatever it was that determined this particular cutaneous reaction, was at present beyond our knowledge and control; the exciting cause, on the contrary, was found in the neurotic condition of the patient, and this furnished a good mark for therapeutic attack.

Case of Argyria.—Dr. DAISY M. ORLEMAN ROBINSON reported the case of a woman, 54 years of age, a housework-er, brunette, tall, and quite stout. No history of a cutaneous disease at any time in the family. Patient had suffered from constipation since childhood. She was treated by a physician for a catarrhal condition of her throat four and a half years ago, once every two weeks, for a period of two months, a solution of nitrate of silver in the form of a spray having been applied. She then continued this treatment herself daily until she came under the speaker's observation. An ounce of the solution lasted one month, hence she used about five grains of nitrate of silver every month. She first noticed a discoloration of the skin two years ago, after having used about one hundred and thirty grains of the salt, but could not state where it first appeared. The discoloration at present was general over the entire body, but most marked upon the parts exposed to the light, and was of a bluish-gray shade. That on the lower extremities was lighter in color and might not be recognized if examined independently of the rest of the body. The mucous membrane of the mouth had a decided bluish tinge. The discoloration on the gums was less marked. The vaginal mucous membrane, arms, and rectum were similarly discolored. Blood examination showed little or no change in erythrocytes. There was no leucocytosis, the differential count was: eosinophiles 1 per cent., transitional 1.6 per cent., lymphocytes 30.8 per cent, polynuclear 66.6 per cent. The urine had a specific gravity of 1.020, slight trace of albumin, a few hyaline casts, blood, vaginal epithelium, bacteria, and mucus. The case was shown on account of the comparative infrequency of the disease at the present time, and especially because it had been caused by the topical application of the silver salt to the throat. A portion of the skin from the upper part of the shoulder had been

removed for microscopical study, and a report would be given at another meeting.

Multiple Tumors.—Dr. LAPOWSKI presented a man, 20 years of age, with negative personal and family history. The present disease started eight years ago, when a cherry-sized tumor was noticed in the region of the right axilla. Since that time tumors had appeared on various parts of the body, the last coming several days ago on the abdomen. They were now scattered over the whole body, on the forehead, upper and lower extremities, and trunk. Some were round, from the size of a small pea to that of a bean; others were oblong, from one-half to two inches long. The tumors were under the skin, and both the skin and the tumors were movable. The color of the skin was normal. The tumors were painless, slightly hard, and appeared without any prodromal manifestations. The color of an excised tumor on section was white, of the color of lard; the mass was compact and hard. The glands were not perceptible, the visible mucous membranes were normal, and the general condition of the patient was good. Microscopical examination would determine whether the tumors were fibromata or neurofibromata.

Dr. POLLITZER said he thought the case was one of Recklinghausen's disease—multiple neurofibromata of the skin. The patient's trunk was covered with countless yellow-brown pigmented areas, forming the second symptom in the syndrome of Recklinghausen's disease. The little tumor which he had seen seemed to him to be a neuroma or fibroma, and after an inspection of the case clinically he would say it was probably neurofibroma. He would be pleased to examine the specimen and report on its histopathology at an early meeting.

Tuberculide.—Dr. LAPOWSKI presented a man, 41 years old, of Polish birth, a tailor. Ten years ago he had a pimple of some kind on his penis, which disappeared in a few days. He did not remember any secondary symptoms on either skin or mucous membranes. The present eruption began about fourteen years ago on the face, coming and going, and spreading gradually downward, and had remained practically unchanged for the past eight or ten years. Each lesion began as a pimple with a white center, from which water or matter could be expressed. If not scratched the papules dried and scabbed, the scab later falling, leaving a depressed opening. There was no itching. The eruption was scattered over both lumbar regions and on the flexor surfaces of the upper and the lower limbs, in rings and half rings, which on healing left pea-sized scars, without any pigmentary border on the abdomen, while on the lower extremities there were pigmentary spots. Some had dry blood scabs, on removal of which punched-out bleeding ulcers appeared, not deep or dry enough for a tuberculide. While the man was under observation two months ago, a pea-sized patch developed on the right palm; the epidermis was raised at the edges, the base was slightly scaly. Last month he had an urticarial and impetiginous eruption, which gradually disappeared, leaving the original lesions but little changed. The patient took mixed treatment for a month, and then mercurial inunctions for two weeks, leading to marked improvement in some of his lesions, while the others were quite unaffected. Dr. Lapowski presented also, in connection with this case, the woman shown as a case of tuberculide at the preceding meeting.

Dr. DILLINGHAM did not regard either case as one of tuberculide. The woman he considered as being a case of chronic urticaria; the man had an entirely different disease, and although at first it would suggest syphilis, closer examination showed that the lesions were acute and not characteristic of that disease. It appeared to be a general infection and as there was atrophy it was possible there might be a syphilitic element in it. The speaker would wish to study the case more carefully before making a diagnosis.

Dr. POLLITZER was glad to find himself in accord with the views expressed by most of the speakers as to the nature of these two cases. One of the earliest cases of the disease, now regarded as a type of the tuberculide, to be published with full histological details was the speaker's case of hidradenitis. The evolution and course of that case were perfectly clear in his mind and they were nothing like the case of the woman shown by Dr. Lapowski. The characteristic features of the speaker's case were the origin of the nodules in the deeper layers of the skin, their slow evolution, the breaking down of the epidermis with discharge of pus and necrotic shreds, and the resulting small, depressed cicatrices, the whole without any subjective symptoms. This description agreed perfectly with Barthelemy's account of his acnitis published almost simultaneously and Dubreuilh's subsequent publications. In this case there was nothing of the course of the so-called tuberculide acnéiforme. Here the lesions appeared abruptly on the surface, there was intense pruritus, a papule was formed (as in prurigo), the patient scratched violently, tearing off the epidermis with the nails, a crust resulted, and finally a slight scar. Dr. Pollitzer would call this case one of chronic papular urticaria. As to the tuberculides in general, he desired to place himself on record as not accepting that group of dermatoses as presented by our French colleagues. They were grouping together a number of different diseases virtually on the sole basis of a supposed common etiology which, in the speaker's opinion, did not exist. As to the case of the man, the patient admitted having had a chancre some years ago, and had to-day general adenopathy. He was without doubt syphilitic, and his skin lesions were part of his syphilis.

Dr. WHITEHOUSE regarded the skin affections in these two subjects entirely distinct one from the other, and he considered neither of them examples of so-called tuberculides. The evolution of the lesion in this affection, which he preferred to call necrotic granuloma, was uniform and characteristic in every case that he had seen. It was a deep-seated papule or nodule, developing slowly with slight inflammatory symptoms, the summit of which, after some days, sank in and went on slowly to complete necrosis; upon healing a variola-like scar remained. The man just shown had syphilis, as seen in a circinate patch upon the ankle now about healed and a group of indolent, dull-red papules on the calf of the leg. The eruption on the trunk and limbs elsewhere he considered an independent affection, a folliculitis. He had seen this condition go on for years as the result of an intestinal toxemia. Dr. Whitehouse considered the woman's case to be one of chronic urticaria. The evanescent character of the eruption, including an edematous plaque upon the wrist, the intense itching, pigmentation, and even scars, were all consistent with the diagnosis of chronic urticaria. Pigmentation was not uncommon in this disease nor were scars as the result of local infection due to scratching.

Dr. LAPOWSKI, closing the discussion, agreed that there was a decided element of urticaria.

A Case of Psoriasis of the Scalp and Hands Only.—Dr. A. R. ROBINSON presented this patient, a man, aged 60, cigarmaker, married, five children, seven sisters, and two brothers. No history of any cutaneous disease in the family. Had always been healthy. He was accustomed to eat moderately of a mixed diet, to drink much tea and coffee, and for thirty years had drank two quarts of beer daily. Eruptions first appeared seven years ago, first on the scalp as a small pea-sized lesion; others formed, and by extension and coalescence the entire scalp was affected. Six months after the first appearance on the scalp the lesions appeared on the palm of the left hand, and six weeks later upon the palm of the right hand, and gradually extended to the wrists. The disease had existed continuously since that time, though milder in winter than in summer. The eruption appeared upon the palms as small lesions sometimes increasing in size and uniting to form a patch. Five

years ago small seborrhea-like lesions appeared upon the right side of the nose and upper lip and had remained ever since. No eruption had appeared at any time upon other parts of the body. On the scalp were well-defined areas of psoriasis. Where the hair was absent as on top of the scalp no lesions were present. The case was shown on account of the age at which the psoriasis first appeared and on account of the close similarity of the lesion upon the palms to that of a papulo-squamous syphilide—a resemblance the speaker had noticed before in these cases of atypical psoriasis. A few months ago he exhibited before the New York Dermatological Society an atypical case of psoriasis with very similar lesions upon the palms. In that case the disease was limited to the hands and tongue. This case was atypical on account of the age when the eruption first appeared and the limitation to the scalp and hands.

Case of Atypical Psoriasis of Elbow and One Palm.—Dr. DILLINGHAM presented a case which he said was interesting in that the eruption did not appear until the patient was 45 years of age, and for four years it was confined to the elbows; the case also illustrated that it was often impossible from the palm alone to make a diagnosis between psoriasis, eczema, and syphilis. Jacob S., 49 years of age; no history of venereal disease. Had no eruption until four years ago, when a small lesion appeared on his left elbow, gradually increasing in size, and followed by others, all commencing as small lesions spreading at the periphery. After several months lesions appeared on the right elbow. The eruption had never disappeared, and at no time had there been any serious exudation. A certain amount of itching had been present. A month ago lesions appeared on the left palm without any history of irritation from occupation or otherwise. There had been no eruption on the rest of the body. A diagnosis of psoriasis was made on the character and history of the lesions, the location, manner of spreading, and absence of exudation. Squamous syphilis could be excluded by the location, absence of lesions on the rest of the body, slow growth, and character of the lesions, thickening instead of infiltration in the corium, and absence of atrophy. Eczema could be excluded by the location, character of scales, sharply limited margin, manner of spreading, and absence of serous exudation and of vesicles and papules at the margin. The speaker said he realized that the margin and manner of spreading would not exclude dermatitis seborrhœica, but the reddish color and the elevated and almost tubercular character of some of the lesions would. The age of the patient and the limitation of the disease, although unusual, were not against the diagnosis of psoriasis. Wilson had reported a case of psoriasis appearing for the first time in a patient 85 years of age, and Crocker one at 81 years. In Nielssen's cases 2 per cent. appeared after 50 years of age. In regard to the limitation, Crocker had reported a case in which, although there were two or three attacks, the eruption was present on the palms only, and another case in which it was confined to the left hand for several years and never affected any other part of the body except the right hand earlier. Cavafy had reported a case in which the eruption was limited to the right forearm and hand for twenty years, beginning on the palm. A number of cases had been seen in which the disease was limited to the scalp. When the eruption made its appearance late in life it was more apt to be atypical in character and location.

Two Cases of Syphilis and One Case of Psoriasis of the Palms.—Dr. WILLIAMS reported the following cases:

CASE I.—The patient, a clerk, 30 years of age, applied for treatment February 21, 1906. He had a healed chancre on the penis, a well-marked papular eruption all over the body, and mucous patches in the mouth. The symptoms all disappeared under treatment, which was continued until August. He returned to the dispensary October 3, 1906, with rounded and oval ham-colored spots in both palms, one of them being partially denuded of epithelium in the middle, another just beginning to scale in the middle, others showing only the color and a very slight infiltration.

CASE II.—The patient, a cook, 49 years old, denied having had a chancre. He had two living children, 23 and 21 years old, respectively, and one child, born nineteen years ago, had died. His wife had had no miscarriages. He now had a characteristic tubercular syphilide on both elbows, and syphilitic lesions on the palms, soles, and nails. Some of the lesions on the palms were small, round, very slightly infiltrated, and hardly distinguishable from similar spots on the palms of the accompanying case of psoriasis.

CASE III.—The patient, 55 years old, married thirty-eight years ago, and a widow for twenty-eight years, had had eight children and no miscarriages. Seven of the children died in epidemics. She denied positively having had any eruption until five months ago, when typical psoriatic lesions appeared on the hands and forearms. Some of the lesions on the palms were very suggestive of syphilis, showing the characteristic "collarette," but they were bright red in color instead of dull.

In presenting these cases of eruptions on the palms Dr. Williams called attention particularly to the difficulty in distinguishing certain cases of palmar syphilis from psoriasis on the one hand and eczema on the other. The diagnosis was usually readily made from concomitant lesions elsewhere on the body, or from the history of such lesions, but to decide from an inspection of the palm alone was a different matter. Elliot's sign (the induration or infiltration of the border of a syphilitic eruption), the absence of such infiltration in the other diseases, and Fournier's sign (the sharp limitation of each syphilitic patch as contrasted with the numerous small islands of disease lying near the edge of a larger patch of eczema), were the most useful, but these might fail, and it had been said repeatedly that some cases of syphilis might copy exactly the picture of psoriasis, and others that of eczema. It was in the hope of eliciting further aids in diagnosis that these cases were shown.

SECTION ON DERMATOLOGY

Stated Meeting, Held December 4, 1906.

DR. A. R. ROBINSON IN THE CHAIR

Rhinoscleroma; Marked Improvement Under Radiotherapy.—Dr. W. S. GOTTHEIL presented a woman thirty years of age sent to him by Dr. J. Frankel, July 17, 1905. The growth was said to have begun on the septum five years before, and had been progressing ever since. The central portion of the upper jaw and the septum and alæ of the nose were the seat of a deep and fairly sharply limited infiltration of cartilaginous hardness and absolutely insensitive. The growth evidently involved the bone and cartilage as well as the skin, causing marked protrusion of the upper lip and tilting up the projection of the nose. Both nasal passages were almost entirely occluded, permitting the passage of only the finest probe. The hard and soft palate and the faucial isthmus and posterior pharynx were deformed, thickened, and cartilaginous, and were the seat of chronic ulcerative and cicatricial processes. The general health was fair, though there was some interference with nutrition on account of the interference with deglutition. The larynx was free. The chief subjective complaint being occasioned by the nasal stenosis, attempts were first made at careful dilatation. The most cautious efforts, however, were followed by very profuse and obstinate hemorrhages, one of which was so severe that the patient had to remain several hours at the office with the anterior nares and posterior pharynx tightly plugged before it was safe to send her home. Recourse was then taken to the *x*-ray, and during the past eighteen months the patient had had about fifty sessions at rather irregular

intervals. There was a moderate reaction at various times, during which the patient's subjective difficulties had always been increased; but she always improved when the inflammation subsided. Dr. Gottheil was using the Cornell tube of small size in the mouth and nares. The result had been a marked diminution in size, to the extent of about one-half, in the tumor mass of the upper jaw and nose. The external deformity had been very greatly improved. The pharyngeal ulceration had also gotten better, and swallowing was easier. The nasal stenosis had not yet been affected; but the intranasal treatment had been begun only a short time ago.

Dr. Gottheil, replying to questions, said that he had found radium of no value in these cases. He said he used Cornell *x*-ray tubes, made so small and of such shape that they could be put in the mouth and in the nostril, in contact with the diseased tissue, and he believed that by preventing the passage of the rays through the atmosphere he avoided their irritant effect. He said also that he was a great sceptic as to the value of the *x*-rays, and used them here because he did not know what else to do, the patient bled so alarmingly at the slightest touch.

Syphiloderma Framboesiodes.—Dr. W. S. Gottheil presented this patient, a colored woman, twenty-three years of age, potator, smoker, dissipated. She had been admitted to City Hospital October 15, 1906. There was no venereal history. She had been operated on for cervical adenitis in childhood, and a laparotomy was performed at Johns Hopkins for reasons unknown five years ago, and for the sinus left therefrom an operation was performed one year ago at the Metropolitan of this city. The present skin lesions developed four years ago, and while they had improved at times, she had never been well. Subjective symptoms had been limited to itching, with occasional attacks of soreness. She had been in the City Hospital for her skin affection on three previous occasions for various periods as follows: February 15, 1904, Service of Dr. Bronson, diagnosis, chronic eczema; also had gonorrheal ophthalmia. March 29, 1904, Service of Dr. Fordyce: diagnosis, eczema sicca. April 13, 1905, Service of Dr. Greene: diagnosis, chronic eczema. There is a note on this last record of tertiary syphilis being suspected; but no antiluetic treatment was instituted. She showed the following conditions on admission: Nostrils, left of half of upper and lower lips, and adjacent cheek were covered with impetiginous crusts, under which was an eroded and fissured skin; lesion apparently eczematous. Mucosæ normal. The entire pubic and adjacent regions were covered by a large triangular lesion, the upper base of which started on each side one and a half inches from the iliac crests and extended inwards and upwards toward the umbilicus. The apex of the affected triangle extended downwards along the sides of the labia on to the perineum and thighs, and then upwards to the very extremity of the intergluteal folds; there was also on each side posteriorly a transverse extension of the affected area in each fold between buttock and thigh. The lesion itself formed a continuous moderately hard infiltrated and indurated mass covering the above-described area. Its margins were sharp, elevated, and slightly circinate in places. Its surface was irregular, oozing, and partly covered with crust of exudation and macerated epithelium. Where the folds of the skin were in apposition in the fairly stout patient the surface of the affected area, while slightly hypertrophic, was moist, oozing, and eczematous. The diagnosis at first was eczema marginatum, though the essentially hyperplastic and tuberculous character of the lesions was not usual in this affection. Thorough cleansing and a dusting powder were ordered. Examination of the scales and detritus failed to reveal any hyphomycetic fungi. By October 29 the surfaces were cleansed and the eczematous symptoms had subsided. It then became evident that the lesion was essentially framboesiform; distinct tubercles were visible at the margins, and there were circular depressed areas of scar tissue in various places, especially at the posterior apex of the affected region over the sacrum. Microscopic sections showed no fungi, but a small-celled inflammatory infiltration round the basal capillary vessels and evidences of chronic vascular inflammation. The diagnosis was changed to tertiary syphilis, and the patient put on appropriate treatment. By November 26 the patient had had three ten-minim doses of the ten per cent. mercury salicylate intramuscular injections, and was up to 160 grains of potassium iodide daily, with no local treatment. The improvement was very marked, the surfaces absolutely dry; the tuberous infiltration rapidly disappearing. When shown to the section, only the remains of the eruption were visible.

Dr. Bulkley said that there must have been something more than syphilis in this case to account for the duration and the unusual appearance of the lesions, and called attention to their resemblance to those of blastomycosis.

Dr. Lapowski endorsed the suggestion of blastomycosis, and called attention to the fact that, as this disease improved under the use of potassium iodide, the improvement in this case under mixed treatment was no proof of its syphilitic nature.

Dr. Gottheil admitted the presence of an impetiginous element in the eruption, but did not accept the suggestion of blastomycosis.

A Case of Multiple Chancre.—Dr. Lapowski presented a man thirty years old who had had coitus eight weeks ago, and who at that time had an abrasion on the abdomen a little below the umbilicus. The patient showed when presented three lesions, each about the size of a twenty-five cent piece: one of thirty-five days' duration, at the site of the former abrasion on the abdomen, one of twenty-eight days' duration on the upper surface of the root of the penis, and a third of twenty days' duration on the anterior surface of the pendulous portion of the penis. All the lesions were hard to the touch, especially the one at the root of the penis and that on the abdomen. The lesion on the abdomen was round and sharply defined, the surrounding skin normal. The edges were sloping, the surface smooth, shiny red, and on pressure a serous fluid oozed out. The center was crateriform, with a yellowish-gray adherent membrane. The lesion on the root of the penis had the same characteristics, but it was harder to the touch, and the central part showed scar tissue. The lesion on the pendulous portion was not so hard, and had a narrow border with dry, bloody crusts. The central portion was covered with a detachable membrane, underneath which the surface was red and shiny. On the scrotum was a longitudinal abrasion of one day's standing. On the trunk a macular eruption was developing, which was not visible five hours before. In both inguinal regions were packets of hard, enlarged, painful glands. The mucous membranes were normal. Dr. Lapowski promised to report at the next meeting in regard to the presence or absence of spirochetes.

Case for Diagnosis.—Dr. A. R. Robinson presented a man, aged forty-nine years, a piano-maker by occupation. He had always enjoyed good health except when at the age of seventeen years he was ill for eleven months with "nervous gastric fever." On March 10, 1906, he was admitted to the German Hospital on account of an "eczema" and muscular rheumatism. For the cutaneous eruption chrysarobin was employed. About the beginning of March he noticed a few pimples in the inguinal region on the left side. They all disappeared except one, which continued to increase in size, and on account of which the speaker presented him before the section for diagnosis. The patient stated that at one time the growth became reduced in size to that of a bean. It was situated somewhat to the right of the middle of and above Poupart's ligament. The condition had not changed since he came under Dr. Robinson's observation six weeks ago. The lesion was

about one inch in diameter, sharply limited, elevated about one-quarter of an inch above the general surface, reddish in color, and with an erosive surface covered with a clear mucoserous exudation. There were no signs of ulceration or abscess formation. The lesion was quite firm and resistant on pressure. The clinical characters were very similar to some forms of hard chancre. The exudation showed only leucocytes and staphylococci and liquid exudate. A small portion was excised for microscopical examination. The diagnosis seemed to lie between a lesion from staphylococci or mycosis fungoides. The latter was regarded as not probable, on account of the history of the case. Dr. Robinson promised that the case would be carefully studied and reported upon later.

Dr. WISE said that he had seen this man at the New York Skin and Cancer Hospital about nine months ago. At that time he had a dry, scaly eruption on the scalp, while most of the rest of the body was covered with a moist eczematous eruption, which was believed to be the premycotic stage of mycosis fungoides. There was no tumor in the groin at that time. He saw the patient a week or two later at the German Hospital, where the first diagnosis was severe seborrhoic dermatitis, which was later changed to mycosis fungoides.

Dr. BULKLEY said he believed the case to be one of a very early stage of mycosis fungoides, with beginning ulceration. He thought that other tumors would develop before long.

Lupus Erythematosus Disseminatus.—Dr. L. DUNCAN BULKLEY presented two cases of this disease. The first patient was a woman twenty-five years of age. Her father was living, sixty-eight years of age, but suffering from a chronic cough and progressive loss of strength, following an attack of pneumonia eight years before. The rest of the family were well. The patient was married in September, 1903, and her only child was born in April, 1905, and died three months later of summer complaint. Her husband had been in the King's Park Insane Asylum since April, 1905, and was said to have a red, scaly eruption on his scalp. The patient had scarlatina and measles in childhood, but no other illness until the spring of 1904, when she had an attack of diarrhea with bloody stools, lasting about a week. The blood was bright red, but not clotted. There was a good deal of colicky pain and some tenesmus, but no continuous rectal pain, and no hemorrhoids. She had been subject to diarrhea ever since, especially after catching cold, but the later attacks had never lasted so long, and there had been no bleeding. Piles were first noticed about the time of the birth of her child, in April, 1905, soon after which she went to the King's County Hospital on account of severe steady pain in the lower part of the abdomen and in the pelvis. This was relieved, but returned again in a week or two, and was again relieved by internal medication without local treatment, and had not been felt since. In February, 1905, when seven months pregnant, she first noticed a swelling and redness of the upper lip. There were no papules at that time, not even a scale, and no constitutional symptoms, and after a few weeks the lesion disappeared. In February, 1906, she began to suffer from loss of appetite, languor, weakness, and headaches worse at night. Her hair began to fall, and she had chills, often quite severe, and usually occurring at night. After being sick a month she went to a physician, who she says gave her mercury, and after a week's treatment with him the present eruption developed, coming first on the lip, as it had done the year before, affecting the eyebrows about two weeks later, and spreading thence to the nose and cheeks, and then involving the fingers. There was still only redness and swelling; neither pimples nor scaling. Her general condition grew worse as the eruption developed, and in April she entered the King's County Hospital, having then a temperature of 104°. She said nothing was done for her there, but she improved, and was discharged after a month's stay, and remained in fair condition all summer, though not quite so strong as usual, and with a slight redness of the affected portions of the face and hands. Early in the fall, both constitutional and local symptoms increased again, and then for the first time scaling was noticed, and red pimples with white centers appeared, which on healing left deep pits. When she first came to the Skin and Cancer Hospital on November 14, 1906, she had typical lesions of lupus erythematosus on the eyebrows, cheeks, nose, and lip; and on the fingers red, shiny infiltrated masses, one-eighth to one-half inch across, thinning out toward the periphery, and sometimes beginning to scale in the middle, and occupying the skin itself, rather than forming papules or tubercles. Both the palmar and the dorsal surfaces of the fingers were affected. On the rest of the body the skin was clear. The hair was very thin and the scalp was scaly, with a few small ill-defined atrophic areas, but without typical lesions of lupus erythematosus. The inguinal, axillary, and cervical glands were enlarged, and the right epitrochlear gland was palpable. The breathing over the upper part of the chest behind was slightly roughened and the expiration prolonged, and a few subcrepitant râles were heard just above and internal to the right scapular spine. The abdomen was normal and not tender. While in the hospital the patient had no elevation of temperature. Although the symptoms and physical signs were not definite enough to make a positive diagnosis of latent tuberculosis, they might bear that interpretation. The treatment was a six per cent. lotion of resorcin up to November 24, after which date lotio alba of double strength was used. Internally she took one grain of iodoform three times a day up to November 28, when this was replaced by two drops of nitric acid in glycerine and water three times a day. The improvement had been considerable, the congestion in particular being greatly diminished. The second patient was a married woman thirty-eight years of age. Two of her sisters had died of tuberculosis, her mother and three brothers were living and well, her husband had died as the result of a fall. She had had occasional rheumatic pains in the joints for several years, but could tell of no other sickness until the spring of 1904, when she was in bed for two months with weakness, chilliness, feverishness, and eruption of vesicles around the lower part of one side of the chest, accompanied by a burning pain. The scars left by this eruption, which seems to have been herpes zoster, could still be seen. She said that in the early part of the attack she suffered for a week from diarrhea, with bloody stools and colicky pains. She had been losing flesh and strength ever since. About three months after the onset of the above illness she first noticed a red pimple on the right cheek, and within two months the disease spread to the other cheek, and then over the whole head, causing very great loss of hair. After that there was very little change, either in local or general condition, until May or June of 1906, when she was sick in bed with prostration, headaches, anorexia, vomiting, and feelings of chilliness and feverishness, and of great heat in the face. The eruption on the face grew worse at that time, and scabs appeared. Later the eruption appeared on the backs of the hands, spreading thence to the forearms and arms. When she came to the hospital in July, 1906, she presented a curious mixture of lesions, including a large number of superficial pustular bullæ, while the lesions on the arms and scalp were characteristic. She left the hospital much improved, but two or three weeks later, becoming overheated, she relapsed into the same condition as before, and returned. She had no elevation of temperature while in the hospital. Under treatment with nitric acid internally and soothing preparations externally, she had made marked improvement; still the spread of the disease over the back and chest occurred only a month ago. When she was presented before the section, the hair was very thin over the entire scalp, which was thin and

atrophic, but which showed few distinct scars. Above and behind each ear was a poorly-defined bald spot about two inches in diameter. The skin of the entire face was atrophic, reddened, scaly, with considerable rather dense scar tissue on each cheek, where also there were bloody crusts. Throughout the scar tissue on the face were many fine telangiectases. The atrophy was so marked that the mouth could not be opened wide. This condition extended into the chest and down the back to the lumbar region. On these parts the process seemed to be very superficial, and resembled a seborrheic dermatitis, but there was a considerable development of scar tissue in the older parts, the border was erythematous, and beyond the border were characteristic discoid patches. Over the posterior and external surface of the right arm, and the posterior surface of the right forearm, extending around the radial border to the anterior surface and reaching nearly to the ulnar border of the anterior surface in the middle third, and extending down on to the back of the hand, the skin was red, rough, slightly scaly, crinkly, and hot, and showed the development of scar tissue in places. The redness was more marked toward the border, which was raised, erythematous, limited internally by a line of scales attached by their outer margins, and passing externally into normal skin. There were numerous outlying islets of diseased skin. The left arm, forearm, and hand were similarly but less extensively affected. The right palm showed several erythematous spots, about a quarter to a half an inch in diameter, in the middle of which was a small depression left by the destruction of the superficial epidermis, the color being darker about these depressions. Similar spots of erythema with a darker center but without destruction of epithelium occurred on the left palm. Similar spots occurred on both the palmar and dorsal surfaces of the fingers. The lungs were normal. The cervical glands were enlarged. She had a slight cough, raising a little mucus in the morning, but so slight that she disregarded it.

Dr. Pollitzer said he had never seen so extensive a case of erythematous lupus as that in the older woman, and that while the disease appeared fairly often on the backs of the fingers, he believed the lesions on the palms to be unique.

Dr. Gottheil agreed with Dr. Pollitzer. He had never seen erythematous lupus upon the palms, and could not recall ever having seen a report of such a case. He felt very hopeless about the treatment. In the great majority of cases that are cured the lesions must be replaced by scar tissue, and he therefore applied trichloracetic acid or some similar caustic at once, in order to cause destruction of the diseased tissue.

Dr. Dillingham said that in certain superficial forms, like that on the older woman's back, the diagnosis from eczema might be very difficult.

Dr. Williams said that the dense scar tissue on the older woman's cheeks and a few of the small nodules were very suggestive of lupus vulgaris, while some of the papules on the younger woman were suggestive of acnitis, and called attention to the relation of these facts to the theory of the tuberculous origin of lupus erythematous.

Dr. Bulkley, closing the discussion, said that he believed that the great loss of hair in both cases was due, in part at least, to a coincident seborrheic dermatitis, which he believed accounted also for part of the eruption on the older woman's back. Both patients were being treated with nitric acid internally, and both showed marked improvement, though the treatment was purely empirical.

Tuberculosis of the Tongue.—Dr. Lapowski presented this patient, who had been shown before the Section on October 2. Since that time he had given him injections of calomel and of salicylate of mercury, and the improvement in the tongue had been very great indeed.

Dr. Lapowski also reported that the woman shown at the same meeting as a case of tuberculide had received two injections of tuberculin, but that she had shown no reaction to it. The man shown at the meeting of October 30 as a case of tuberculide had received injections of calomel and of salicylate of mercury, and he had improved, but after the injections a few new papules had appeared.

Dr. Pollitzer reported that he had examined sections from the case of multiple tumors in the skin shown by Dr. Lapowski at the preceding meeting, and that they were typical of neurofibroma.

Chicago Medical Society.

At a meeting held November 28, 1906, Dr. Arthur R. Elliott read a paper entitled "Clinical Observations on Blood Pressure in Arteriosclerosis and Bright's Disease, with Suggestions Regarding the Therapeutic Control of Persistent High Blood Pressure," in which he stated that after making due allowance for physiological variations the normal limits of the blood pressure range was from 105 mm. to 140 mm. of mercury. He reported observations on thirty cases of typical advanced arteriosclerosis. The average age of the patients was sixty-one years, and the average maximum systolic blood pressure 148 mm. In fourteen cases (47 per cent.) the blood pressure fell within the normal range. In sixteen cases (43 per cent.) it was persistently above normal, and in six of these latter there was positive hypertension (over 170 mm.), each case displaying evidence of aortic atheroma. The points brought out by his observation in arteriosclerosis were the frequency with which it is not attended by elevation of blood pressure, and the necessity for using the sphygmomanometer in all cases to determine this point, owing to the impossibility of detecting high blood pressure in sclerotic vessels by the unaided finger. The writer called attention to the frequency of chronic nephritis in arteriosclerosis, and the necessity for carefully excluding this factor in high-tension cases. He referred to the researches of Hasenfeld and Hirsch as to the relative involvement of the abdominal arteries and aorta in cases with and without tension, and concluded his consideration of arteriosclerosis with the statement that in any given case of arteriosclerosis the degree of involvement of the superficial vessels is no criterion of the severity of the vascular disease, and that in cases marked with high tension, where chronic nephritis can be proved not to exist, arteriosclerosis of the splanchnic area or of the aorta above the diaphragm is to be suspected. Dr. Elliott also reported blood pressure observations in 60 cases of chronic Bright's disease, as follows: Males, 34; females, 26; average age, 51 years; average weight, 160 pounds; average maximum systolic blood pressure, 190 mm.; maximum recorded in series, 285 mm.; minimum in any case, 110 mm. The essayist reviewed the investigation somewhat in detail, showing that no constant ratio existed between the height of the blood pressure and the amount of albuminuria, the highest average systolic pressure being observed in cases without albumin in the urine. No definite relationship exists between the amount of urine and the height of the blood pressure, a pressure of 285 mm. coinciding with 1,000 c.c. of urine, and, on the other hand, low pressure being observed with a copious polyuria. Attention was directed to the diagnostic value of high pressure reading in nephritis. A pressure of 200 mm. or over should awaken suspicion of nephritis, and necessitate the elimination of this factor beyond doubt before any other diagnosis is accepted. The essayist then proceeded to discuss the management of high pressure cases. He reviewed the pathogenesis of hypertension, pointing out the secondary nature of this symptom and its dependence on systemic toxemia. Reference was made to the greater degree of comfort enjoyed by the nephritic with high tension than by the patient with Bright's disease who had low tension. Inasmuch as the cardiovascular sequence was a reaction against toxemia, he regarded it as

a compensatory, and, from the physiological viewpoint, to some extent a conservative process. Owing to the liability of hypertension to cause serious and often fatal developments, such as apoplexy, cardiac failure, etc., it often requires regulation. The basis of all true procedure in this direction lies in reducing toxemia by regulation of the patient's diet, fluid intake, hygiene, etc., and the main dependence is to be placed on these measures. Increasing tendency is apparent to administer vasodilators for the reduction of excessive blood pressure. This the essayist takes exception to, and advises the utmost caution in procedure along this line. Reduction by drugs is occasionally rendered imperative by serious symptoms, such as angina pectoris, apoplexy prodromes, etc., and under such conditions nitrites, etc., may be freely administered for their temporary effects. As a routine procedure for the regulation of hypertension, vasodilators are seldom justifiable, and when employed should be very cautiously and slowly introduced, watching meanwhile the pulse rate and subjective comfort of the patient as indications of good effect, rather than the degree of reduction in the blood pressure record. The best results are evidenced by a reduction and steadying of the pulse and an increase in the bodily comfort of the patient. A marked fall in blood pressure, which is more than temporary, following the institution of vasodilator medication, is apt to have an unfavorable significance, as it implies a weak heart. The essayist strongly urges greater care and discrimination in the use of medicinal vasodilators in high-tension cases

Books Received.

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MANUEL D' HISTOLOGIE PATHOLOGIQUE. 8vo, 1171 pages, illustrated, paper. Felix Alcon, Editeur. Paris.

THE TREATMENT OF DISEASES OF THE DIGESTIVE SYSTEM. By ROBERT SAUNDBY, M.D., M.Sc., LL.D., F.R.C.P. 12mo, 133 pages. J. B. Lippincott Company, Philadelphia.

KLINIK FUR PSYCHISCHE UND NERVÖSE KRANKHEITEN. HERAUSGEGEBEN VON ROBERT SOMMER. I Band, 4 Heft. Verlag von Carl Marhold, Halle a. s.

THIRTY-SEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS. 8vo, 626 pages, muslin. Wright & Potter Printing Co., Boston.

INTERNATIONAL CLINICS. Edited by A. O. J. KELLY, A.M., M.D. Volume III., Sixteenth Series, 1906. 8vo, 302 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

LECTURES OF THE CHAUTAUQUA SCHOOL OF NURSING. 4to, illustrated, muslin. Published by the School.

AN INTRODUCTION TO PHYSIOLOGY. By WILLIAM TOWNSEND PORTER, M.D. 12mo, 587 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

PEDIATRICS (VOL. VII. OF THE PRACTICAL MEDICINE SERIES). Edited by ISAAC A. ABT, M.D. 12mo, 267 pages, illustrated, muslin. The Year Book Publishers, Chicago. Price, $1.25.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY for 1907. New revised edition. 16mo, flexible leather. William Wood & Co., New York.

THE INTEGRATIVE ACTION OF THE NERVOUS SYSTEM. By CHARLES S. SHERRINGTON, D.Sc., M.D., etc. 8vo, 411 pages, illustrated, muslin. Charles Scribner's Sons, New York.

SURGERY, ITS PRINCIPLES AND PRACTICE. By various authors, edited by WILLIAM WILLIAMS KEEN, M.D., LL.D. Volume I, 8vo, 983 pages, illustrated, muslin. W. B. Saunders Company, Philadelphia. Price, $7.00.

THE DISEASES OF CHILDREN, MEDICAL AND SURGICAL. By HENRY ASHBY, B.A., M.B. Oxon., F.R.C.S. Eng., and G. A. WRIGHT, B.A., M.B. Oxon, F.R.C.S. Eng. Fifth edition, thoroughly revised. 8vo, 020 pages, illustrated, muslin. Longmans, Green & Co., New York.

OPERATIONEN AM OHR; DIE OPERATIONEN BEI MITTELOHREITERUNGEN UND IHREN INTRAKRANIELLEN KOMPLIKATIONEN. Für Aerzte und Studierende, von Dr. B. HEINE. Verlag Von S. Karger, Berlin. 4to, 197 pages, paper.

Therapeutic Hints.

Conjunctivitis.—

℞ Sol. adrenalin. chlor. 1-1000.....5ss
Sod. biborat.....gr. v
Sol. acid boracici 3 per cent.....5i
Aq. camph.....5ii
M. S. Eye lotion.

Pruritus Vulvæ.—

℞ Acid. horici.....gr. iii
Acid. carbolici.....gr. iii
Morph. hydrochlor.....gr. i
Lanolin.....oz. ii
M. Ft. Ung. S. Apply locally.

—*Buffalo Medical Journal.*

Migraine.—

Caffeinæ 0.25
Sodii salicyl..... 0.5
Cocainæ hydrochlor..... 0.02
Aquæ 30.0
Syr. simplicis.....10.0
M. S. Take at a dose.

—BJORKMANN.

Pharyngitis in Scarlatina.—D. R. Lucy recommends:

℞ Tr. ferri chlor.....5ii
Pot. chlorat.....5i
Glycerini.
Aquæ .....ãã q.s. ad. 5iv
M. S. A teaspoonful every two hours.

—*Denver Medical Times.*

Gastric Hyperacidity.—Salisbury uses the following:

℞ Sodii sulph.....50.0
Sodii bicarbonat.....20.0
Sodii chloridi.....10.0
M. S. One to two teaspoonfuls in a glass of hot water before breakfast.

—*Therapeutic Record.*

Periostitis.—Van Buren and Keys recommend:

℞ Potass. iodid.....5ij
Ammon. iodid.....5j
Tr. cinchonæ comp.....5iij
M. S. A teaspoonful well diluted with water after eating.

—*Medical Review of Reviews.*

Tonsillitis.—

Pot. bicarb.....5iv
Spt. menth. pip.
Spt. camphoræ .....ãã 5ss
Aq. ferv.....5iv
S. Use hot; gargle every hour.

—*Wisconsin Medical Journal.*

Colitis in Pneumonia.—For this complication Musser uses:

℞ Beta naphthol.....1.50
Bismuth, subnitrat.....3.0
M. Ft. capsule No. X. S. One capsule every four hours.
Or the following:
℞ Acid carbol..... 1.0
Bismuthi subgal 8.0
Mucilag. acaciæ.
Glycerini.
Aq. menth. pip.....ãã q.s. ad. 60.0
M. S. One teaspoonful every three hours.

Furunculosis.—Le Gendre gives internally the following:

℞ Beta naphthol.
Bismuthi salicylat.
Mag. carb.....ãã gr. v
M. S. Give at a dose every four hours.

—*Union Médicale.*

Bronchitis in Children.—

℞ Tr. opii camph.....5i
Syr. ipecac.....mxxxii
Syr. tolutan.....5ii
M. S. Teaspoonful every three hours.

—KOPLIK.

Indigestion.—

℞ Tr. capsici.....mxvi
Tr. nucis vomicæ.....5ii
Tr. gent. comp.....ad 5ii
M. S. A teaspoonful in water three times a day.

—DA COSTA.

Menorrhagia.—

℞ Ext. hydrastis fl.
Ext. hamamelidis fl.....ãã 5iiss
Ext. viburni fl.....5iss
M. S. Twenty drops in water three times a day.

—*Le Progrès Médical.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

KANSAS STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION.

October 9, 1906.

ANATOMY AND HISTOLOGY.

1. Locate the brachial plexus and its branches, naming the latter.
2. Describe the medulla oblongata.
3. Locate and describe a femoral hernia and name its coverings, beginning with the surface.
4. Describe the intestinal tract and name its divisions.
5. Locate and describe the omentum, giving the histology of the same.
6. Describe the vulvulæ conniventes.
7. Locate and describe the pancreas, giving its histology.
8. Give the histology of the arteries. Does it differ from the histology of the veins? If so, how?
9. Describe the sympathetic nerve, naming its divisions, and number of ganglia in each.
10. How many bones are there in the human skeleton?

CHEMISTRY AND TOXICOLOGY.

1. What is galvanism?
2. How can it be demonstrated that hydrogen is lighter than air?
3. What is analysis and what is synthesis?
4. What is the effect of inhaling air rich with ozone on the respiratory organs?
5. In what manner does arsenic prove poisonous?
6. How does CO act as a poison?
7. What is the action of KOH on the tissues?
8. What is the antidote for acute poisoning by $HgCl_2$?
9. What is the reaction of blood during gout?
10. What is Trommer's test for sugar in urine?

OBSTETRICS.

1. Write a page on deformities of the pelvis.
2. What would you do in a case of postpartum hemorrhage?
3. How would you treat a case of hour-glass contraction?
4. Write a page on puerperal eclampsia.
5. How would you treat a case of pelvic cellulitis?
6. Into how many stages is labor divided?
7. How would you treat a case of face presentation?
8. How would you treat a case of adherent membranes?
9. Write a page on the use of the forceps.
10. How would you treat fibroid tumors of the uterus?

PATHOLOGY.

1. Define gangrene.
2. What is a sarcomatous tumor? Give its pathology.
3. Define chronic gastritis and give its pathology.
4. Give symptoms, etiology, pathology, diagnosis and prognosis of herpes zoster.
5. Give symptoms, etiology, and prognosis of erysipelas.
6. Give etiology, symptoms, diagnosis, and prognosis of neuritis (multiple).
7. Define lithemia.
8. Define purpura hæmorrhagica.
9. Give differential diagnosis of septicemia and pyemia.
10. Describe the pathology of rachitis.

BACTERIOLOGY.

1. How do bacteria multiply?
2. What is essential to the life of bacteria?
3. Name and describe the malarial parasites.
4. What disease does the bite of an infected *Stegomyia fasciata* produce?
5. Name five culture media.
6. Name and describe the pus-producing germs.
7. Describe Widal's test for typhoid fever.
8. What are leucocytes, and what occurs when they come in contact with pathogenic bacteria?
9. What are ptomaines and toxins?
10. What are sterilization, antiseptics, disinfectants, and germicides?

PHYSIOLOGY.

1. What are the functions of the spinal cord?
2. What is the origin of urea and of uric acid?
3. (a) Describe the vasomotor nervous system and explain its functions. (b) Where is the vasomotor center located?
4. (a) Give the function of the suprarenal glands. (b) What is result of their extirpation?
5. What kind of membrane lines the mastoid cells, and why?
6. Explain the portal circulation.
7. (a) What are the functions of bile? (b) Give its constituents.
8. Describe the pleuræ, giving kind of tissue and functions.
9. (a) Give functions of the cerebellum. (b) What is the result of its extirpation?
10. Give the functions of the medulla oblongata. (a) Name the "centers" located in the bulb.

SURGERY.

1. What class of patients take ether better than chloroform, and why? What class take chloroform better, and why?
2. What are the signals of danger in general anesthesia?
3. How would you treat a suppurating cavity of the thorax?
4. What is the proper surgical treatment of a chronic varicose ulcer of the leg? Give details.
5. What is osteoplasty, and in what part of the body is it most frequently called for? Give an example.
6. Give the cause and treatment of *painful* cicatrix, *adherent* cicatrix, *contracted* cicatrix, and *exuberant* cicatrix.
7. What kinds of tumors are most safely removed? What kinds are the least safely removed?
8. How would you treat an ingrowing toenail? Give full details.
9. What is the best surgical treatment for hemorrhoids? Give details.
10. What bone in the body is frequently fractured and is the most difficult of all bones to reunite by bony union? How should it be treated when fractured? Give details.

OPHTHALMOLOGY, OTOLOGY, RHINOLOGY, AND MEDICAL JURISPRUDENCE.

1. Name some causes of ozena.
2. Discuss the pathological characteristics of nasopharyngeal adenoids.
3. Define strabismus. What causes it?
4. Describe the crystalline lens and give its relations.
5. The vast majority of all the diseases of the ear have their origin in inflammations of what particular membrane?
6. Prescribe for chronic case of otitis media purulenta.
7. Nasal polypi—give diagnosis and surgical treatment.
8. What do you understood by medical jurisprudence?
9. What constitutes a dying statement, and what conditions are necessary to make it admissible as evidence in a court of justice?
10. Give diagnostic symptoms between diphtheria and follicular tonsillitis.

THEORY AND PRACTICE.

1. Write a page on epidemics.
2. Write a page on the treatment of typhoid fever.
3. Give diagnosis and treatment of scarlet fever.
4. Give treatment of erysipelas.
5. Give diagnosis and treatment of rickets.
6. Give diagnosis and treatment of acute laryngitis.
7. Write a page on pneumonia.
8. Describe the different murmurs of the heart and tell what they indicate.
9. Give treatment for acute peritonitis.
10. Write a page on Bright's disease.

MATERIA MEDICA.

1. In what disease is opium used principally?
2. Name the excitomotors.
3. What are the preparations and doses of conium?
4. Is ether ever used as a cardiac stimulant?
5. How should poisoning by digitalis be treated?
6. What are the medicinal uses of ipecac?
7. What substances are incompatible with belladonna?
8. What are the effects, uses, and doses of calcium chloride?
9. What are the preparations and doses of gold salts?
10. Name the mineral tonics.

*It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Kansas State Board of Medical Registration and Examination.

October 9, 1906.

CHEMISTRY AND TOXICOLOGY.

1. By the term Galvanism is meant current electricity derived from chemical action, in opposition to that produced by heat or induction. The term is no longer used scientifically; but is laxly employed to denote the constant current as distinguished from the induced current (which is sometimes called Faradism or Faradization).

2. Soap-bubbles or a toy balloon, if filled with hydrogen gas, will rise rapidly in the air.

3. *Analysis* is the splitting up of a compound into its elements or into simpler compounds. *Synthesis* is the building up of a compound from elements or from simpler compounds.

4. It causes severe coryza and hemoptysis.

5. By the ingestion of flypaper, or the water in which it has been placed, poisoning by *elementary arsenic* may be caused. By the inhalation of hydrogen made from zinc and sulphuric acid containing arsenic, poisoning by *Arsin* may be produced. *Arsenic trioxide* can cause poisoning by being absorbed from the mouth, stomach, rectum, vagina, or urethra; or by absorption from the skin in the use of parasiticides or cancer cures containing arsenic; also by inhalation of dust from wallpapers containing arsenic; from clothes dyed with arsenic; and by the ingestion of rat poisons, etc.

6. By uniting with the hemoglobin of the blood and forming a more stable compound than oxyhemoglobin. In this way the power of the red corpuscles to carry oxygen from the air to the tissues is destroyed; and asphyxia is thus produced.

7. It acts as a caustic on living tissues; and disintegrates all tissues, whether dead or alive.

8. White of egg, in not too large a quantity, and followed by an emetic.

9. Alkaline; but the degree of alkalinity may be lowered, and uric acid crystals may be found in the blood.

10. Place in a test tube some urine free from albumin; add a few drops of a solution of cupric sulphate, and then some liquor potassæ (about half as much as the urine); shake and boil. A yellow or red precipitate is formed in the presence of sugar.

OBSTETRICS.

3. First, give a hypodermic of morphine and atropine, or a dose of chloral or an anesthetic, and then, with one hand in the vagina, gently introduce the index and middle fingers into the uterus and through the constricting band. After a time the resistance of the constriction will be thus overcome. By pressing the uterus downward, the fingers and the border of the placenta are brought in contact. Effort is then made to bring part of the placental mass through the constriction; the placenta being removed as in case of adherent placenta.

5. The vagina should be made as aseptic as possible, by means of vaginal douches of bichloride of mercury 1:2,000. The vaginal vault and the cervix uteri can then be painted with tincture of iodine; sometimes the insertion of a vaginal suppository containing about thirty grains of iodoform is of benefit. In case suppuration occurs, the abscess should be opened; if it bursts into the rectum or vagina, measures must be instituted for drainage and disinfection. Very frequently an abdominal operation is necessary. Antipyretics should be given for the fever; and for the pain cold compresses or ice bags should be applied to the perineum and lower part of the abdomen.

7. If the chin is presenting anteriorly, expectant treatment may suffice; but care must be taken to observe that the chin does not rotate backwards. Spontaneous version may occur, and the presentation become a vertex one. Failing this, or as a means of favoring this, postural treatment, such as Walcher's position, has been recommended. If, in spite of this, engagement has not occurred, cephalic version is indicated, care being taken not to rupture the membranes. If this is not successful, podalic version should be tried. If, after all these manipulations, the child is still alive and the head is engaged, symphyseotomy is indicated; if the child is dead, craniotomy should be performed.

PATHOLOGY.

1. Gangrene is the complete and permanent loss of vitality in a considerable area of tissue.

2. A sarcomatous tumor is one arising from connective tissue, with excessive cell formation and very little intercellular substance. The cells are either embryonic or imperfectly developed connective tissue cells. Sarcomata are always mesoblastic in origin; their blood supply is abundant, and it is through this channel that they are disseminated; of their lymphatics and nerve supply nothing is known. In gross appearance sarcomata are of a more or less homogeneous nature, the color depending upon the quantity of blood present; occasionally a milky fluid can be expressed, but there is never anything corresponding to the "cancer-juice" of carcinomata. Sarcomata may undergo various secondary changes, such as fatty degeneration, hemorrhages, and mucoid softening. Sarcomata are malignant, hence they have a tendency to spread to distant organs (metastasis), are heterologous, have no definite limiting capsule, tend to infiltrate the surrounding tissues, tend to recur after removal, and cause cachexia and death. They have been classified in a variety of ways: (1) according to the *cells*, as round cell sarcoma, spindle cell sarcoma, giant cell sarcoma, mixed cell sarcoma; (2) according to the *stroma*, as fibrosarcoma, myxosarcoma, chondrosarcoma, osteosarcoma; and (3) according to *secondary changes*, as melanosarcoma, liposarcoma, chloroma.

7. Lithemia is a condition due to imperfect metabolism, and is characterized by an accumulation of uric acid or urates in the blood. It differs from gout in the absence of joint involvement.

8. Purpura Hæmorrhagica is a disease of unknown origin, and is characterized by hemorrhages into the skin and mucous and serous membranes, and usually runs a rapid and fatal course.

9. *Septicemia* begins with a rigor, followed by a rise of temperature up to about 104° F., which remains constant. The pulse is weak and progressively rapid; there is anorexia and constipation, which is followed by diarrhea; the urine contains albumin; the temperature may become subnormal. There are no repeated rigors and no secondary (metastatic) abscesses. *Pyemia* begins with a rigor, which may last for half an hour, and is repeated every one or two days. The temperature rises as in septicemia, but rapidly falls, and at the same time the patient suffers a profuse perspiration. The pulse is weak and rapid; there is anorexia; and there may be delirium, with jaundice and signs of abscesses in the lungs, joints, etc. In pyemia there are repeated rigors and secondary abscesses.

BACTERIOLOGY.

1. Bacteria multiply by fission and by sporulation.

2. Most bacteria require (1) proper temperature, generally at or near that of the body; (2) oxygen is generally needed, those that cannot live without it being called aërobic, and those that can grow without it, anaërobic; nutriment of a proper kind, containing both organic and inorganic material; a slight degree of moisture; a medium of slightly alkaline reaction; and rest. Individual bacteria may require modifications of the above essentials.

4. Yellow fever.

5. Gelatin, agar, potato, bouillon, and blood-serum.

6. The pus-producing bacteria are: staphylococcus pyogenes aureus, staphylococcus pyogenes albus, staphylococcus pyogenes citreus, staphylococcus cereus aureus, staphylococcus cereus albus, staphylococcus cereus flavus; streptococcus pyogenes; micrococcus tetragenus, micrococcus pyogenes tenuis; gonococcus; pneumococcus; bacillus pyocyaneus, bacillus typhosus, and bacillus tuberculosis.

8. Leucocytes are white blood corpuscles. When they come in contact with pathogenic bacteria, if the conditions are favorable, they devour and destroy the bacteria (phagocytosis); sometimes, however, the bacteria manage to destroy the leucocytes.

9. *Ptomaines* are the putrefactive products of dead animal tissues or fluids.

Toxins are the products of pathogenic bacteria or of ptomaines or leucomaines, and are actively poisonous.

10. *Sterilization* is the process of freeing a substance from the live bacteria that may be on it or in it.

Antiseptics are agents which prevent or restrain putrefaction.

Disinfectants are agents which restrain infectious diseases by destroying or removing their specific poisons.

Germicides are agents which destroy bacteria and their germs.

PHYSIOLOGY.

1. The functions of the spinal cord are: (1) the conduction of nerve impulses; (2) reflex action; (3) coordination; it also contains special centers which preside over definite functions.

2. *Urea* is derived from the nitrogenous food ingested; it is manufactured by the cells of the liver.

Uric acid: "In man uric acid has a twofold origin; one portion, coming from the breaking down of the nuclein-containing tissues or cell elements of the man's own body, and hence is of endogenous origin, while the other portion —usually the larger—is of exogenous origin, coming from the transformation of free and combined purin compounds present in the food." (Chittenden.)

3. The vasomotor nervous system consists of (1) a vasomotor center in the bulb, (2) of some subsidiary centers in the spinal cord, and (3) of vasomotor nerves, which are of two kinds: (*a*) those causing constriction of the vessels, and so-called vasoconstrictor nerves; and (*b*) those causing dilatation of the vessels, and so-called vasodilator nerves. These nerves supply the muscle tissue in the walls of the blood-vessels and regulate their caliber, thus influencing the *quantity* of blood supplied to a part; at the same time they regulate the *quality* of blood supplied to a part; they also regulate the *nutrition* of a part, also *secretion* and *heat production*. They are concerned, too, in the control of the heart-beat. The center is in the medulla, in the floor of the fourth ventricle, near the calamus scriptorius.

4. The function of the suprarenal glands is unknown; it is supposed that they are able to destroy or remove some toxic substance produced elsewhere in the body. Removal of these glands is rapidly followed by death.

5. The mastoid cells are lined by epithelium, continuous with that of the tympanic cavity.

7. The functions of the bile are: (1) to assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach, and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

The constituents of the bile may be shown in the following table, which presents the averages of three analyses given by Hammarsten; the results are given in parts per thousand:

Water	971.380
Solids	28.620
Mucin and pigments	4.910
Bile salts	12.107
Taurocholate	2.431
Glycocholate	9.766
Fatty acids from soaps	1.200
Cholesterin	1.243
Lecithin and fats	0.970
Soluble salts	7.360
Insoluble salts	0.317

9. The functions of the cerebellum are: (1) coordination, (2) equilibrium. Removal of the cerebellum causes loss of these functions.

10. The functions of the medulla are: (1) Conduction of nerve impulses and impressions, (2) as an independent reflex center.

The "centers" located in the bulb are: (1) center for mastication, (2) for secretion of saliva, (3) for sucking, (4) for deglutition, (5) for vomiting, (6) for voice, (7) center for expression (8) cardiac centers, (9) respiratory centers, (10) vasomotor centers.

SURGERY.

2. The danger signals are: (1) lividity or extreme pallor of the face, (2) feeble, irregular, or intermittent pulse , (3) slow and shallow respiration, (4) dilatation of the pupils during deep narcosis.

5. By osteoplasty is meant the transplantation of bone (with periosteum). It is most frequently performed on the skull.

6. *Painful cicatrix* is caused by the pressure of a contracting cicatrix upon the cut end of a nerve or by the inclusion of a nerve in the scar of an amputation stump. In the former case the painful part should be excised; in the latter the stump must be opened and the end of the affected nerve removed.

Adherent cicatrix is caused by simultaneous injury (such as burns or scalds) to contiguous and approximated parts, such as the fingers, or the pinna and the side of the head. A plastic operation is indicated.

Contracted cicatrix is most apt to occur in the flexure of a joint; a serious burn of the hand may cause flexion-contracture of the fingers. The treatment is to divide the cicatrix, dissect out the scar, and follow with skin-grafting.

Exuberant cicatrix consists of a hyperplasia of scar tissue, it is most often found in tuberculous patients, and is of unknown etiology. Excision is useless, as it is very apt to recur. Sometimes it disappears spontaneously.

10. The patella. It is best treated by open operation and wiring.

OPHTHALMOLOGY, OTOLOGY, RHINOLOGY, AND MEDICAL JURISPRUDENCE.

1. (1) Atrophic nasal catarrh, due to syphilis, glanders, caries, or necrosis of the nasal bones; (2) ulcers of a syphilitic, lupoid, or tuberculous origin; (3) foreign bodies and new growths in the nose or nasopharynx.

2. Adenoids consist of lymphoid tissue, which is composed of masses of round cells held together by connective tissue. Mucous glands may be found in the deeper parts of the lymphoid tissue; and the whole is covered with ciliated columnar epithelium.

3. Strabismus, or squint, is a condition in which the lines of sight of the two eyes are not directed towards the same object of vision.

The *causes* are: (1) disturbances of equilibrium of the ocular muscles; (2) errors of refraction; (3) opacities in the cornea or lens; (4) intraocular disease.

5. The membrana tympani.

6. R. Acidi borici ..... gr. xxx
Zinci sulphatis ..... gr. xvj
Glycerin ..... ʒij
Aquæ destillatæ ..... ʒij. M.

Sig. A few drops to be instilled into the ear several times a day.

8. Medical jurisprudence is the application of the knowledge of any of the branches of medicine to the problems and requirements of the law.

9. Any statement made by a dying person who believes that he cannot recover and that he is, at that very time, in actual danger of death. The statement need not be sworn to; it should be voluntary and sincere; and it is admissible as evidence in a court if the individual dies.

10. In *diphtheria* the onset is more gradual; the temperature rises to about 101° to 103° F.; the tonsils are not much enlarged; there is an exudate of a thick grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon re-forms and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Löffler bacilli may be found.

In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white cheesy spots or plugs, which consist of broken-down epithelium, and are easily brushed away; Klebs-Löffler are not found.

THEORY AND PRACTICE.

8. (1) A systolic murmur, soft and blowing, heard best at the apex, and transmitted to the left axilla and toward the angle of the left scapula, indicates mitral regurgitation. (2) A presystolic murmur, harsh and rough, heard best very near the apex, and not transmitted, denotes mitral stenosis. (3) A diastolic murmur, soft, heard best in the second right intercostal space, and transmitted down the sternum or toward the apex, denotes aortic regurgitation. (4) A systolic murmur, harsh, heard best in the second right intercostal space, and transmitted into the carotids, denotes aortic stenosis. (5) A systolic murmur, heard best over the lower end of the sternum, denotes tricuspid regurgitation. (6) A presystolic murmur, heard best over the ensiform cartilage, and not transmitted, denotes tricuspid stenosis. (7) A diastolic murmur, heard best in the second left intercostal space, denotes pulmonary regurgitation. (8) A systolic murmur, heard best in the second left intercostal space, and not transmitted to the large vessels of the neck, denotes pulmonary stenosis. (9) A murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a hemic or functional murmur, and denotes as a rule an impoverished condition of the blood.

MATERIA MEDICA.

1. In diabetes; particularly diabetes mellitus.

2. Nux vomica and ignatia (and their alkaloids strychnine and brucine), thebaine, ammonia, ether, chloroform, opium, ergot, alcohol in small doses.

3. Conium, three grains; fluid extract of conium, three minims.

4. Yes; on account of the rapidity of its action, ether is a very valuable cardiac stimulant.

5. The patient must be kept in the recumbent position; the stomach should be washed out with infusion of tea; give stimulants and keep the patient warm; tannic acid may be given, as the chemical antidote; and tincture of aconite, as the physiological antidote.

6. Ipecac is used externally as an antiseptic, in cases of anthrax. Internally as a stomachic, an expectorant, an emetic, a diaphoretic, and a cholagogue. It is given in cases of dyspepsia, dysentery, bronchitis, asthma, croup, and in the vomiting of pregnancy.

7. The caustic alkalies are incompatible with belladonna.

8. It is an irritant; applied externally it hastens the coagulation of the blood and makes a firmer clot. It is used

in cases of gastric catarrh and fermentative dyspepsia, in hematemesis and hemoptysis, in glandular swellings of tuberculous patients. It has also been employed in the treatment of pneumonia and phthisis. The dose is seven and a half grains.

9. Auri et sodii chloridum is the only official gold salt; dose, one-tenth of a grain.

10. Iron, manganese, arsenic, bismuth, and phosphorus.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Feb	1-6
Arizona*	Ancil Martin, Phoenix	Phoenix	January	7
Arkansas*	F. T. Murphy, Brinkley	Brinkley	January	8
California	Chas. L. Tisdale, Alameda	San Francisco	April	16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	12
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W.C.Woodward, Washington	Washington	January	10
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L Conant, Jr., Genesee	Boise	April	2
Illinois	J. A Egan, Springfield	Chicago	January	16
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. F. Kennedy, Des Moines	Des Moines	March	19
Kansas	T. E. Raines, Concordia	Topeka	Feb.	12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm J. Maybury, Saco	Portland	March	5
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	12
Michigan	B. D Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linier, 24 South Fourth Street, Minneapolis	St. Paul	January	7
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City		
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L Lee, Carson City	Carson City	February	4
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C.F.Wheelock Univ.of State of New York, Albany	New York, Albany, Syracuse. Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	2
Ohio	Geo. H Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	March	—
Oregon*	B. E. Miller, Portland	Portland	April	—
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June	—
Rhode Island	G. T Swarts, Providence	Providence	April	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H E. McNutt, Aberdeen	Sioux Falls	January	9
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	January	7
Vermont	W. Scott Nay, Underhill	Montpelier	January	8
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Spokane	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Milwaukee	January	8
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States.
†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Pennsylvania.—As a result of the recent examinations held by the Pennsylvania State Board of Medical Examiners licenses to practise medicine were granted to 91 of 122 applicants.

Illinois.—On January 16, 17, and 18, 1907, the Illinois State Board of Health will hold an examination for license to practise medicine at the Great Northern Hotel, Chicago. The applicant must present a diploma from a medical college in good standing. Application must be made to the Secretary, Dr. James A. Egan, Springfield, Ill., and a card of admission to the examination secured. Students who are to graduate in 1907 will be required to present documentary evidence of preliminary education.

Virginia.—The Medical Examining Board of this State will reciprocate with boards of other States, but requires that every applicant claiming such recognition shall in person present with his petition a diploma from a reputable medical college, together with an attested certificate from a State Medical Examining Board having equal requirements with the Virginia Board, and willing and authorized to give similar recognition to those who hold Virginia certificates. Applicants complying with the above conditions and paying the usual fee, will be granted a certificate. The Medical Examining Board of Virginia declines to recognize the diploma of any college which does not conform to the requirements of the Association of Medical Colleges.

Medical Items.

Influence of Diet in the Treatment of Eczema.—A. Ravogli says that next to the kidneys the skin must be considered as an organ of elimination. Indeed it has more eliminating power for some products than the kidneys themselves. The occurrence of eruptions after the ingestion of certain foods is not accidental. The skin is active in eliminating substances which are detrimental to the general economy. The presence of toxic elements in the skin impairs its nutrition. Relapsing forms of acute eczema of the face which have been considered as nervous eczema often result from the ingestion of questionable foods. Individuals subject to eczema should subsist upon good, wholesome home cooking. The food should be fresh and not of a questionable nature. When products of fermentation develop in the stomach or in the intestines it must be admitted that there is a diseased condition of the functional activity of these organs. There is usually a catarrhal condition of the mucosa of the stomach or a nervous condition which brings about dyspepsia. The same conditions are present in the intestines. The diet in such cases must protect the parts as much as possible and eliminate nonirritating qualities. Food which leaves the smallest possible residue should be eaten. The writer believes that a coarse diet is better than a light diet. He advises the use of graham and rye bread together with honey, fruit juices, stewed plums, leguminous plants, boiled and baked potatoes; plenty of fresh milk, cream, and butter are also advised. Meats, beef, veal, fresh pork, boiled ham, chicken with plenty of vegetables are to be given without fear, as well as fresh white fish, trout, and so forth. Dark meats, venison, corned beef, mackerel, lobster, eel, and strong cheese are forbidden. Candies and sugar must not be taken. Certain obstinate cases of eczema of the face are due to the use of whiskey and chewing tobacco. Fresh country air and natural mineral spring waters are very helpful in the treatment of these cases. The influence of diet on the treatment of eczema in gouty people is almost incredible. The writer believes that obstinate infantile eczema instead of being due to the cutting of the teeth is rather due to the erroneous feeding of the child. In most of these little patients there is present a condition of enterocolitis.—*The Dietetic and Hygienic Gazette.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended December 28, 1906.

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
District of Columbia, Washington	Dec. 9–15	1	1
Georgia, Augusta	Dec. 11–17	1	..
Illinois, Galesburg	Dec. 9–15	7	..
Indiana, Indianapolis	Dec 10–16	3	.
Minnesota, 14 Counties	Nov. 12–Dec. 10	56	..
Missouri, St. Joseph	Dec. 9–15	3	..
New York, New York	Dec. 9–15	5	..
North Carolina, Greensborough	Dec. 9–15	7	.
Oregon, Umatilla County	Nov. 1–30	1	..
Virginia, Norfolk	Dec. 17	2	In Cranev Island Hospital
Richmond	Dec 11–17		Present
Washington, Spokane	Dec. 9–15	3	..
Wisconsin, La Crosse	Dec. 9–15	1	..
Appleton	Dec. 9–15	2	..
Milwaukee	Dec. 9–15	29	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Nov 18–24	6	
Brazil, Bahia	Nov 18–24	11	
China, Chefoo	Nov 4–10	1	On S. S. *Raleigh*
France, Marseille	Nov. 1–30		50
Paris	Nov. 25–Dec. 1	12	.
Gibraltar	Dec 3–9	3	..
Greece, Athens	Nov. 18–24		1
Malta, Valetta	Nov. 18–24	1	..
Russia, Odessa	Nov. 25–Dec. 1	7	.
St. Petersburg	Nov. 18–24	4	

CHOLERA—FOREIGN.

India, Bombay	Nov 14–27		15
Calcutta	Nov. 3–10		66
Rangoon	Nov. 11–17		1

YELLOW FEVER—FOREIGN

Cuba, Cardenas	Dec. 22	1	
Habana	Dec 22–27	1	On German S. S. *Kronprincessin Cecilie* from Veracruz.
Mexico, Veracruz	Dec. 2–8	1	1

PLAGUE—FOREIGN

Brazil, Bahia	Nov. 11–24	8	4
India, Bombay	Dec. 14–20.		12
Japan, Osaka	Nov 14–20	2	
Matsuyama	Nov. 14–20.	1	
Russia, Transbaikal Province	Nov. 4–10	1	1

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Original Articles.

STUDY OF A CASE OF YELLOW FEVER.

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GALVESTON, TEXAS.

PROFESSOR OF PATHOLOGY, UNIVERSITY OF TEXAS, MEDICAL DEPARTMENT.

ON December 20, 1905, a patient was admitted into the John Sealy Hospital at Galveston, with the following history:

P. F., Irish, thirty years old, single, worker in silver. Family and previous history not important. On Friday, November 24, he left New York City for Jacksonville, Fla., arriving there on November 30, leaving again after eight days for Havana by way of Tampa and Key West. In Havana he spent twelve days, leaving on December 20 for Galveston, and arriving there at noon on Sunday, December 24. He had been very seasick after leaving Havana, and on the evening of December 24 felt chilly on going to bed, but slept well. On rising the next morning, and attempting to dress, he was dizzy and fell, striking the back of his head against an iron bed. He went back to bed and slept half the day, had a glass of milk for breakfast, but vomited it at 3 P.M. What he vomited on board the boat had been greenish; this was of a redder color. After 3 P.M. on Monday everything he took was vomited.

Admitted to the hospital on December 26, the patient was slightly jaundiced over the general surface and the sclerotics were muddy and more deeply jaundiced. He remembered having had slight frontal headache on the 23d. He vomited dark fluid when admitted, and, during the two days of his stay in hospital, twenty-one vomiting seizures were recorded on the bedside notes. The material ejected was always the same, in small or large amounts, thin and dark reddish-brown, semitransparent fluid, with finely divided, pulpy, granular material settling toward the bottom.

He was catheterized three times during the two days, the amounts obtained being two ounces, two drams, and three drams. Expressing this in cubic centimeters, and assuming that he should have passed 1,500 c.c. in twenty-four hours, the amount actually secreted during forty-eight hours was 65 c.c. instead of an assumed normal of 3,000 c.c. But, according to his own account, the patient passed no urine from his chill on the evening of December 24 up to the time of his death, four days later, except what was drawn by catheter during his stay in hospital. He, therefore, secreted but 65 c.c. in ninety-six hours, instead of 6,000 c.c.

His temperature had reached 103.4° F. at one o'clock on the 26th, from that point falling steadily to normal at 3 A. M. on the 28th, and remaining subnormal afterward. The pulse reached its highest on the 27th at 3 A. M., namely, 92, and thereafter remained about 74-80 till he died. Respiration varied between 20 and 14.

Soon after admission it was noticed that the movement of his tongue was impeded in some way, and upon examination there was found a small extravasation of blood beneath the right side of the tongue, involving the floor of the mouth also. This steadily extended until the entire right side of the tongue and adjacent tissues were involved, the dark bluish red hematoma raising the tongue and pushing it toward the left side. His speech became progressively laborious and indistinct. Up to a short time before his death his mind was perfectly clear, and he complained of nothing but pain in the right side of his chest, and faintness and dizziness. An hour before death he was slightly delirious.

The examinations made in the case were as follows: 1. Diazoreaction, negative. 2. Blood for malaria, negative. 3. Blood for cells, etc. Reds (first examination), 4,920,000; (second examination), 5,904,000. Whites (first examination), 8,800; (second examination), 4,950. Hemoglobin, 100 per cent. Malarial organisms, none. Small lymphocytes, 31.7 per cent. Large mononuclears, 1.5 per cent. Transitional, 1.3 per cent. Polynuclears, 65.5 per cent. Eosinophiles, none counted. Basophiles, none counted. Neutrophile myelocytes, 2 counted. 4. Widal reaction, negative. 5. Vomitus for Teichmann crystals positive (twice). 6. Urine: Specific gravity not determined, dark, amber, acid. Albumin, marked reaction by nitric acid. Many granular and some epithelial casts, much granular detritus, many red cells.

The patient died at 8 P.M. on Thursday, December 28, at the end of the fourth day of his disease, if the chilly sensations of the previous Sunday evening mark the commencement of the disease. The postmortem examination was held at 9 P.M. of the same day, one hour after death. The protocol is as follows:

General Inspection.—Body well nourished, warm, very slight degree of rigor mortis in muscles of lower jaw. Moderate degree of hypostatic congestion in the integuments of the back, with a few small punctate hemorrhages into the upper layers of the skin. General surface slightly yellow, sclerotics more deeply tinged with yellow. Superficial nodes of axillæ and inguinal regions a little enlarged. The hard palate is covered by a thin red film of coagulated blood. The right side of the tongue, for a distance of 6 cm. from the tip, is the seat of an extravasation which reaches to the middle line and partly involves the sublingual tissues.

Preliminary Internal Inspection.—The tissues of the thorax wall are edematous. The liver in the median line is 10-12 cm. below the xiphoid cartilage; the lower edge of the right lobe is at the right iliac crest in the midaxillary line. The gall-bladder is distended and projects 4 cm. beyond the free edge of the liver. The coils of small intestine are moderately distended with gas, the colon, except at the cecum, is partly collapsed. The omentum is well supplied with fat, and its veins are distended with semifluid blood. In the mesentery, at the ileocecal junction,

there are two small ecchymoses. The mesenteric nodes are congested and swollen. No adhesions or fluid in the abdomen. Diaphragm, fifth rib in midclavicular line on each side.

Thorax.—Triangularis sterni unusually well developed and of a uniform dark-red color, like all the other muscles of the thorax. The lungs meet along their anterior margins to a point opposite the fourth ribs. No adhesions or fluid in either pleural cavity. Pericardial fluid, 20 c.c., clear yellow serum. Heart: The blood of the inferior cava is fluid and its plasma is tinged reddish with dissolved hemoglobin. The endothelium of the heart and great vessels is yellower than normal. In the ascending portion of the aortic arch there is a slight imbibition of blood pigment; there are also a few small spots of atheroma in the first part of the arch; coronary arteries normal. The cavity of the right ventricle is a little dilated, the valves are all normal and competent, the muscular tissue is opaque, but there is no fatty change visible. Lungs: The posterior aspect of both upper and lower lobes is intensely congested and spotted with many small hemorrhages, as is also the pleura between the lobes. Pleura everywhere transparent and shiny. On section the entire lung on each side contains countless small hemorrhages, and much frothy blood-stained fluid flows from the surface of the incision. Bronchi intensely congested and contain a small amount of blood-stained froth. Vessels empty and apparently normal. Esophagus distended with bloody fluid, and presents a linear ecchymosis 5 cm. long in the upper third.

Abdominal Organs.—Spleen slightly larger than normal, capsule opaque and wrinkled, both fibrous tissue and lymphoid follicles more prominent than normal. Adrenals apparently normal. Kidneys: Normal in size, capsule adherent in places, surface dark and congested, stellate veins prominent, two small cysts in upper pole of left kidney, none in right. Markings not well preserved, cortex broad and opaque, lobules broad and yellow, especially in the lower zone of the cortex just above the pyramids, and here and there groups of straight tubes show broad and yellow on the congested background. Stomach: Contains 500 c.c. thin dark fluid, mucosa uniformly softened, with small punctate hemorrhages in it which are most numerous in the cardiac end. Common bile duct pervious. Intestines: The mucosa throughout both small and large intestines is edematous and covered with an excess of whitish mucus. The tips of the valvulæ conniventes are congested, and in places there are many punctate hemorrhages in the submucosa, especially toward the lower end of the ileum. The Peyer's patches are dark and prominent, and the solitary follicles are edematous. The contents of the small intestine are thick white mucus, which is tinged with bile in the duodenum and upper jejunum; in the colon there is a thin white fluid resembling milk (enema). Pancreas: Congested and its duct distended with secretion. Liver: Slightly larger than normal, especially the right lobe. Generally of a marked yellow color, which is most distinct in the peripheries of the acini. Urinary bladder entirely empty, ecchymoses under mucosa near the internal meatus; prostate edematous; seminal vesicles distended with semen. Abdominal and thoracic aorta filled with fluid blood. Trachea and inner aspect of larynx and posterior surface of epiglottis, intensely congested, with minute hemorrhages into the superficial tissues, and an excess of mucus on the surface. On section of the tongue the extravasation is found to extend beneath rather than into it, and is confined entirely to the right half.

Head.—Superior longitudinal sinus empty. Slight excess of serum in the meshes of the pia, both surfaces of the dura slightly yellow, internal carotids a little atheromatous. Brain generally congested, slightly edematous, and tinged with yellow.

Clinical diagnosis, yellow fever; pathological diagnosis, yellow fever.

Microscopic.—Portions of various tissues were embedded in paraffin and stained with the following: hematein, eosin; hematein, picrofuchsin; eosin, polychrome blue; eosin, Gram-Weigert; Nikiforoff's. The findings by these various staining methods are grouped together.

1. Brain. Portion of cortex in the Rolandic area of the left side. The tissue shows marked congestion and edema, the perivascular lymph sheaths are wide, there are no hemorrhages, the ganglion cells are cloudy and vacuolated.

2. Tongue. Muscle fibers swollen and stain unevenly with eosin. Striation in places fairly well preserved; on transverse section Cohnheim's areas are too distinct. The vessel walls and their investing endothelia are swollen. There is very free hemorrhage, the unaltered red cells separating bundle from bundle and filling the areolar spaces. In places there is marked cross fragmentation of the fibers. In other places neither striæ nor longitudinal markings can be made out, the sarcoplasm is broken into fine granules, imperfectly filling the sheath, and there are red cells within the perimysium.

3. Stomach. Tissue generally hyperemic with some hemorrhage. Almost no desquamation of epithelia, very few goblet cells, nuclei well defined. In the glandules the cytoplasm of the cells is much swollen, filling the lumina, the oxyntic cells suffer with the others, but no more than they. Pushing between the cells normally present are many large ameboid lymphocytes. Few small lymphocytes, no pus cells. In the lumina of some of the glandules the cytoplasm is breaking down by vacuolation and granular changes. The endothelia in vessels and lymph channels are swollen and tend to desquamate. All coats are edematous.

4. Small intestine. The tips of the villi are denuded of their epithelia in groups. Remaining epithelia are swollen and granular, and in many cases the cytoplasm is fused, cell with cell. There are very few beaker cells. Lymph channels are crowded with red cells, and their endothelia are large, swollen, and desquamating. All muscle fibers are edematous and stain badly, both in the muscle coats and the muscularis mucosæ, and their nuclei are coarsely granular. Scattered through the intestinal coats are a few eosinophile and a few polynuclear leucocytes, with a larger number of lymphocytes, chiefly large. Edema of all coats.

5. Pancreas. There are hemorrhages between the lobules. The ducts are distended with coagulated material, their epithelia are swollen, proliferating, and desquamating; the entire wall of the duct is edematous. The nuclei of the gland cells show marked karyolysis, the chromatin in many places being scanty and granular, and in others swept entirely out of the cell as fine dust. The same condition is noted in the epithelia of the main ducts. In the islands the cytoplasm of the cells is fragmented and fused, swollen and cloudy, and the nuclei contain but little chromatin. In the vessels, both arteries and veins, the wall is edematous, the lumen is full of blood, and the capillaries show frequent rhexis.

6. Liver. The hepatic epithelia show marked general fatty degeneration. There are but few free nuclei remaining, for the nuclei appear to suffer as early and as much as the cytoplasm. Here and there very large nuclei can be found, almost empty of chromatin, with a very distinct eccentric nucleolus,

and the latter is acidophile. Other nuclei show karyorhexis, but this is limited to a few cells. Between the liver cells are occasional ameboid lymphocytes. The capillaries are very hyperemic, especially those of the portal system. The smaller bile ducts are everywhere occluded by swollen and desquamated epithelia, in places forming a tightly-packed granular mass, so that the structure is not recognizable as a duct. Many of the liver cells contain granules of precipitated bile pigment. Much of this lies within the partly empty cell membrane, amid granules of broken-down cytoplasm, but there is also a high proportion of such pigment, in the aggregate a great deal, which lies free in the capillaries leading to the central vein; the bile pigment thus has a direct access to the systemic circulation. The large ducts are somewhat similarly affected, but there are many with a lumen. Kupfer's stellate cells are swollen and dividing. The large increase in pigment in the liver points to active erythrolysis in some part of the portal territory, and to the alimentary tract as the place of entry for the disease. The ability of the liver to destroy or hold back the toxins would soon be exceeded, and they and the bile would enter the general circulation together.

7. Abdominal node (mesenteric). Apparently a rapid proliferation of small lymphocytes, the germinal areas being remarkably distinct and tightly packed. The small blood-vessels are partly occluded by swelling of the endothelia. In the main lymph channels the endothelia are swollen, and tend to desquamate, but are not fused. But very few polynuclears are noted. Whole tissue is edematous. In the adjacent fat tissue there is edema with capillary hemorrhages, and the nuclei of the fat cells are vacuolated.

8. Heart. The muscle fibers are swollen and irregular in outline, in places vacuolated, the nuclei very much swollen, and with indented edges. Much fragmentation in places. The usual pigment at the poles of the nuclei is absent, and triangular clear spaces are found instead, in which an occasional granule of hemofuscin remains. The tissue is generally hyperemic and edematous, and there are a few minute hemorrhages. The walls of the vessels are swollen. No cellular exudate observed.

9. Lung. The hyperemia in the arterioles and capillaries is extreme, many of the smaller vessels being full to bursting, with frequent hemorrhage both by rhexis and diapedesis. Many of the septa between alveoli are packed with red cells and many alveoli are full. In form the red cells are normal, except that the central pale area is a little larger than normal, the rim is slightly swollen, and the disk is more cupped, but there is no crenation, anomaly of form or size, or destructive process observed in the extravasated red cells. The epithelia in the alveoli are swollen and opaque, but their nuclei stain well. Many of the respiratory bronchioles contain red cells. There is remarkably little pigment in the fibrous tissue of the lung.

10. Adrenal. The cells of the glomerular zone and of the outer fascicular zone show swollen nuclei, the cytoplasm washed out, and the cell empty except for a few delicate strands. The cells of the lower fascicular and reticular zones are pigmented by a fine reddish-yellow amorphous intracellular dust. In many of these cells the nucleus is merely an outline, free from chromatin. The capillaries all through the organ are hyperemic, with a few minute hemorrhages.

11. Kidney. All the epithelia throughout the organ are swollen, in many places completely closing the tubules; this is especially distinct in the convoluted tubules. Many of the tubules are filled with homogeneous acidophile casts. In some of Henle's loops the entire epithelial investment is partly separated from the wall, but generally there is but little desquamation. The glomeruli are swollen, very hyperemic, and compressed somewhat by amorphous pale material between the layers of their capsules. This is in part derived from the cytoplasm of the epithelia, which are scanty and degenerated, some cells appearing as round opaque globules lying free in the amorphous material; part of it is probably proteid derived from the blood, and unable to escape through the occluded tubules. In view of the degree of active hyperemia present, there are remarkably few hemorrhages in the organ.

12. Spleen. The lymphoid follicles are large, their vessels are partly closed by swelling of their endothelia, and their walls are wide, and in places structureless, from edema. In the larger arteries the nuclei of the muscle cells are much swollen and distorted. The vascular spaces of the pulp are crowded with red cells, which appear of normal outline. Among the white cells present are many eosinophiles.

13. Prostate. The organ is hyperemic and edematous. Epithelia are swollen, granular, and opaque, their nuclei vesicular, and chromatin scanty. Gland and duct lumina are more or less filled with detritus and some desquamated epithelia.

By Nikiforoff's method some of the prostatic epithelia show a tendency to take the indulin strongly. In the adrenal some of the cells pick out the aurantia, and the nuclei are acidophile; other cells refuse both aurantia and eosin. In the pancreas an occasional cell is acidophile, the islands do not stain, the capillaries of the islands show especially wide and empty; in the ducts there are some acidophile and degenerated epithelia, and nuclear lysis is very distinct. In the intestine nothing stains except the red cells, so that the villi look like sacs stuffed with red cells.

With Gram-Weigert stain no fibrin is found in any of the organs, even where the fluid exudate is most copious and the effects of the edema most clear.

Summing up the microscopic features of the case, we recognize:

First, an intense and general edema, involving all the tissues examined, and in general it has acted destructively on both cells and nuclei, tending to dissolve out chromatin from all nuclei. This is more important than appears at first sight, since the patient ingested no fluids which could be retained.

Second, there is a severe effect upon the walls of vessels, especially of small arteries and capillaries. This includes swelling of endothelia, desquamation of endothelia, such imbibition of fluid by the media and other coats that they may become structureless and none of the elements present will stain, and, lastly, increased permeability (of capillaries especially) with rhexis.

Third, there is a pronounced and destructive effect upon epithelia, which is twofold in nature, partly the result of imbibition of fluid, and partly the result of a diffusible toxin. There is nothing catarrhal about it, no tendency to produce profuse mucinous discharges, no great desquamation of dead cells in masses, no large collections of leucocytes, either polynuclear or other forms. Furthermore, there is no fibrin in the exudate in any of the organs examined. The destructive effect upon epithelia is widespread, but most distinct where the cells are most highly specialized, as in liver, kidney, and adrenal, but of the same character everywhere.

Fourth, there is no cellular exudate anywhere.

Fifth, there is no hemolysis. The red cells, both in the vessels and extravasated into the tissue, are apparently normal, except for some swelling, and this is probably a post-mortem change, for even in the hour between death and the autopsy there was time for slight staining of the endothelium of the ascending arch by dissolved hemoglobin, and swelling of the red cells is the first step of the process which leads to this effect.

FIG. 1.—Small round and ameboid forms from the mucous surface of the ileum; one presents two vacuoles; one lies in an empty red cell with a finely granular border; the accompanying bacilli also stain.

Of course, all this applies to this single case, dying on the fourth day of the disease, and is not supposed to apply to any other case.

Microorganisms.—By the Gram-Weigert method, preceded by eosin, a number of large boat-shaped bacilli were found in the pancreas and among the epithelia of the small intestine. This was an accidental find and was not followed up, as it was felt that ordinary bacterial stains of all kinds had been tried so thoroughly that it was unnecessary to repeat them.

The following staining method was adopted after numerous unproductive efforts:

Material is hardened either in 5 per cent. formalin solution, made with normal salt solution, for 24 hours, or in saturated bichloride solution in normal salt for the same time; it is then transferred to 95 per cent. alcohol. Imbedding in paraffin is as follows:

Out of 95 per cent., to absolute, alcohol 4-6 hours; anilin oil, 3 hours to overnight, excess removed by filter paper; xylol, 3-4 hours; soft paraffin, 3-4 hours; hard paraffin, 3-4 hours. The last three steps are sometimes best carried out at 37° C. Sections were cut 5-7μ, flattened in warm water, and fastened to the slide in the drying oven at 38° C. overnight. The slide is then freed from paraffin by flooding with xylol, dipped in 95 per cent. alcohol, and before the section is quite dry a few drops of the stain are added. This consists of

Solution of ammoniated oxide of copper	10 c.c.
Glycerin	10 c.c.
Saturated alcoholic gentian	30 c.c.

The stain acts for 15-20 minutes, and is decolorized by flooding with ½ per cent. HCl in alcohol, ceasing before all the color is extracted. The section should have a delicate bluish tinge. Usually one minute is enough. To the acid alcohol a trace of eosin or basic fuchsin may be added as a contrast stain. The section is dried with blotting paper cleared with xylol and mounted in balsam.

Results.—Wherever the capillaries contain red cells, some of these present within their bodies deeply stained blue or purple bodies. The balance of the cell is not stained by the gentian, or only faintly so; with a contrast stain, of course, it will have no bluish tinge. Some of the blue staining bodies are free. Such extracellular forms were observed on the surface of the ileum, among desquamated epithelia, and extravasated red cells, and in the glandular spaces of the prostate they were very numerous, but they occur in all the tissues examined, lying either in capillaries, lymphatics, or tissue spaces. Others were found in endothelia, or, rarely, in epithelia, as in the kidney.

In size these bodies vary from a round point in the body of a red cell, of less than one-fifth the diameter of the cell, that is, about 1-2μ, up to a body which occupies all the cell except a narrow margin (Fig. 2, Nos. 2 and 4). Between these extremes of size are various ameboid and horseshoe forms. Where red cells lie in small capillaries as elongated oval or triangular objects, the stained body frequently occupies one end. In some red cells the ameba shows distinct pseudopods (Fig 2, No. 2), and in the intestinal wall, the prostate, kidney, and elsewhere, such ameboid forms have been found free. In an endothelial cell, desquamated from a lymphatic in the submucosa of the ileum, a small elliptical body was found, lying in a space in the cell protoplasm, which it did not entirely fill, the unstained cell nucleus lying at the side. A similar observation was made on a large lymphocyte, which presented no nucleus (Fig. 2, No. 5).

Where hemorrhages occur, as in the alveoli of the lungs and upon the mucosa of the ileum, infected red cells are often found, with the proportions between cell and ameba varying according to the development of the latter, and among these are unstained, uninfected red cells. Occasionally red cells have been found with more than one dark-blue body inclosed, recalling multiple infection with plasmodium malariæ and pyrosoma bovis.

FIG. 2.—Intracellular forms. 1. Small round body at one end of a compressed red cell in a narrow capillary. 2. Red cell with large vacuoled ameboid body. 3. Small round body in the cytoplasm of an endothelial cell, its nucleus laterally displaced. Taken from a lymphatic of the submucosa of the ileum. 4. Horseshoe form in a red cell. 5. Oval body lying in the cytoplasm of a large lymphocyte, its nucleus not seen

Occasionally a capillary is so filled with red cells, which carry these blue bodies, that with a low power the vessel stands out as a solid cord among the unstained elements.

The distribution of the amebæ varies in different tissues and different parts of the same organ. In

the kidney they are found in the small vessels proximal to the glomeruli, distinctly but scantily in the glomerular loops, and still fewer on the distal side. In the convoluted tubules only a few epithelia were seen, which contained the small blue bodies, and here and there one lies free in the lumen of the tube. A few casts in the deeper portion of the cortex were slightly tinged with blue, as if material from amebæ were contained in them. In the liver numerous examples may be seen in one field, and but few in another. Here and there the swollen, unstained nuclei of the hepatic epithelia appear to contain small blue bodies, and these probably are not chromatin particles, for the stain does not persist in nuclei. In the lung the amebæ seem to be less numerous than elsewhere; in the spleen they showed particularly well after the bichloride method of hardening; in the mucosa and submucosa of the ileum and stomach very clear pictures were obtained, both of free and of intracellular forms.

Interpretation.—This method of staining does not stain either the cytoplasm, the nucleus, or the nucleolus of the cells in the body, with the exception that in the bichloride series some of the red cells were faintly tinged in a diffuse manner if decolorization had been incomplete. It does not stain either the red or the white cells in blood films. It does not stain the ameba coli, in the few cases thus far tried. The method does stain the pus cocci, but not very well; the tubercle bacillus stains well, even in tissues where it is difficult to find it by carbol-fuchsin, and the malarial organism in blood smears is very distinctly stained. Hence the blue bodies found can not be due to a reaction with normal hemoglobin, or they would occur in blood smears; nor are they due to reaction with hemoglobin altered in the course of yellow fever, for among the red cells which bear them are others which do not stain; in red cells which are almost filled by these bodies there is often an unstained margin about the parasite; in some red cells the ameboid margin, with pseudopods, has been distinctly seen, while the balance of the cell is unstained: the same is true where the parasite occupies one end of a compressed red cell, and other forms occur where the ameba is of a horseshoe shape, with rounded ends, within the body of the red cell. When the ameba is free it often has small pseudopods (Fig. 1). There is a regular gradation in shape and size between the small round dot in a red cell, of one-fifth the cell's diameter or less, up to a body which entirely occupies the cell's capacity. The small and middle-sized forms are often provided with one or more vacuoles, seldom more than two. With the method described the blue ameboid objects are the only elements stained in sections of various organs. Taking all these facts together, the blue ameboid bodies can not be regarded as artefacts nor as elements of the tissues.

The internal structure of the ameba is difficult to make out, and this is one point in which the method needs improvement. The staining is usually dense and uniform, except for the presence of vacuoles, but no nucleus is visible, and no pigment. In some of the forms observed after bichloride hardening there were a few of the amebæ which presented a reddish tinge on one side; this may perhaps prove to be nuclear.

From this single case it can not be claimed, far less proved, that the ameboid bodies observed are causal in the disease known as yellow fever, though provisionally the name *Amœba febris flavæ* may be suggested. Before such a claim can be made the following conditions should be fulfilled:

1. The same bodies must be found in the organs of other cases of yellow fever, and early autopsy is probably important.

2. They should be found in the blood of yellow fever patients, in all probability within the first three days of the disease, for transmission by the stegomyia occurs only during that period.

3. They must be found, under some guise, in the tissues of mosquitos known to be infected.

4. More than one observer, in different parts of the world, should find and identify them.

5. They should be cultivated, but here, as in the case of the malarial parasite, the condition is not urgent for the mere establishment of a causal relation.

All these conditions imply access to fresh cases of the disease and to infected mosquitos, which is not the good fortune of the writer.

In conclusion, it is my pleasant duty to express my thanks to Prof. Marvin L. Graves, in whose service the case occurred, for permission to report it; and also to Prof. E. C. Schneider, of the Colorado Springs College, who placed at my disposal the resources of his laboratory, and thus enabled me to complete the case during my vacation.

PRACTICAL POINTS IN THE OPERATION OF COLOSTOMY.

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To one as thoroughly convinced as the writer of the great benefits of this operation in many cases, it seems strange that the natural objections to it held by the profession at large, and especially that part of it devoting itself to medicine rather than surgery, should not, ere this, have been more completely overcome. That the operation has been abused admits of no more question than that the family physician often prevents his patient from receiving the benefits which would certainly follow its performance.

In trying to point out concisely the real indications for this most valuable addition to the surgeon's weapons for combating disease, a certain allowance must be made for personal feeling on the part of surgeons and for honest differences of opinion. Some will advise it much more frequently than others, according to their own experience of its advantages. There is hardly room, however, for any such radical difference of opinion, as was shown by an enthusiastic young operator who had taken a short course in diseases of the rectum under me some years ago, and then started practice in the West, who wrote to me after a few months that he had already done the operation twenty times, but his county society was making him trouble, and he wished to know how many times I had done it during the same period. My answer was in one word, "once," and I was then running a large clinic.

In most cases there should be no uncertainty. Take, for instance, cancer of the rectum which is inoperable. No palliative measure has ever been devised approaching colostomy in its benefits, where it is done, as it always should be, early. The average duration of life in this disease is supposed to be two years, though such an estimate may be open to question from the impossibility of fixing, with any accuracy, the time of its onset. But, accepting this from St. Mark's Hospital as being correct, I have had many cases where the operation was done after the disease had existed fully as long as this, in which the

patient has lived in comparative comfort from two to five years after.

In fact, I will venture the statement that in cancer of the rectum the average duration of life is much longer after colostomy than after extirpation, though of course there is never a cure. So plainly has this been demonstrated in my own practice for years back that some of my associates have made up their minds that if they ever found themselves afflicted with this dread disease they would take a simple colostomy, and let it go at that.

Of course, there have been the usual number of unsatisfactory cases and fatalities—cases done "after there were symptoms of obstruction," as so often advised by the medical attendant, and cases in which there was already undiscovered metastasis, and in which the operation on this account has not been worth the while. But, setting these aside, I cannot state too forcibly the simple fact that in my cancer cases, in which extirpation was impossible, the relief given by this treatment has earned me the heartfelt gratitude of many patients who have found themselves slipping quietly and painlessly down to the grave from gradual exhaustion. And, with this experience behind me, my lack of sympathy with other palliative measures may easily be understood.

Colostomy in cancer relieves the constant bearing-down pain; prevents abrasion of the surface and consequent hemorrhage; prevents the formation of abscesses and fistulæ in the vicinity of the disease, and slows the growth by avoiding the irritation due to natural defecation. Its danger, when done early, is almost nil, but this danger increases directly in proportion as the disease advances, until where chronic obstruction has actually been established, it reaches 33 per cent. Why, then, delay till obstruction sets in? Simply from an exaggerated idea of the discomforts attendant upon this means of relief—an idea which any extended experience will certainly overcome.

Congenital malformations of the rectum and anus constitute another of the strongest indications. Not all of them, by any means, but some of them.

Think of a man born with an imperforate anus, and living for forty odd years with a bath sponge tied against the fistula, resulting from the puncture by a trocar! During all that time the entire colon had been a reservoir for solid feces, and when I did a colostomy it was hypertrophied from cecum to anus to three-eighths of an inch in thickness. He died from acute dilatation of the stomach, due to unloading the colon, which filled the entire abdomen.

In all this class of cases colostomy is the last resort after every effort has been made to establish an outlet at the natural site, but it sometimes is manifestly the only way of prolonging life.

Cases of extensive ulceration are more frequently an indication for an artificial anus than are the benign fibrous strictures. And destructive ulcerative processes which can be made to cicatrize by no other treatment will often heal quickly after the flow of feces has been diverted. In the benign strictures I do not use this method of relief as often now as formerly, having learned by experience how long and in what comparative comfort patients may bear this condition. The chronic hypertrophic proctitis, which is the cause of the lessened caliber, seems in many cases to be self-limiting. There is little or no cicatricial contraction to be overcome which might in time cause complete obstruction; but a thickening and infiltration of the wall of the gut and surrounding tissue, which once having taken place remains comparatively stationary and does not advance. The formation of abscesses and extensive fistulæ in the neighborhood of the stricture is more to be feared, and is a stronger indication for colostomy than the mere narrowing of the canal, which can generally be quite satisfactorily managed by other methods.

Rectovesical fistula in either sex, unless very small, usually calls for prompt relief by this means, and so do some of the more extensive fistulæ where there is no communication between neighboring organs. For fistula is not always curable by cutting, nor is attack upon the extensive tracts always justifiable, even when the disease is destroying the vital powers. Many of them have to be borne, and those which cannot be are often best cured by an artificial anus—in fact, can only be cured in this way.

In acute intestinal obstruction from any cause (volvulus, intussusception, enteroliths, bands, apertures) the conditions found in each case upon opening the abdomen will decide for or against establishing a temporary or permanent artificial anus.

There is, I think, a growing feeling that in all cases in which any sort of artificial anus is necessary the colon in some part is the most convenient place for it; and, as a more or less artificial anus (generally more) is a necessary result of nearly all cases of extirpation of the rectum, if this idea finally prevails the operation of excision will be one of the most frequent of all the indications for colostomy. With me this idea has always had great weight, simply because, as a rule, the patients upon whom I have done colostomy for any cause, have been cleaner, more comfortable, and have had better control of the passages than those upon whom, after extirpation, I have made the gut to end as near the natural anus as the operation allowed. This is a matter upon which one can speak only in a general way, and there are exceptions, but anything like sphincteric power after any variety of excision is very rare. These patients usually have a good deal of difficulty in keeping themselves clean, whereas one with a *properly formed* opening in the groin will have no difficulty whatever. Even if there be no real sphincteric power, the bowels may be educated to move once a day, and very often no receptacle need be worn, the opening being covered merely with a pad of lint held in place by a light abdominal bandage.

Of the surgical advantages of always doing a preliminary colostomy before extirpation I will not speak. There is much to be said in its favor, but we are now considering the question from the patient's standpoint of personal cleanliness and comfort, and I am often surprised to find that those with whom I have taken the greatest care to make a temporary opening which could be easily closed, decline the second operation as not being worth while. Nor is this only with men, but it applies equally to women, and not necessarily in the lower walks of life.

A question now *sub judice* is whether mucous colitis is an indication for colostomy or appendostomy, and in what class of cases. It has not won its way as yet with conservative advisors, and my own feeling is that its advantages will

have to be proven beyond a peradventure before it ever will. Too many family physicians are convinced of the nervous causation of the symptoms which make the condition to have them recommend any kind of local treatment very enthusiastically, and especially this operation. The question must be left to time, and will be settled rather in the hospital ward than in private practice.

Technique.—The operator should have a prety clear idea beforehand whether the opening is to be permanent or only temporary. If the former, certain steps may be taken to insure absolute efficiency and the greatest amount of control with the certainty that nothing can pass below the opening—the chief essentials. If the opening is to be only temporary, more regard must be paid to the future closure, and efficiency must be somewhat sacrificed in order that the gut be as little injured as possible in the primary operation. In this, as in other things, the personal equation will modify the author's choice of method. With myself, most colostomies are intended to be permanent, and even in those which I have intended to be temporary I have not always been able to get the patient's consent to a second operation, for the reason given above. A few times I have been called upon also to close what I had supposed would be a permanent condition on account of the cure of the disease, and here the operation has been much more extensive than the colostomy; so that the technique is not in its final stages the same for the temporary and permanent operations, and the distinction is practically important, and can usually be made beforehand without making a large incision into the abdomen for exploration by the whole hand, and utilizing this for the artificial anus—a method with manifest objections. The debatable cases are the extirpations. If the operator believes a sacral or ischiorectal artificial anus has sufficient advantages over an inguinal to make it worth while to close the inguinal, which has been formed merely as a source of additional safety during the operation of excision, he will make many more temporary than permanent openings. Otherwise the temporary openings will be confined to the cases of benign ulceration, extensive fistulæ, and some of the cases of acute obstruction. In my own practice I do not find "provisional colostomy" at all necessary to the success of an extirpation, and if I did I should not think of closing it after making it; so it results that most of my own cases are permanent.

There is no necessity for going over all the details of the operation found in the text-books, but a few points may be dwelt upon with advantage. Nearly all of the many modifications which have been made since the operation became thoroughly established have been in the line of elaboration rather than simplicity. The Mayde-Reclus method of substituting a glass rod for a suspensory suture under the gut, and the omission of any suturing to the abdominal wall is about the only exception. So that now the operator who has had little experience and no fixed ideas on the subject is fairly flooded with methods from which to choose. There are spurs of all sorts, stitches of all sorts, openings in the inguinal region, over Poupart's ligament, and down the thigh. The bowel is incised lengthwise, and transversely, or both ways. A recent text-book describes thirteen different recognized procedures, with the names of their sponsors; so that the state of mind of the operator may be thoroughly appreciated who wanted my advice the other day, not as to the advisability of the operation, and not as to its permanency, but as to the value of these elaborations, and how best to operate.

Regarding the Mayde-Reclus method, which is a modification of my own, its simplicity is not devoid of danger peculiar to itself, and it should not be trusted except in cases of very small incision tightly plugged by the loop of gut drawn through it. More than once a hernia of small intestine has escaped between the incision and the loop, and in one case of my own this accident ended fatally. There is no occasion for any such risk. The glass rod simplifies the operation, and, if left *in situ* two or three weeks, makes a good spur; but two or three sutures in addition will make all safe, and should not be omitted.

My own method has changed but little, in spite of the changes by others, and the same is the case at St. Mark's. The incision was for a time unnecessarily large. It is now half the length and "gridironed," as in appendicitis. In other words, muscles are separated as far as possible, and fibers cut as little as possible, and an opening one inch long will usually allow the insertion of the index finger, the hooking up of the sigmoid, and pulling it out of the abdomen. If, as I hold, as useful and cleanly an opening can be made in this way as by any more elaborate effort at sphincteric power by carrying the loop to a distance from this opening through other muscles or under the skin, and closing this opening for another more or less removed from it, these modifications, which constitute most of the supposed improvements, will not hold their own. I have never adopted them.

It is unfortunate to so far improve upon an operation as to spoil it; but not long ago I had a very serious time in resecting one of these long intermuscular and subcutaneous outlets, which was a mere fistulous tract, and giving the patient a real anus to overcome chronic obstruction.

In the temporary operation, pass the sutures through the edges of the abdominal incision, the parietal peritoneum, and the wall of the gut. In the permanent operation *do not* include the parietal peritoneum in the suture.

The reason is obvious. If the parietal peritoneum be left out a firmer union between gut and abdominal wall is secured than when the two peritoneal layers are united. In the latter case, the gut, though not as well adapted for permanency, is more movable, is more completely shut off from the general peritoneal cavity, and can often be closed by an operation which shall not extend into the cavity.

In temporary colostomy make a free longitudinal incision in the gut, but cut away none of the intestinal wall. In permanent colostomy trim the gut freely down to the edges of the abdominal incision. In both keep the opening into the gut between the spur and the upper angle of the wound, and do not cut into the bowel below the level of the spur. In this way feces are forced to the surface by the spur and by the partially-contracted lower segment of the gut beyond the level of the spur, and the longitudinal section, with no sacrifice of tissue, is much more easily closed by subsequent operation.

Were it not for one thing, the lower segment could, with advantage, be invaginated and dropped in every permanent operation; but it is often of advantage to wash through it from above downwards, and when the upper end is thus

closed I have known a collection of mucus and discharge to accumulate in the cul-de-sac to a tumor the size of the fist, and cause great pain and very acute symptoms before being relieved.

In cases of severe or long-continued chronic obstruction, operate on the right side instead of the left, and make the opening temporary, with the idea subsequently of enlarging it and allowing it to remain, or preferably closing it and substituting an opening on the left, if conditions admit.

The reason for this is that in such cases the greatest accumulation is often in the cecum; that the sigmoid is likely to be so distended with solid feces as to make a proper colostomy opening impossible until it has emptied itself; and that an opening in the sigmoid, even though large and free, may fail entirely to give relief to the distended large bowel before fatal results are caused.

This has happened in my own practice from failures to exactly appreciate the conditions existing. The patient, with cancer of the rectum, was an exceedingly large man, though emaciated, still weighing at least two hundred and fifty pounds, and the abdomen, although very large, was not at all distended, nor were there signs of obstruction. In fact, he was having solid passages by the aid of laxatives every other day, but the feces consisted only of two or three large scybalæ. An opening was made as high in the sigmoid as possible, and the gut was found only moderately full of hard fecal matter. Thinking we might have trouble, the opening was made much larger than usual and the stitches placed very strongly and with care, and an excellent spur was formed, but within forty-eight hours the whole sigmoid and rectum, both above and below the opening, were flooded and packed with solid masses, and the artificial anus gave no relief whatever. Several times these were removed with forceps and the finger, but without any relief, and in the end the pressure of this avalanche was too great, the adhesions between the bowel and the abdominal wall gave way, and fatal extravasation into the peritoneum occurred. A second temporary opening into the cecum should have been made, and might have saved the patient.

In making an opening into the sigmoid make it as high up as possible to avoid prolapse, and in the cecum make it as far from the valve as possible, to prevent the end of the small gut being pressed directly into the opening in defecation, thus allowing the direct evacuation of fluid feces. This is always the objection to cecostomy, and, although in time the evacuations may become formed, it is a serious one. Another is that the whole large bowel is cut off from the economy, and, though patients seem to bear this remarkably well, it is more than probable that it has in nature some function besides a mere reservoir, and that patients are better with than without it.

Any of the operations for an artificial anus may as well be completed at the time as to wait two or three days before opening the gut. All that is necessary is to guard against feces soiling the peritoneum, and a few sutures carefully placed will eliminate any danger of this kind. The opening of the bowel is not painful, however, even when postponed for adhesions to form; but, until it is opened, there is generally complete obstruction at the site of the spur both for gas and solid matter, and the condition of the patient must be carefully watched. Often in forty-eight hours all the symptoms of acute obstruction may be distinctly marked, and the gut must be opened without further delay.

I have known a man to die of obstruction in a hospital ward after a colostomy while the operator was waiting for the adhesions to become firm enough for the gut to be incised.

Sigmoid colostomy may be impossible for three reasons. The gut at this point may have no mesentery; it may be so implicated in cancerous disease as to be either unrecognizable or absolutely fixed and immovable, or it may be overdistended with feces so that only a lateral incision without a spur is possible. In all these cases the abdominal incision should be closed. In the last a temporary opening should be made in the cecum with the expectation of making a permanent colostomy after the bowel has been evacuated. In the other two conditions a permanent anus should be made in the transverse colon, as near the splenic flexure as possible. Here we secure solid passages and cut off no more large bowel from the economy than necessary.

A temporary anus made as here described may generally, and a permanent one may frequently, be closed by a plastic operation without opening the peritoneal cavity. As the first step toward this the spur should either be destroyed or pressed back. Destruction may be by excision or by sloughing from the grasp of any form of pressure forceps. As there is always some danger from the enterotome, Banks' method by elastic pressure upon the spur should first be attempted. This consists in introducing as large a piece of thick rubber tubing into the proximal and distal ends of the gut as these will admit, and fastening it in this position for several days. This is accomplished by passing a piece of aluminum wire through the side of the tube (not the caliber), bending the ends over the edges of the abdominal incision, and holding them with adhesive plaster. The rubber will cause pain, but can generally be borne, and after three or four days the spur will be found considerably reduced and the contracted distal orifice considerably dilated.

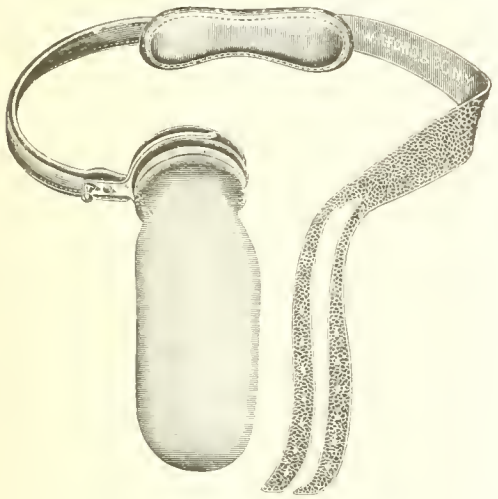
When this has been accomplished, the edges of the gut, with the cicatricial tissues, are dissected free from the parietes *down to* the subperitoneal fat on all sides, and the parietal peritoneum, with its fat, is stripped from the abdominal wall to a sufficient extent in every direction to allow free mobility of the gut, and partial or complete withdrawal of the part to be sutured from the wound.

This dissection should not be begun in the cicatricial tissue at the sides, where the parts are matted together, and there is more or less ectropion, because the peritoneal cavity may be opened before the operator knows just where he is; but a clean incision in normal tissue should be made from the upper angle of the anus upward for at least an inch, and from the lower angle downward for another inch, and when subperitoneal fat and peritoneum have been recognized at these two points, blunt dissection with the finger and a few strokes of the knife will loosen the sides of the opening, and permit the drawing out of the portion of bowel to be sutured. The opening in the bowel is then closed carefully with Lembert sutures passed through the cicatricial edges. No sacrifice of tissue should be made to secure clean approximation of peritoneal surfaces, for this is not necessary. The suturing must be adapted to the nature of the opening which has been made,

and may be transverse or vertical. Where much bowel has been sacrificed in the original operation, it must be transverse; hence the advantage of a longitudinal incision without sacrifice of the wall.

Where too much bowel has been resected to allow of this plastic procedure, the problem is simply one of end-to-end intestinal anastomosis. I have a favorite Murphy button which has done its work successfully four times in these cases, and the recent experiments of Cannon and Murphy would indicate that end-to-end anastomosis is always preferable to lateral, in that the circular fibers are not cut longitudinally, and peristalsis is not, therefore, rendered impossible.

As to plugs to close the artificial anus, and receptacles worn to collect escaping feces, the former I never use, and the latter are by no means always necessary. Often a simple pad of cotton and a body bandage answer better than any more elaborate contrivance, and the bowels can usually be trained to act but once a day, and this with solid movements. Should any contrivance be desired, however, an excellent and very simple truss can be made to meet the indications for support.



The one shown in the cut was made for me by Ford & Co., some years ago, and seems to have given satisfaction to both surgeons and patients. It is a simple truss with a fork at the end. Between the two prongs of this fork slips a flat, hard rubber ring about an inch thick and two inches in diameter, and onto this ring the soft rubber pocket is held by its own elasticity. The contrivance is light, firm, and cleanly. Most of those pictured in the textbooks are unnecessarily cumbersome.

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A GENERAL CONSIDERATION OF DEMENTIA PRÆCOX.

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Of the many forms of insanity which are found among those who populate the hospitals for the insane throughout the country, without a doubt one of the most prominent, and one which attracts our attention as much as any other, is dementia præcox. This psychosis is also known by a variety of other names, such as primary dementia, adolescent insanity, juvenile insanity, stupiditas, etc., and, as these names signify, the disease is one which has its outset in early life and it usually ends, after running a chronic progressive course, in a state of mental apathy and deterioration. The state of profound dementia is usually preceded by a preliminary state of depression varying in length, but nearly always terminating in complete lethargy and indifference.

About fifteen to twenty-five per cent. of all admissions to hospitals, according to Kraepelin, are patients suffering from this form of mental disease. It has only been in the last few years that the disease, as such, has been recognized. Formerly these cases were classed among the imbeciles and idiots, or, to use the general term, "dements."

It is only necessary to investigate the histories of many of the so-called imbeciles and idiots who have been residents of the hospitals for years to find that in early youth many of them were children of ordinary mental capacity, and that some had even been exceptionally intelligent. We find oftentimes in these cases that some time about the age of pubescence, and on up to their thirtieth year, these men and women suffered some attack of mental disorder which has left them, after many years, in this state of progressed dementia.

The term dementia præcox is one of some fifteen years' standing, being first used by Pick[1] in 1891. At this time he applied the term to a class of cases which we now call hebephrenia or hebephrenia gravis. Its usage has since been broadened, and it is now made to include a large variety of cases.

In our opinion, by far the best classification that can be used in separating the various cases which are placed under the head dementia præcox, is that of the German psychiatrist, Kraepelin. The disease may be said to include, according to Kraepelin, (1) Hebephrenia, a term first applied by Kahlbaum and Heckter to a class of cases which sometimes show maniacal symptoms, but rapidly terminate in a state similar to melancholia; (2) Katatonia, first used by Kahlbaum in 1874 to designate a class of cases having a stuporous condition with negativism, automatism, stereotypy, echolalia, echopraxia, etc.; (3) Paranoid dementia, being applied to certain forms of paranoia which terminate with decided mental impairment and degeneration.

Psychical Symptomatology. — Considered as a whole, dementia præcox is not difficult to diagnosticate, especially in its early stages, although a train of symptoms which is most varied is often presented. To diagnose the various forms of the psychosis is perhaps more difficult, and it may not be amiss to consider the symptomatology of these various types of dementia præcox.

Hebephrenic Form.—The development of this form of the psychosis is usually very gradual. The first manifestations of the disease are frequently the display of a violent temper without cause, irritability and restlessness in some cases, while in others the first change noted is the difficulty in the concentration of thought, and with this comes a loss of interest in everything, and lack of energy. In the restless and active type of hebephrenia the patients are often found assuming peculiar attitudes. They walk about the wards picking up pieces of paper, rags, etc. They grin foolishly, and frequently burst out into loud laughter without cause. Others of the more depressed type sit for hours at a time on a seat, the head cast down, and facial expression apathetic. Some patients seem immobile, and will not change their position except when forced to do so. Frequently they refuse to eat, and remain in a state of absolute mutism. It is not a defect in speech that prevents these patients from talking; it is sim-

ly because they have nothing to say. It is sometimes difficult to differentiate between hebephrenia and katatonia in some cases of this kind. Not infrequently, seized with sudden impulses, some of these patients will suddenly start up from the position they have held for some time, grasp some object, and throw it. Often these impulses take the form of suicidal and homicidal tendencies, and the patients make frequent attempts on their own lives and those of others. For the most part the orientation of the patients is unimpaired. Usually they comprehend clearly where they are, reckon time correctly, and do not fail in the recognition of their acquaintances. Along with the orientation we can say that the perception of internal impressions and consciousness are not seriously impaired. They understand thoroughly all that happens to them and everything that goes on about them, even when they appear the most stupid. Some patients also seem to retain all their mental faculties in periods of great excitement and activity. After the onset of the disease, in the majority of cases, there is a rapid decline into the depressed state, in which it may be said the symptoms become more prominent and pronounced. In this state orientation frequently suffers and is decidedly impaired by delusions. Brownrigg[2] says that the difficulty is not in the inability of the patient to perceive or reflect rightly, but it is because the morbid and false perceptions are more persistent and insistent than the true perceptions. The patients undoubtedly acquire these delusions as a result of various hallucinations which present themselves. These hallucinations are of many kinds and descriptions. They often diminish gradually as the disease progresses, and reappear again in the last stages. In some cases, however, they are persistent throughout the entire disease. The hallucinations are most frequently those of hearing, and following these, and occurring less frequently, are hallucinations of sight and feeling. Very often the hallucinations are of a disagreeable character, and the patients are apt to become depressed and suspicious as a result of them. The delusions which accompany the hallucinations of this kind are, of course, of the same type. The patients imagine that they have committed most atrocious crimes, that they are unworthy and unfit to live, etc. In this state they frequently manifest suicidal tendencies. Kraepelin speaks of the augmentation of these various delusions by fabrications. The patients claim to be persons of distinction and control, and that they are antagonized on this account. In nearly all cases the judgment is greatly impaired. Great difficulties are encountered when these individuals are called upon for some decision. There is most always difficulty in comprehension, and a distorted conception of the exact surroundings. The train of thought is also disturbed. The expressions of the patients seem to be disconnected, and this condition progresses with the disease leading up in some cases to a complete incoherency and confusion of speech. In many cases the train of thought gives evidences of stereotypy, the patients using certain rhythmic, meaningless, and peculiar expressions continually in their speech.

Memory is progressively deteriorated. At the onset of the disease patients usually can give their past history very accurately, and the knowledge gained in school seems to be held very tenaciously. The disease does not progress far without marked deterioration being noticed. There is especially loss of memory for recent events in the excited or stuporous condition. The attention is usually greatly impaired in all stages of the disease. With difficulty the patient's mind is held on any subject for even a very short period. Every interest in the subject rapidly disappears, and there is a relapse into the former state. In the most advanced stages it is impossible to arouse any active attention. The patients do not attempt to learn or comprehend anything in this state, notwithstanding the fact that the perceptive powers are not always markedly impaired. The disposition of the patients, and with this the emotional life, suffer quite serious changes. At the onset of the disease we frequently see a sad, anxious, and careworn expression upon the patients, indicative of a depressed mood. Paroxysmal laughter and crying alternately is not infrequent. Later the patients usually become apathetic, and utterly devoid of all emotions. They lose all affection for relatives and friends, and experience no change of feelings within themselves, no matter how great the stimulus may be. Not infrequently we find a morbid expression of the religious or sexual life, usually leading to excesses along these lines. In cases where these morbid feelings occur they are usually found in the early stage of the psychosis, and generally disappear as the disease progresses.

In this class of cases we usually note a marked change in the power of will or volition, and in the latter stages it most always entirely disappears. With a change in the will power we, of course, expect a corresponding change in conduct and action. There is usually a decline in all ambition and desire to be active. The patients are usually idle, neglect their personal appearance and obligations to others. They are in general hypersuggestible, although frequently excitable and untractable. In the excited periods the hebephrenic is liable to perform all sorts of impulsive acts. There is frequently an inability to express the sudden impulses on account of other impulses which are stronger, developing and overpowering the weaker ones. In this way the symptom of negativism develops, which is more characteristic of katatonia, and will be considered fully under that form of dementia præcox.

Katatonic Form.—This form of the disease is characterized, according to Kraepelin, by a peculiar condition of stupor with negativism, automatism, and muscular tension; excitement with stereotypy, verbigerations, echolalia, leading in most cases with or without remissions to a condition of mental deterioration. The onset of this form is not unlike that of the depressed type of hebephrenia. The patients are usually noticed to be quiet and seclusive for some time before the direct onset of the psychosis. The same difficulties of thought are prominent symptoms, as is the anorexia, cephalgia, and general nervousness found in hebephrenia. It may be said that the clouding of consciousness is more marked and the perception of internal impressions is more impaired earlier in the disease than in hebephrenia. Consequently, the patients become disorientated sooner than in the hebephrenic type.

The judgment is of course much impaired, as is the train of thought. There is a decided amount of incoherency and disconnection in the speech of this class of patients. It is with difficulty that the attention can be held for any length of time. Memory suffers about the same changes as in hebephrenia. In the latter stages of the disease there usually comes a complete cessation of the psychic function, and consequently there is a complete inhibition of all thought. Early in this form of the disease hallucinations appear with their customary delusions. Kraepelin thinks that the delusions are usually of a religious nature, but the experience in the majority of American hospitals does not substantiate this

assumption. While a great many of the delusions are religious in character, it cannot be said that they are in predominance, for many others of widely different character are equally prominent. We find the emotions in decided harmony with the hallucinations and delusions.

During the period of depression which follows or occurs at the onset of this form of the psychosis there develops a series of conditions which are most characteristic. The first of which we will speak is katatonic stupor, and the symptom most prominent in this stupor is negativism. As we said in considering hebephrenia, negativism results in the inability to express certain voluntary impulses on account of their being overpowered by stronger impulses, which are inhibitory in character. This strange condition is easily demonstrated in certain patients; they begin to act readily, but these voluntary impulses are not strong enough to resist others which arise, and the patient does exactly the opposite of the thing desired or asked. Some of the impulses are those which are most natural and to which the patient is most accustomed. They shut their eyes when told to open them, and conversely; they refuse food when it is offered to them; they object to changing their position, etc. Their actions appear to the casual observer as pure stubbornness. All active attention is inhibited by negativism, as is seen by the patients, developing the attentive attitude when the negativism is gradually disappearing.

External impulses do not often affect the symptom, negativism. It is certain internal impulses interrupting the natural impulses which move the patients to arouse suddenly from their stupor and commit some act. As is oftentimes the case, these internal impulses are persistent, and they frequently repeat themselves, causing in these patients what is known as stereotypy, a condition in which the movements and attitudes of the patients are always performed in the same manner, and, as it were, become stereotyped. Stereotypy with impulsive action characterize katatonic excitement, which usually follows the stuporous condition. Along with the stereotypy in these cases can be mentioned the mannerisms of speech and facial expression and the verbigerations most common in this form of the disease. The every attitude of the patients, their gait, writing, speech, etc., portray the action of the internal impulses which are continually interrupting the natural impulses.

In the condition of katatonic excitement, owing to the serious impairment of the volitionary impulses and the inability of the natural impulses to inhibit correctly, there develops a condition known as automatism. In this condition, as the name implies, the actions of the patients are automatic, and this, together with the stereotypy, presents a very interesting combination of symptoms.

A large majority of these cases also exhibit echolalia and echopraxia at some period during the condition of katatonic excitement. The patients act readily on the suggestions of others, and perform the routine duties of the ward in a willing manner. There seems to be a heightened susceptibility of the will in these cases, and especially in those where the mind has become very much deteriorated.

Paranoid Form.—This type of dementia præcox is made to include two types of cases, one in which the hallucinations and delusions are incoherent, and the other in which there is a decided coherency. These delusions usually persist for years, notwithstanding the fact that they are attended with gradual mental deterioration. Kraepelin distinguishes the delusions and hallucinations of the paranoid form from the hebephrenic and katatonic forms, in that in the last named forms the delusions and hallucinations disappear as the deterioration progresses, while in the paranoid form such is not the case. He makes the distinction between the paranoid form and true paranoia in that in the former form the onset is usually more acute, and accompanied by other symptoms of dementia præcox, and the mental deterioration is more rapid than in paranoia.

In the first class of cases the patient usually has two kinds of delusions, those of persecution and those of grandeur. They are decidedly incoherent and changeable. They are attended by a slight degree of motor excitement and deterioration of mind. The hallucinations which accompany, and the delusions, are usually of hearing. Patients imagine, when they hear the sound of voices, that the conversation is relative to themselves, and they frequently become fearful, agitated, and quite emotional. In the early stages of the disease there is no clouding of consciousness or disorientation. During the later stages there is gradual impairment of these qualities. The capacity for mental work is considerably lessened, although some patients are able to perform certain mechanical tasks under the supervision of others. In general the patients are exalted, irritable, and loquacious. The train of thought based upon the morbid delusions is, of course, incoherent, although questions relative to the delusions may be answered coherently and relevantly. Memory for past events is nearly always good, while that for recent events is somewhat impaired. The powers of attention and volition suffer gradual impairment as the mental deterioration advances.

In the second class of cases we find the same delusions of grandeur and persecution, but they are in most respects quite coherent. The delusions are often expansive, taking the form of those found in dementia paralytica. In this class, as in the first, the hallucinations are of hearing, and are intimately connected with the delusions. The persecutory and expansive delusions are more gradual in their development than those of the previous class.

The consciousness and train of thought remain unimpaired in the majority of cases. There is some slight disturbance of the emotional life, the patients usually in the first stages being depressed, and later quite cheerful and ecstatic. Kraepelin speaks of the ideas of spirit possession being prominent characteristics in some cases.

Physical Symptomatology. The physical symptoms of the three types of dementia præcox will be considered together briefly. The most prominent symptom of this psychosis is found in the general disorder of nutrition. There is usually some disturbance of the vasomotor system which may cause blushing, cyanosis, bromidrosis, and hyperidrosis in some cases, and all degrees of dermatographia. The cardiac action is usually impaired, producing irregular, accelerated, or retarded movements. The patients frequently lose in weight and suffer with anorexia, intense headache, and insomnia. There is an amenorrhœa in certain cases, together with a complete cessation of sexual desire. In a large percentage of cases in the latter stages of the disease there is a partial return to the normal, the patients increasing in flesh; the heart action improves; the appetite returns, and sometimes becomes excessive. This condition, however, is usually quite transient, and many of the body functions fluctuate as the disease progresses. Kahlbaum and Jensen describe convulsions of the epileptiform and fainting types occurring in dementia præcox, also cramps

and tetanic contracture of certain groups of muscles; apoplectiform convulsions with combined paralysis, etc. Kraepelin thinks these attacks occur in about eighteen per cent. of all cases. He also speaks of hysterical convulsions and paralysis, aphonia, hiccough, and certain choreiform movements, which he designates as "athetoid ataxia."

The pupils are usually dilated, but react readily. The deep and superficial reflexes are exaggerated, and there is an increased excitability of nerves and muscles. A state of increased muscular tension sometimes exists in katatonic stupor. This condition is frequently attendant to negativism of the body functions such as the retention of urine and feces, and some authors regard this as a partial cause of the increased tension. There occurs in this stage of increased tension frequently a uniform position of the body or the parts, which in some patients is very difficult to change. They often remain in this characteristic position for long periods, only changing it when compelled to do so. When there is less muscular tension there often exists a condition known as "cerea flexibilitas," in which the patient can be changed into any position, whether uncomfortable or not, and will remain in this position indefinitely.

In a good many cases of dementia præcox there is an increase in salivary excretion. In one katatonic patient, to my knowledge, 200 c.c. have been collected in three hours. Kraepelin reports a case in which 375 c.c. were collected in six hours.

The temperature is in most cases subnormal, but in some cases of excitement it has been known to rise to 102 degrees.

Prognosis.—Dementia præcox runs a very progressive course, and usually ends, with few exceptions, in mental deterioration and apathy. The course in the hebephrenic form is frequently interrupted by great improvement in the patient's condition and partial return to the normal state. The degeneration, however, usually progresses more rapidly when a remission occurs. The disease runs a course lasting in most cases for years. The profound states of dementia are sometimes reached in from eighteen to twenty-four months after the onset of the disease, but in most cases the length of time is much longer. In hebephrenia there are often short periods of increased excitability, incoherence of thought, clouding of consciousness, irritability, aggressiveness, etc., lasting for an hour or more, and then subsiding. In katatonia there is usually the period of depression, followed by the period of excitement leading on to mental deterioration. Sometimes the period of excitemnet does not occur, and the patient passes from the stupor into the demented state. The katatonic usually succumbs as a result of some intercurrent disease, and not from the psychosis direct.

In the paranoid forms the course is progressive, and is characterized by the absence of remissions. As the disease progresses the mental deterioration becomes more marked, and the patients gradually become disorientated and incoherent in thought, leaving them completely incapacitated for mental work.

In giving statistics, we quote in the main from Kraepelin. In hebephrenia, seventy-five per cent. of the cases reach a state of profound dementia; seventeen per cent. of cases reach a state of deterioration not so far advanced, and eight per cent. of cases are cured. In katatonia, eighty-six per cent. of cases end in mental deterioration of different stages, and about fourteen per cent. seem to recover. In the paranoid form, the outcome, according to Kraepelin, is always deterioration.

It can be said that dementia præcox never terminates fatally. Those afflicted with this psychosis usually die as a result of some other disease.

Etiology.—The etiology of dementia præcox has not as yet been definitely established in every particular, but a few facts can be said to have been accepted. Kraepelin says that more than sixty per cent. of the cases appear before the twenty-fifth year. When we consider the various forms we find a still wider variation. In the hebephrenic form almost seventy-five per cent. of cases appear before the twenty-fifth year. In katatonia we find a still smaller number, only sixty-eight per cent., and in the paranoid form only forty per cent. appear before the twenty-fifth year. The hebephrenic form is most prevalent (Kraepelin, sixty-four per cent.) among males, and in the paranoid and katatonic forms the females are said to predominate.

The most causative factor of this disease of early life seems to be a defective and deficient heredity. We find in nearly all patients of this class a constitution which is distinctly neurotic, and this condition to be due undoubtedly to a similar constitution in the patients' ancestry. We have an unstable nervous system of this kind subjected to severe strains and stresses either of mental or physical nature, and we have a psychosis produced due to the exhaustion of the nervous system. This condition in the majority of cases is typical of dementia præcox. These strains and stresses in a large number of cases come on at pubescence when the sexual functions are becoming prominent and most frequently result in excessive sexual indulgence. At this period, and the years following, the body is more susceptible to both mental and physical overwork, and we frequently find this peculiar psychosis developing as a result.

Certain febrile diseases, such as scarlet fever and typhoid fever, are sometimes etiological factors. Peterson[3] gives frequent child-bearing as sometimes a cause. Frequently we find the psychosis developing after the birth of the first child. A case of this kind is reported under the metabolism work on dementia præcox done by the author.[4]

Brain trauma and hemorrhages may be said to be the cause of a small percentage of cases, also the excessive use of alcohol and drugs, which affect the metabolism of the nerve cells directly.

Pathology.—In regard to the pathology of dementia præcox there is still some doubt. Some authors regard it as a purely functional psychosis, while others give it a definite pathological basis. That there is a lesion in the brain cortex seems quite probable, judging from the clinical course of the disease. The fact that a small percentage of cases are cured is indicative of a brain lesion, which is sometimes capable of being repaired. Kraepelin, in his Clinical Psychiatry, reports the findings of Alzheimer in a case of acute delirium, which he classed with katatonia. He found the nucleus swollen and its membrane wrinkled, the cell body shrunken, the neuroglia fibers increased and attached to the cell in a peculiar manner. He reports also a displacement of the neuroglia cells, very large ones being found in the deeper, instead of the superficial layers of the cortex.

The theory of autointoxication has been given some consideration. This is due to the intimate connection of some cases of the psychosis with pubescence, pregnancy, pueperium, disturbance of the menstrual function etc.

That there is a marked change in the nutritive

processes are to be regarded as primary conditions causing a neurotrophiosthenia which produces this psychosis, or whether they are to be regarded as secondary to the mental disturbance, is a question to be proven. What the changes in the nutrition are has not been thoroughly investigated, and the causes of these changes and the results of them still remain an unsettled problem.

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PES PLANUS FROM THE VIEWPOINT OF NEUROLOGY.*

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THE relatively large number of cases coming to the clinic of Prof. Collins at the New York Post-Graduate Hospital for the relief of pains in various parts of the body, in whom after careful examination flatfoot or weakfoot is found as the sole attributable source of such pain, has led me to believe that the discussion of this subject might be profitable.

Although the pain of flatfoot is usually of the feet and legs, it may be of any part of the body, for I have seen improvements of flatfoot in most instances followed by a cessation, or at least amelioration of aches and pains in remote parts. From an analysis of 125 cases, I feel justified in regarding congenital or acquired weak and flatfoot a source of irritation capable of causing widely-scattered pains and discomfort to the degree of depression and exhaustion in particularly susceptible subjects. In all cases and all degrees of flatfoot we naturally expect to find local pain or tenderness about the foot, ankle, or leg, and these sensory disturbances frequently are not commensurate with the development of deformity, so that in the beginning destruction of the joint, long before any noticeable change of outline, the pains are apt to be most severe and continuous. Quite frequently also the pains appear localized at first about the knee or hip joints, and later travel downward to concentrate themselves about the member at fault. In 50 cases pains extended to the thighs; in 47 there was great pain in buttocks and lumbar region; in 39 the pain was first felt in hips, thighs (anteriorly), and inguinal region; in 34 cases there was backache up to the shoulder blades; in 21 extreme general irritation, followed by depression; in 17 there was pain in back, also right or left arm; in 4 cases there were restlessness, insomnia, pains worse at night in opposition to the general rule that resting the feet relieves pain.

The dysesthesias were variously described as pressure constriction, numbness, dull ache, or pains of shooting, stabbing, pulling, or throbbing character. The extremely ingenious method of taking an impression of the feet upon specially prepared paper by means of the ferrocyanide of iron reaction having failed so often to reveal deformity, simply because of the insidious joint change residing only in the upper parts, we must rely upon the following:

1. Other causes being excluded, increase of pain on active and passive manipulation of the joint, on standing particularly, on walking, jumping; tenderness on pressure over some or all the bony prominences, as the scaphoid, metatarsal heads, os calcis, etc., and impaired mobility of the ankle joint somewhat impeding adduction, limiting extension, and causing a feeling of constriction or weakness of the joint, point to weakfoot, beginning flatfoot.

2. More advanced cases present greater prominence of the internal malleolus and astragalus, with corresponding depression or gradual effacement of the fibular landmarks. Weakness is more pronounced at the inner side of the foot and ankle; there are strain and ache of these parts and the calves. Coldness, numbness, hyperidrosis, all aggravated by atmospheric changes, are noticed. Discomfort and tire after short walks necessitate frequent rests, during which the joint components partially reposit themselves in the normal order, shortly after again to be jarred and jounced, and stretched apart, so as to cause renewed and increased torture. The patients become more or less awkward in their gait, watch their footing more in order to avoid rough or uneven places (cobblestone pavements, ruts, obstacles), feel less secure on their feet, use their heels more than their toes, and wear away the inner side of the sole of the shoe.

3. When the deformity has become evident the gait and station may change to an actual wobbling, limping, or staggering, and slight efforts of the pedal extremity may require such an excess expenditure of energy and force as to tempt the patient to remain inactive, or at least to save locomotion. As above mentioned, the pains usually are not so severe in this stage, being replaced by a transient dull ache.

Let us recall that the arch of the foot is formed in a longitudinal direction by the oscalcis, and the posterior part of the astragalus as its shorter, posterior limb, while the rest of the tarsus and the five metatarsals may be regarded as constituting its longer anterior portion. The junction of these, the calcaneocuboid and the astragaloscaphoid articulations, is made more stable and useful by a number of ligaments, the calcaneonavicular ligament particularly being considered one of the strongest and most resilient in the body. The summit of the arch is the articular surface of the astragalus, which supports the tibia and fibula. Transversely from within outward a half arch is formed by the gradual downward slope of the central portion of the foot till its outer border rests upon the ground. The fundament or base of these arcs is composed of the tubercles of the oscalcis posteriorly and the metatarsal heads anteriorly.

The action of the foot is that of a lever of the second order. In normal walking the weight of the body is lifted by the calf muscles, the power, acting upon the metatarsal heads as the fulcrum. To use this power properly and economically the relation of the foot to the leg should be that of a plane passing through the center of the knee and ankle joints to the center of the foot anteriorly, *i.e.*, the second toe. Thus the forefoot, in lifting over the fulcrum, is slightly adducted, so that a degree of intoeing and parallel action of the feet is natural and normal, and is seen in all primitive people and those who walk barefooted. Outward rotation (abduction) of the feet, as taught civilized people, and practised to an extreme in armies, is unnatural, not hygienic, and should be condemned. In weightbearing, while standing, the feet are normally abducted, and the internal malleolus seems to slide downward, because of slight inward displacement of the astragalus. This latter, the passive weightbearing, not walking, attitude is assumed by the weak or flatfoot, and may be called a fairly constant, early symptom.

*Read before the Brooklyn Neurological Society, October 25, 1906.

When the arch is originally low, or of congenitally weak, bony development, as is apt to be the case in the rachitic, tuberculous, or so-called scrofulous type of subjects, considerable deformity may exist without pain or disability, due to early accommodation of the readily-yielding components. In the beginning collapse of the arch, the astragalus and scaphoid are lowered and rotated inward: this is followed by a settling of the internal border of the oscalcis and a depression of its anterior extremity. This may progress to such a degree of dislocation as finally to cause the entire inner sole to rest upon the ground, producing a callosity.

The anterior and post-tibial nerves, directly supplying sensation and motion to the ankle joint and tarsus, will be the first, we may assume, to respond to the irritation caused by the gradual continuous change. In many, in fact at least 45 per cent. of these cases, there is not only no localization of painful sensations in the lower parts, but even a high degree of radiation, as above described, so that one may infer a spreading or referring of pain by way of the branches of the sacral and lumbar plexuses, which would perhaps account for symptoms felt in the regions of these cord-levels. Pains in the upper parts of the back, trunk, and arms may possibly be interpreted as due to strain in favoring the impaired limb by postural measures, thus further disturbing the equilibrium eventually. It must also be borne in mind that a great number of these patients are neurotics, or otherwise physically below par, so that even mild stimulation is reacted to excessively and extensively.

The ages of the individuals examined varied between 16 and 64 years; the majority were in the second and third decade. The duration of the trouble, counting from the time of beginning pains in the feet or legs, was from one month to ten years. 85 per cent. of the cases being of the acute or subacute form. The occupations represented here agree well with those commonly cited as favoring the development of weak or flatfoot, *i.e.* (1) those requiring much standing, particularly when limited to a confined space (waiters, salesmen); (2) conditions resulting in a weakening of structure from comparative disuse, those of sedentary habits especially, with limbs in cramped positions, as tailors, squatting on tables; (3) those calling for an excess of work with consequent weakening, as in agents, canvassers, and letter-carriers. To this latter class may be added the large number of sewing-machine (foot-power) operators, largely represented at this clinic by the lower East Side Hebrews, some of whom were at work before their fourteenth year, turning the wheel eight or ten hours daily.

Treatment.—Foremost is rest in the horizontal position, to relieve the feet and legs of all strain; passive and active manipulation of the parts, electricity, baths, and massage aid in eliminating inflammation. Fixation of the feet for a certain period of time in a position of flexion, inversion, and adduction by means of strapping, bandaging, or in bad cases plaster casts, is beneficial. In extreme cases surgical measures may be necessary to secure restoration of function. Unfortunately, the majority of our patients cannot afford this more thorough, but slow, rest treatment, being compelled to earn their daily bread; they ask relief to enable them to continue their avocation.

Here the much vaunted arch supporters and braces made of metal, leather, or hard rubber were found on actual trial not to sustain the reputation they undeservedly bear, unless properly fitted by the orthopedist.

The wage-earner is best served by shoes constructed on scientific principles—broad, substantial, roomy, with stiff counters and built-up soles and heels. Exercises carefully adapted to individual needs, such as balancing on tiptoe, moderate dancing, alternately raising the body on the toes or heels, and inverting the feet are of great value.

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THE HYOSCINE SLEEP IN OBSTETRIC PRACTICE.

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Since the rediscovery of the conditions under which the deep sleep, resembling death in its soundness, of which the tradition had come down through the ages, could be produced, men in various parts of the world have made use of it to obtain insensibility to pain. A few have made use of it in the practice of the obstetric art, and some have furnished to me notes more or less complete of their experiences. From their notes I have gathered certain facts which I have used to form the material for this thesis, which may be considered, I believe, as a statement of the conditions in fact and in practice, on which that great improvement in the obstetric art for which we have long been looking, may reasonably be grounded.

The actual results which have been attained may be summarily stated in very few words; the patient slept, labor came on, and progressed in accord with usual conditions, normally in relation to the details. The labor was not prolonged, far otherwise, and in no case was it needful to use an anesthetic, although the forceps was used thrice. The only case in which the mother showed any signs of awakening was not one demanding interference. No results influencing the infant unfavorably were observed, although most anxiously looked for. Such is a summary of the results, but that this summary may be duly appreciated it is well to consider the whole proposition, theorem, and demonstration in detail. The hyoscine was administered hypodermically in doses of 1-100 grain, in combination with morphine, 1-4 grain, and cactin 1-67 grain. This amount was given in solution in 1 c.c. of water, and repeated as required. Much stress is laid upon the absolute purity of the ingredients for reasons which are obvious, but it is of special moment when so small a dose as that of the hyoscine is used that the nearest possible to absolute purity should be attained.

As a rule, the remedy was given hypodermically, but in one instance the first dose was given per os, and, except for a delay in taking effect, no change from the normal was seen. The first dose was given as soon as the first stage of labor was certainly begun, and was in most cases sufficient to hold the patient until the so-called expulsive pains were distinctly pronounced. The instant the patient began to show the least evidence of perception, the second dose was given. In the cases requiring the aid of the forceps a third dose was given in two instances, but not in the third case, and probably the second forceps case did not really need the third injection.

The effect upon the patient does not show the variation which might in some sense have been expected, so far as the depth of the sleep and the length of it is concerned, nor did the doses have the cumulative effect which might have been expected. On the question of the length of the nap one group of cases suggests six hours as the normal duration, while another group gives eight hours from the time the second dose was given. But in the case in which there was an eight-hours' sleep,

the time between the two doses was less than in those in which the sleep was for six hours. The exact relation between the doses and the length of the nap is still very indeterminate.

In one instance only was any effect upon the unborn child alleged. In this case the os uteri was dilating, but slowly; and, as the woman complained of the exceeding severity of the "cutting and tearing pains," the physician gave the hyoscine by the mouth rather sooner than the apparently best practice, when the intention is to give the second dose as soon as true labor begins. The mother had repeatedly declared that "this child kicks something awful," and continued to complain for at least four hours after the dose was given, at which time she was becoming drowsy. She was soon fully under the influence of the drug, the unsatisfactory pains of the first stage continuing until she was fully asleep; after this they rapidly improved. The woman slept only five hours, and when she awoke the os uteri was still undilated. The pains continued after she awakened in about the same force as during her sleep, but she suffered much less than before her nap. She now noted that the child had ceased to kick, and it was some hours before "the boy recommenced his exercise, which he did gradually, and continued to cause discomfort as long as he was able." The words are his mother's, who, in describing the sensation, said: "If he is such a kicker all his life he will make lots of trouble." The os uteri was not fully dilated until well on in the evening, and the mother having received a second injection at the beginning of real labor slept until after the birth of her child, becoming somewhat restless at the end, but not regaining consciousness until after the baby had been cared for and all provisions made for the comfort of the mother. In one other case there was strong evidence that the baby was put to sleep, but in neither case is it proper to regard the fact as actually proven. All direct evidence of long-continued interference with the actions of the child after birth is wanting, and in only one instance was any effect positively affirmed by the physician attending.

Apart from the influence upon the direct progress of the labor, the effect upon the mother was most noteworthy, first as quite hindering the mental disturbance which pain and suffering in all cases produce. The effect was fully covered by a remark made by one who used it: "Objectively, as evidenced by the mother's condition, it appeared a preposterous proposition to say that she had given birth to a child." The mother shows no signs of exhaustion, and although the resistance (passive) of the tissues must be quite the same, it can be clearly seen that no spasmodic resistance, by inhibition due to pain, in any way interferes. This absence of the inhibitory (active) resistance is perhaps the most remarkable effect produced. One woman whose labors had been notably tedious was delivered of her fourth and largest baby in less than two-thirds the time of the shortest of her previous experiences, and in one-third the time of her longest. She had always been notably restless and hard to manage, but in this case she simply slept through the whole series of phenomena; she did not awaken until she had been removed into a clean bed and provided with all things needful. At the birth of the head, although soundly sleeping, she made certain spasmodic actions and changes of position which caused some surprise to the nurse and attending physician. Although the attending physician described them as carefully as possible, the intention of his words is not clear enough to my mind to justify any attempt to repeat the account, but the conviction is forced upon me, as it were, that the physician's two statements, "Her actions showed that certain combined movements should occur which are inhibited in the large majority of cases," and "It was as if I had seen the natural action of a woman for the first time," really contained an important truth.

If an attempt is made to describe the phenomena from the time when the patient falls asleep in the first stage of labor to the end of the slumber, it must be admitted that the remarkable character of the phenomena is too plain to be missed. If Byron Robinson's theories are accepted in full, and we regard the action of the muscles usually controlled by the cerebrospinal system, we cannot but wonder at and question how the coordination is maintained. In two cases the woman rolled onto the left side, partially flexed the left leg upon the thigh, and the thigh upon the pelvis, so that the child was, or rather would have been, supported and guided onto its back by the act of extrusion. The right lower extremity extended to the extreme, the toes pressed against the foot of the bed, gave a "fixed point" for the muscular leverage.

In the majority of cases the heels were brought up close against the buttocks, and in these cases the muscles were made tense, lifting the buttocks completely off the mattress at the instant of the birth of the head, yet there was no sign of awakening. The steady, slowly increasing, and tremendous force exerted by the abdominal muscles during the expulsive pains, attracted the attention of all observers. One who has seen great numbers of labors said that he never saw anything like it before, and added, in an extended opinion, that the great advantage over chloroform is easily seen in that, with the hyoscine sleep, reflexes are greatly augmented, not suppressed.

All who have made use of hyoscine a few times appear to regard this restoration of the truly natural conditions as being of almost as much importance as the unconsciousness from sleep. "If we use hyoscine the mother cannot do mischief by her own excited and voluntary or semivoluntary actions," is a remark made by every user.

It appears probable at first sight that there must be greatly increased danger of perineal rupture, and I so suggested to some whom I was able to question. All of them said that proof of this proposition was wanting, and one man said: "I am quite sure that you are wrong in this opinion, for the rupture of the perineum, when not due to the haste of the accoucheur, is due to the excitement of the mother. From what I have seen I am inclined to regard the dilatation of the perineum much as I regard the dilatation of the os uteri. It is gradual, and the obstruction, although usually needless now, must have been of importance once. The waking mother makes convulsive efforts to overcome the resistance of the perineum, and when she feels the obstruction has a titanic, if not a tetanic spasm, to force the head by, and then the shoulder catches. But in the hyoscine sleep the first perineal pains are not convulsive, and, instead of two or three ineffectual attempts ending in an almost convulsion, the sleeping woman has a dozen small pains gradually stretching the sphincter, and, beside this, the head is not held so firmly against the sphincter, or rather against the fold of submucus tendon, that this cannot roll; and after once or twice trying the whole apparatus—tendon, muscles, and mucous membrane—slips out of the way, and the last expulsive pain comes on. For my part, I regard this use of hyoscine as important because it has restored the conditions of natural labor: I know my expression is bad, but somehow hyoscine gives the management of labor back to the reflex

ganglia from which the brain had, in women, taken it away."

Naturally, the objection is made that in some ways this theory proves too much; that in the apes the difference in position made the perineum a less important organ, but this objection is countered by saying that we really know but little of labor in the highest apes, and nothing of what it may have been in other—the simio—human race. "Anyway, in the hyoscine sleep the 'perineal pains' are more orderly," insisted this physician.

In the cases referred to in which the use of the forceps was judged to be needful, the cases in no way differed from others of their kind in which a more transient insensibility is obtained by the employment of familiar anesthetics, but owing to the activity of the natural forces of parturition the delivery in fact rather suggested the use of the forceps in the conscious woman's behalf than in that of the unconscious one. No special details or unusual reasons for the use are recorded. Certainly the use had no connection with the insensibility of the patient. One or two suggestive facts were mentioned in this connection, as if the accoucheurs had in their minds a strong suspicion, amounting almost to a convinced opinion, that the conditions of the use of the forceps would be found to differ, and perhaps to differ profoundly, from the cause, which is by many believed to be the cause most frequently demanding the use, namely the threatened exhaustion of the mother. This because all who have made use of this narcotic, without any exception, insist that exhaustion, even to a small degree, is hardly to be perceived. The absence of excitement, the regularity, and above all the maturity of the expulsive efforts, the fact that none of the vitality of the mother is expended in useless and exhausting, because ineffectual and disorderly efforts, promises to lessen greatly surgical interference, the special interference demanded by the mother's exhausted state.

Speculations and Conclusions.—Such data as are given here must be regarded only as so many facts, observed by competent and experienced men indeed, but considered simply as facts they are quite barren of usefulness, for it is only when we consider them as the data to be examined by logical processes that they, becoming living and productive, are the foundation on which we can erect a useful theoretical structure.

In the first place, the importance of the hyoscine sleep in obstetric practice is amply demonstrated, and experience shows that it can give us all the aid in quieting the patient that any narcotic can give, and in addition it gives us a practical anesthesia of prolonged duration, and gives this anesthesia without risk to either mother or child. Further than this, we have the most abundant proof that this practically anesthetic sleep is quite without danger because the respiratory system is in no way interfered with, nor is the heart's action restrained. It is also clear that the reflex actions which find their point of departure peripherally and return to the periphery again from spinal and sympathetic system ganglia, specifically from the "pelvic brain" of Byron Robinson, are not restrained, but rather they are augmented by the action of this drug. Clearly, then, it is a drug sedative to the cerebrospinal axis, but not to the ganglia connected with the reflexes of common life.

This fact alone is of no trifling importance, but the import grows when we note that in shutting the door, so to say, to the influence of all the inhibitory actions, it leaves quite unopposed the influence of the sympathetic system, and the physician using it need have no fear of any accidents to disturb the normal evolution of a birth.

It is, then, for the accoucheur the ideal anesthetic, one which so far as we yet know he can use to obtain the desired effect without fear of an overdose. So far as I have been able to learn no one has yet had any experience with an excessive dose. Until this excessive dose shall have been given our information remains in a sense defective, but we certainly know that all we need to give can be given without risk or danger.

Finally, and perhaps of all the most important, this use of hyoscine has stripped motherhood of its horrors. The dread of pain has been the great dread of the coming birth; until this discovery the "pains of maternity" remained a horrid and incontestible truth, but these have vanished and the exhausting ordeal of motherhood is gone, to be seen no more.

163 Fulton Street.

WORKING FORMULÆ TO FACILITATE THE PERCENTAGE MODIFICATION OF MILK.

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The percentage modification of cow's milk now so generally used for the feeding of infants has brought with it a plague of petty mathematics, from which the practitioner is wont to shelter in the kindly and accommodating "round number," and accuracy is sacrificed to convenience.

Accuracy is a very desirable quality in milk modification, and the following contracted formulæ, while simple, will certainly be found serviceable in this respect. They are simple enough to be remembered, but perhaps a better plan would be to have them on a card for easy reference. They are designed for the rapid and accurate determination, for a definite quantity of a given modification, (I.) of the percentage cream necessary for dilution, (II.) of the quantity of the cream required, and finally (III.) of the quantity of gravity, or 16 per cent. cream required, which when diluted with whole milk will give a percentage cream as determined by I., and to the quantity determined by II.

Rule I.—The fat percentage (f) of the modification multiplied by 4 and divided by the proteid percentage (p) of the modification will give the fat percentage of the cream required for dilution, or, graphically: $\frac{f \times 4}{p}$ = fat percentage of cream required.

Rule II.—The total quantity in ounces (n) of the modification multiplied by the proteid percentage (p) and divided by 4, will give the ounces of cream required for dilution: $\frac{n \times p}{4}$ = ounces of cream required.

Rule III.—To determine the quantity of 16 per cent. cream required to make, with a proper quantity of milk, a desired quantity (N) of cream of a stated fat percentage (F): $\frac{N\,(F-4)}{12}$ = ounces of 16 per cent. cream required.

To make an application of these rules we will suppose that we require 48 ounces of a 4-7-2 modification.

By Rule I. $\frac{f \times 4}{p}$ = percentage cream required, in this case $\frac{4 \times 4}{2} = \frac{16}{2} = 8$ per cent. cream.

By Rule II. $\frac{n \times p}{4}$ = quantity of 8 per cent. cream, in this case $\frac{48 \times 2}{4} = \frac{96}{4} = 24$ ounces.

Having ascertained by the two previous equations the quantity and fat percentage of the cream required, 24 ounces of 8 per cent. cream, we have still to derive that cream from the gravity cream, and, by Rule III.,

$\frac{N\ (F-4)}{12}$ = quantity of 16 per cent. cream required, in this case $\frac{24\ (8-4)}{12} = \frac{96}{12} = 8$ ounces, 16 per cent. cream. Here we have quickly and accurately determined that, to make 48 ounces of a 4-7-2 modification, we require 24 ounces of 8 per cent. cream, or its equivalent, 8 ounces of 16 per cent. cream, and 16 ounces of whole milk.

Of course one can see at a glance the percentage cream and quantities necessary for a 4-7-2 modification, but in many cases they are not so obvious, and in these the formulæ will be found particularly advantageous.

Contracted for easy reference, the formulæ would be as follows:

I. $\frac{f \times 4}{p}$ = fat percentage of cream required to make a *modification* with fat at f per cent.

II. $\frac{n \times p}{4}$ = quantity in ounces of cream required to make n ounces of *modification*.

In Rule I. and II. p is the proteid percentage of the *modification*.

III. $\frac{N\ (F-4)}{12}$ = quantity of 16 per cent. cream required to make N quantity of cream with a fat percentage of F.

Since Rule III. is based on a general formula for the reduction of a cream of a certain fat percentage to one of a lower fat percentage, those who use a 12 per cent. cream for their modifications may modify Rule III. for 12 per cent. cream as follows:

$\frac{N\ (F-4)}{8}$ = quantity of 12 per cent. cream required to make N ounces of cream of a fat percentage of F.

206 West Ninety-fifth Street.

Poison Ivy.—A. Hadden has observed that, if the skin is moist from perspiration, the poison of rhus is more apt to take effect than when the skin is dry. The poison is more active during the summer months and the last two months of spring and the first two months of autumn. It does not seem to be active during the other months of the year. The nature of this poison has not yet been clearly defined. On the leaf and stem of this vine there is a fine, hairy formation on both the upper and lower sides. To this is attributed the chief agency of communication of the poison. Both flies and mosquitos are doubtless the carriers of these small, hairy particles as well as of the sap to many sensitive skins. It is doubtless these insects instead of the innocent breezes which carry this poison. The writer advises those with skins sensitive to the poison to wear veils and gloves when in the vicinity of the vine. He has had the greatest success in the treatment of the poison by means of Labarraque solution, a solution of chlorinated soda. In the first stage it may be used in full strength, but should be washed off at once with cold water. This is followed by an application of a weak solution of the same in the proportion of a tablespoonful of the solution to a pint of water, by means of a fold of cotton or linen fabric kept constantly applied for several hours. The application of Labarraque has never failed in the writer's hands.—*Medical Review of Reviews.*

Sahli's Desmoid Reaction in Gastric Diagnosis.—Thomas R. Boggs describes Sahli's desmoid reaction. In order to carry out this test a pill of methylene blue or iodoform, or both together, is placed in a rubber sack. This sack is made by twisting the pill in the center of a square piece of thin rubber dam. The twisted neck is tied with three turns of number oo raw catgut previously soaked until soft in cold water. The knots are made on the same side of the bag. This test causes the patient no distress, and, as it is given at the principal meal, it is subjected to the activities of the gastric functions when they are at the height of their stimulation. The desmoid pill is relatively heavy and so remains in the stomach for the maximum length of time. It thus fully tests the activity of the gastric juice. It often gives a positive result when, with the test breakfast, an absence of free hydrochloric acid is indicated. As Sahli pointed out, this is a matter of considerable diagnostic importance in distinguishing cases with true achylia, carcinoma, or pernicious anemia from less serious disorders in which the Ewald breakfast is insufficient to cause an excess of hydrochloric acid. The writer has examined thirty-four cases in which there was impairment of the gastric function, in addition to twelve normal persons. The latter were all positive. In the carcinoma cases, all but one gave a negative test. This patient was an ignorant negro in whose case the test was unsatisfactory and unfortunately could not be repeated. All of the seven cases of pernicious anemia gave negative tests. A case of secondary anemia of long duration gave a positive test. Various other interesting negative tests were observed. In each case with two exceptions the result of the test was compared with the findings of the Ewald breakfast or Fischer's meal, or both. The results of these experiments, which are given in a tabulated form, seems to bear out Sahli's contention that the desmoid pill does show the ability of the stomach under the best conditions. The writer believes that its principal value is as a test for free HCl. As he says, it cannot replace the test meal, but is a useful adjunct to this essential measure. In the stools of the negative cases the pills which were found showed no evidence of digestion, yet in most cases the intestinal digestion of foods, including meats, was good. The writer declares that this fact speaks strongly for the specificity of the test for gastric digestion.—*Bulletin of the Johns Hopkins Hospital.*

Venous Compression as a Diagnostic Method in the Case of a Latent Roseola.—René Hornad cites the case of a patient in Jaboulay's service. This patient had entered the hospital with an anal fistula. The man had had a chancre. A distinct roseola was noted on the front of the abdomen of this patient. Stasis of the blood current brought about by venous compression rendered the roseola far more evident. An elastic rubber band is a simple means for causing this compression, although a cloth bandage will be of equal service. When this is put around the arm, for example, the color soon becomes violet in hue and the spots of the eruption, which may be latent, become apparent, red, copper-colored, and livid. The writer has been able by this means, in some cases, to detect a roseola when it could not be seen even with a blue glass. Venous compression might be applied for the early diagnosis of eruptions other than specific.—*Lyon Médical.*

The Rapidity of Absorption of Odors by Milk.—F. Bordas and Toutplain have determined, in their researches which they have made with the aid of formic aldehyde, that this is absorbed most rapidly by milk which has been freshly drawn. This absorption of aldehyde by milk is so rapid that it has been suggested to use the impregnated milk for revealing traces of formic aldehyde in the air.—*La Presse Médicale.*

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THE LONGEVITY OF COLLEGE ATHLETES.

A VALUABLE contribution to the literature of this subject has recently been made by Dr. W. G. Anderson, the head of the Yale gymnasium. He notes the general impression that the star athletes from American colleges do not live as long as do their less athletic fellows. "A good many people claim," he says, "that the highly-developed athlete has more muscle and more lung power than he can use when he graduates and takes up his long apprenticeship in some sedentary occupation. If he is not careful the very power of lung and heart which made him a force in the long four-mile pull, if he be a crew man, becomes a danger to him, because there is no call in his every-day life for the abnormal development he acquired in college. If he does not keep up some pretty vigorous exercise outside of office hours the lung tissue developed in his college life falls into disuse and may be the indirect cause of consumption, or the heart, forced to do overwork in the strain of the competition in the big sports, and overdeveloped, may retaliate in after life by refusing to do its work in some great stress, like pneumonia, for instance."

The athletic records of Yale show that between the years 1855 and 1905 the number of men who gained positions on either the crew, baseball, football, or track teams was 807. Of this number 58 have died. Of these 58, 18 were crew men (naturally as this is the oldest sport), 16 were football men, 13 track, and 11 baseball men. If an estimate be made on the basis of the average of years in the life of the sport it is found that the greatest mortality has occurred among the football men. Crew men were second, track men third, and baseball men fourth with an extremely low average. Compared with the select mortality tables of the Actuarial Society made up from mortality averages all over the country, the athletes show a remarkable longevity.

As contrasted with these figures are those collected by Dr. Anderson as to the mortality of the general graduates, who have not won team positions, though many of them have doubtless done more or less systematic athletic work. During the fifty years above stated 10,922 men have been graduated from the academic and scientific departments. Of this number 1,406 have died; that is 12.9 per cent., as against 7.2 per cent. of the athletes. Consumption carried off 12 of the 58 deceased athletes, but this percentage is not greater than would be expected among nonathletes from a similar cause, as is proven by reference to the records of the large insurance companies. "Deaths from heart disease in the list of 58 men were 4 at the ages of thirty-five, fifty-seven, sixty-eight, and seventy. The average is very low. Pneumonia carried off 6, typhoid fever 5, and typhoid pneumonia 2. Those who wish to push their argument that high athletics are bad for the lungs and heart might find some ground for that argument in the fact that 24 of the 58 deaths were caused by lung trouble of various kinds, and heart failure. The table of deaths further shows that 9 of the 58 athletes met violent deaths, of which 2 were suicides. One died of dissipation, which was not traceable to participation in athletics."

Dr. Anderson's paper is all the more valuable because it is temperate in tone. He is not seeking to prove or disprove any particular theory, but is content to let the facts and figures speak for themselves. He declares that the "inevitable conclusion from the figures gathered is that the Yale man who came to high honors in the major sports of the last half century has more than the ordinary man's share of long life." But he freely admits that "whether this is due to his high development as an athlete or to the original strength of the man himself is still unproven, and seems likely to remain so unless some more perfect means of comparison can be found."

FETAL MALFORMATIONS.

AMONG the aspects of the obstetric art to which little attention is paid by the general practitioner is the subject of fetal deformities. This may possibly be due to the vagueness of the etiology of the subject and the comparative rarity of such malformations of the major grades, for many physicians never meet with an instance of this kind even during years of practice. The condition has provoked much discussion, but no satisfactory explanation has yet been advanced. Heredity may perhaps play some part in the production of deformities of a minor degree such as hypospadias, harelip, etc., but monstrosities in the generally accepted sense can hardly ever be of direct hereditary origin as the subjects of these rarely arrive at a stage where procreation is possible. The so-called maternal impression theory is ordinarily assumed by the laity to afford a sufficient explanation of such anomalies, and some physicians also give credence to a belief which has been repeatedly shown to be, in most cases at least, without foundation, for the shock or other disturbance experienced by the mother is usually felt at a period when the fetus has already reached a stage of perfect anatomical development when it seems impossible that further changes can take place.

In a recent article by Cooke in the *American Journal of Obstetrics* for December, 1906, the writer points out that some relation exists between the production of fetal deformities and the quantity and quality of the liquor amnii and even claims that the diagnosis of these changes has a prognostic value. He has observed that this anomaly is frequently accompanied by maldevelopment in the infant and cites seven cases of oligohydramnios or polyhydramnios in which the fetus was malformed—and in five out of the series the condition was foretold before birth. Even the type of malformation can, according to Cooke, be foretold in a general way, for while deformities of the trunk seem to occur in

cases of polyhydramnios, loss or shortening of the extremities is more usual when oligohydramnios is present.

The amniotic bands which are believed to cause the latter class of deformities are not always present, and it is more probable that the malformations are due to destructive atrophy of the parts brought about by direct pressure of the uterine wall unrelieved by the interposition of the normal amount of amniotic fluid. In connection with this theory there are still a number of points unaccounted for, but the prognostic feature of the writer's statement is interesting. So long as nothing can be done to correct the condition, however, it may be just as well for the medical attendant to guard the knowledge so acquired very closely, for it will without doubt prove unwelcome to the prospective parents and their kin, and—well, "sufficient unto the day is the evil thereof."

The Urine in Psoriasis.

The attempt to determine by analysis of the urine the faults of metabolism which are believed by many to be the ultimate cause of various eruptions, has been made so often, and with such uniform ill-success, that an investigation which promises even an explanation of the failures is most welcome. In their report on the urine of psoriatics, Brocq and Ayrignac (*Annales de Dermatologie et de Syphiligraphie*, May, 1906) lay particular stress upon two precautions which are often neglected, and the neglect of which would vitiate any experiment. In the first place, they give an exact definition of psoriasis, limiting it, for the purpose of this investigation, to cases showing characteristic clinical symptoms and excluding all those about which dispute is possible. There are so many cases of doubtful diagnosis, cases showing every possible gradation from frank psoriasis on the one hand to typical dermatitis seborrhoeica on the other, that this restriction of the investigation to an easily recognized group is the only way to avoid the chance of including cases which later study may prove to be not psoriasis at all. The same precaution should be observed in dealing with eczema and other dermatoses also. In the second place, they show that there is no one normal urine for all healthy individuals, but that each form of diet in a healthy subject has a corresponding urine, and that the variation caused by diet in a healthy subject is greater than the difference between the urine of a healthy person on a fixed diet and that of a psoriatic on the same diet. It is absolutely necessary, therefore, to know exactly what diet a patient is taking, and what kind of urine would be secreted by a healthy person living on the same diet, if we are to discover the changes caused by disease. Of course this is an old story, but if we may judge from the broad conclusions sometimes drawn from experiments in which this factor is neglected, the lesson it teaches is still needed. The importance of these precautions is, indeed, the most instructive part of the article, for the results of repeated and careful analyses were so often contradictory that the authors have been forced to conclude that the study of the different urological coefficients does not by any means establish a urinary formula characteristic of psoriasis. It seems to be unquestionable that all patients subject to psoriasis suffer from some kind of nutritive disorder, but the character of the disorder varies in different cases.

Fever of Pregnancy.

Physicians are by no means at one in regard to this peculiar affection. It has been described by various investigators, among whom are Tarnier and Ahlfeld. In general, it is classified as acute and subacute or chronic. Edgar believes these to be entirely separate conditions. He says that the acute fever of pregnancy bears a likeness to such conditions as acute miliary tuberculosis, typhoid fever, and septicemia. The chronic type, however, seems to be a neurosis with participation of the heat center. From a clinical point of view it often resembles a confirmed phthisis. Among those who are opposed to the use of this term "fever of pregnancy" is Kleinwächter. He does not believe that this condition is an indication for the termination of pregnancy. In the *Revue Médicale de la Suisse Romande*, of November 20, 1906, René Koenig reports work that has been done on this subject in Jentzer's gynecological and obstetrical clinic of Geneva. From the experience gained from the study of this affection in that clinic, the importance, in face of an abnormal rise of temperature in pregnancy, of never losing sight of the possibility of the existence of appendicitis or of pyelonephritis is emphasized. Pyelonephritis is always easy to diagnose when one thinks of it. In the presence of symptoms of peritonism when an affection of the urinary passages can be excluded surgical intervention should not be too long delayed. It is better to practise an unnecessary laparotomy than to wait for symptoms which clinch the diagnosis of generalized peritonitis. As to appendicitis occurring during pregnancy, Mundé published the first well-established case in the Medical Record of December 1, 1894. In 1898 Fraenkel reported thirteen cases and Pinard forty. In 1899 Koenig succeeded in collecting nearly one hundred. Since these reports many observations have been made on this condition. Appendicitis is a complication fairly rare in the puerperium. As to appendicitis in pregnancy the pessimistic statistics which exist hardly represent conditions as they really are, for many slight cases are never reported, and indeed many are not even noted. The diagnosis of appendicitis in pregnancy is not often easy, and in some cases it presents insurmountable difficulties. Various opinions are held concerning the treatment for this condition. Prophylaxis plays an important rôle.

The Treatment of Gonorrheal Epididymitis.

In preantiseptic times French surgeons sometimes treated cases of this affection by incision with the idea of relieving tension. The frequent occurrence of infection, suppuration, and even necrosis brought the method into discredit, however, and for years the treatment of this complication of specific urethritis has been a very conservative one. A return in principle to the methods of the French surgeons is suggested by Schindler (*Deutsche medizinische Wochenschrift*, December 20, 1906), who seeks to relieve the tension due to the swelling of the epididymis by puncture, and if possible, aspiration. The punctures are made at the point where the tenderness is greatest, and if no secretion can be aspirated, are repeated several times in different directions. Strange to say, the author has not found that the procedure is at all painful, and he directs that it should be carried out without any attempt at local anesthesia, as the latter serves only to increase the discomfort of the patient. The effect of the puncture is seen in the prompt relief of pain, in the subsidence of the fever, and in the rapid

resolution of the induration. The author made use of this method in twenty-three cases of gonorrheal epididymitis, performing forty-four punctures on these patients, and found that, as compared with the conservative method of treatment by rest in bed and local applications, the duration of the detention from work was reduced by about one-half. He also tested in a series of cases a form of Bier's treatment by hyperemia, but although the results obtained were encouraging he does not consider that the method is as satisfactory as the treatment by puncture. He has not yet tried the combination of the two, though it is not impossible that by this means still better results might be obtained, for, unfortunately, even the punctures do not cause complete absorption of the exudate and restoration of the epididymis to its normal condition to take place. Even though this suggestion of Schindler's should prove as successful in other hands as in his own, the most important consideration in connection with gonorrheal epididymitis will still consist in prophylaxis, first on the part of the physician, who by judicious treatment must prevent the infection from penetrating to the posterior urethra, and second on the part of the patient, who must be educated to seek proper medical advice at the earliest indication of infection, and thus render the task of the physician less difficult. The second requirement is, however, one which the circumstances in the case unfortunately render very difficult of fulfilment.

Exploratory Puncture of the Brain.

The exploring needle has long been regarded as one of the most useful aids to the diagnostician and there are now but few recesses of the body that have not been subjected to this mode of inquiry. Kocher, some years ago, suggested exploratory puncture of the brain through fine drill holes made in the calvarium, and subsequently the method was developed and a careful technique described by Neisser and Pollack. These authors perforated the skull by means of drills of small diameter operated by an electric motor. Although they reported favorable results in a considerable number of cases, the method has not seemed to find ready acceptance, and it is therefore interesting to note that it has gained another supporter in Ascoli (*Berliner klinische Wochenschrift,* December 17, 1906), who gives the histories of six cases in which more or less important diagnostic information was obtained by this means. The method followed was in most particulars that of Neisser and Pollack, though the drills were actuated simply by means of an ordinary dental engine. Ascoli speaks of the technique as not being especially difficult, and states that the procedure can be carried out under cocaine anesthesia without causing undue discomfort. In none of his cases does it appear that any undesirable results followed the twelve punctures made, though, of course, this is by no means a guarantee of the harmlessness of the procedure, and numerous unpleasant possibilities at once suggest themselves. Still it must be borne in mind that patients for whom such a method would come in question are likely to be already in a precarious state, and exploratory puncture is probably a less serious procedure than the exploratory trephining that is oftentimes recommended. Brain surgery has progressed so greatly of recent years that a method which, like the one advocated by Ascoli in the article referred to, has some prospect of utility deserves at least to be tested and have its actual value definitely determined.

Mimicry of Malignant Disease of the Bowel.

Disappearance of tumors supposed to be malignant is common enough, and sometimes operation discloses a very different state of affairs from that assumed to exist. At a recent meeting of the London Clinical Society (*British Medical Journal,* December 22) Mr. Moynihan reported six cases in which he had operated within the last few years in which a diagnosis of malignant disease of the intestine had been made at the time of operation or before, yet subsequent examination of the specimens or the after-history of the patients showed the incorrectness of the diagnosis. For instance, a woman of twenty-nine years had intestinal obstruction due to a growth blocking the rectum. Left inguinal colotomy was performed, and six weeks later the whole of the rectum and sigmoid flexure below the colotomy opening were removed by the abdominoperineal route. Examination of the specimen, which was shown, revealed no evidence of malignant disease. The rectal walls were thickened and stenosed. The mucous surface showed heaped-up, irregular masses of soft growth, here and there ulcerated to a degree which resulted in festoons of mucous membrane being left, attached at each end, free in the middle. There was no evidence of tubercle or syphilis. The other histories are similar. Mr. Moynihan observed that mimicry of malignant disease in the cecum and ascending colon by a hyperplastic process was well known. Inflammatory tumors presenting all the clinical appearances of cancer may exist in all parts of the large intestine. Some of these may be due to the presence of false diverticula. Such cases are analogous to those tumors of the stomach which disappear after gastroenterostomy.

The Effect of the Tropical Sun on Pathogenic Bacteria.

The well-known resistance to infection exhibited by the natives of tropical Africa has led to the conclusion that the natural protective powers of these individuals are developed to an unusual degree. According to the reports of surgeons who have practised in these regions injuries of all sorts, even when brought under observation with the most unaseptic sort of first-aid dressings, heal without suppurative complications, and primary union is often obtained in the most unpromising wounds. It is rather unlikely, however, that the benign course observed in such cases is altogether to be put to the credit of the black man's fortunate idiosyncrasy and it is probable that to some extent at least the prevailing paucity of pathogenic bacteria may have something to do with the absence of the proneness to infection that exists in civilized regions. An interesting communication by Martin (*Münchener medizinische Wochenschrift,* December 18, 1906), bears witness to this opinion, for his experiments appear to indicate that the climatic conditions in the tropics are more actively hostile to bacterial life than is usually supposed. This observer occupies an official position in a German colony in tropical Africa, where the average temperature during the eight warm months is 77° F. at six in the morning, 144° in the noonday sun, and 77° again at night. These extreme fluctuations in temperature were considered by the author as likely to be particularly unfavorable to bacterial life, and he tested the matter by exposing in various ways pure and mixed cultures of various pathogenic organisms to the influence of the sun and air. He also tested the bacterial contents of the air both indoors and out, and of the soil. All

of these experiments lead him to the conclusion that in tropical regions there is a well-marked scarcity of pathogenic bacteria. This is probably in great measure due to the sun's heat, though undoubtedly considerable importance also attaches to the bactericidal effect of the light rays. It was found that a number of nonpathogenic organisms were not susceptible to these influences, however. A series of tests of sand taken from the shore leads to the interesting conclusion that the mechanical action of the surf appears to render sterile the sand on beaches exposed to the action of the waves.

Neuronophagia.

During recent years the study of the nervous system has absorbed the attention of various brilliant investigators. Many problems are yet in the realms of obscurity, and any new and careful work is welcomed, not only by the neurologist, but also by the general practitioner. The recent reports by Laignel-Lavastine and Roger Voisin of the laboratory investigations which have been carried on in connection with the Laënnec Medical Clinic (L. Landouzy), and that of Jules Voisin at the Salpêtrière are of the greatest interest. It is known, as these workers state, that when the central nervous system in animals killed in full health is examined there are seen among the various nerve cells only certain slightly colored nuclei which correspond to neuroglia without any tendency to agglomeration, either perivascular or pericellular. On the contrary, when one examines the central nervous system of an animal which has succumbed to any affection whatsoever, the following condition can be seen: all about the nerve cell there are small rounded nuclei, variable in appearance and in color, some of which are in relation with the protoplasm of the cell, and some of which even encroach upon the nerve tissue. Here the cellular protoplasm has disappeared. This disappearance resembles the figures of phagocytosis. Many authorities have supposed that the pericellular nuclei attack and digest the cell, and Marinesco has named these small, round elements neurophages or neuronophages, and the phenomenon itself neuronophagia. The writers conclude that these forms spoken of do exist. The neuronophages are never united in all parts in the cellular protoplasm. They are diverse in nature (neuroglia nuclei, lympocytes, polynuclears, connective tissue cells, endothelial cells, plasma cells), and in origin (ectodermic and mesodermic). From their appearance one cannot always infer their nature; it is necessary to make a complete examination of the anatomo-pathological concomitants. Their rôle depends upon their origin. The elements of ectodermic origin play the rôle alone of substitution. Among the elements of mesodermic origin Laignel-Lavastine and Voisin have not determined any neuronophage, properly speaking, in the sense of Metchnikoff; but the lympocytes, if they are not cytophages, may produce cytolysis. It is then in this cytolitic rôle alone that these cells called neuronophages are found. Neuronophagia, therefore, considered as a special case of phagocytosis, properly speaking does not exist.

A New Theory of the Pathogenesis of Hyperemesis Gravidarum.

The numerous theories which have been advanced to account for the production of this condition may with advantage be classed in three groups, depending on whether the cause resides in the uterine contents or in secondary changes in the maternal generative apparatus or other organs of the mother. The theories of the first group may again be divided into two classes, according to whether the etiological factor is assumed to reside in the fetus itself or in the fetal adnexa. The theories of the second group are based on changes in the uterus or its appendages. Those of the third are distinguished by the fact that the nervous system, the urinary apparatus, or the digestive tract is regarded as the source of the difficulty. Stella, who has recently studied this subject (*Gazzetta degli Ospedali*, No. 126, 1906), considers that the symptoms of the hyperemesis of pregnancy can be directly attributed to the fact that during this time there is a restriction in the internal secretion produced by the ovaries. If such were the case it is possible that the abnormality might be corrected by the administration of ovarian extract. The writer resorted to this in a number of cases, which although insufficient in number to warrant drawing definite conclusions, demonstrate so far as they go the possibility of truth in the theory. In no case at any rate was the effect of these preparations entirely negative. In submitting the proposition to further trial, it is also suggested that the ovarian extract be given with a prophylactic intent in cases in which certain gastrointestinal disturbances indicate the possibility of further trouble. As the treatment is entirely harmless, Stella holds that it should be tried in every instance before abortion is resorted to.

Pneumonia Paralyses.

The paralytic affections which have been observed in adults during the course of a pneumonia or in convalescence are subject to considerable variation in their clinical manifestations. This, according to Daireaux, depends on the age of the patient. Those of very advanced years are subject to hemiplegias which always end fatally. In younger individuals, although the symptoms may be very severe, they are more apt to be recovered from. Daireaux had occasion to observe a case in which the hemiplegia following pneumonia was of this transitory type, and a few other instances have been reported in the literature. The general paralyses are characterized by a polyneuritis or, in exceptional cases, as in one reported in the *Archives générales de Médecine*, No. 36, 1906, by poliomyelitis. The damage to the nervous system in these cases can most likely be accounted for by the direct action of the toxins of the disease on the nervous system. Observations of this character are in thorough accord with the modern idea that pneumonia is a general, rather than a local disease, in which, as in most infectious diseases, the peripheral nerves as well as the spinal cells may be damaged. The comparatively short-lived character of the pneumococcus, as well as the short period during which the toxins are being developed, may serve to account for the transitory character of the paralyses in younger patients. Those which occur in more advanced years, however, during or after a pneumonia, must be attributed to disease of the cerebral vessels, which constitutes a complication rather than the result of an infection.

The New York Neurological Society.—At the annual meeting of this society, held on January 8, 1907, the following officers were elected: *President*, Dr. Charles L. Dana; *Vice-Presidents*, Drs. B. Sachs and L. Pierce Clark; *Corresponding Secretary*, Dr. Hallock; *Recording Secretary*, Dr. E. G. Zabriskie; *Treasurer*, Dr. Graeme M. Hammond.

News of the Week.

Lectures on Insanity.—The Psychiatrical Society of New York has arranged for a series of four lectures on the problems of insanity, to be held under the auspices of the Academy of Medicine, on Saturdays, January 19, February 2, February 16, and March 2, 1907, at 8:30 P. M. The purpose of these lectures is to put within the reach of the medical profession and also of the non-professional leaders of sociological interests a program of work and facts for orientation, with a view to the organization of a movement toward prophylaxis and the development of sound interest in this eminently important topic. The first lecture will be given by Dr. Adolf Meyer, on modern psychiatry, its possibilities and opportunities; the second lecture, by Dr. August Hoch, on the manageable causes of insanity, exclusive of heredity; the third lecture by Dr. C. L. Dana, on the data of heredity and their application in psychiatry; and the fourth lecture by Dr. Allen McLane Hamilton, on the development of the legal regulations concerning the insane. Physicians and others interested in a movement toward prophylaxis and the best management of mental disorders are cordially invited.

Typhoid Fever in Scranton.—Improvement is reported in the typhoid situation at Scranton as the number of new cases is diminishing, although it is admitted that the entire water supply is contaminated and the disease is also appearing in the surrounding localities. The number of cases so far reported is over one thousand, and over fifty deaths have occurred. In Pittsburg also the water supply is infected, and the situation is serious owing to the overcrowding of the hospitals.

In Memoriam of Dr. Mary Putnam Jacobi.—At the memorial meeting in honor of the late Dr. Mary Putnam Jacobi held on January 4 at the Academy of Medicine, the Women's Medical Association agreed to raise a fund of $25,000 to establish the Mary Putnam Jacobi Fellowship, the income from which is to be used to defray the expenses of some woman medical student in whatever country she chooses to study. It was announced that about $2,000 had already been pledged. Eulogies were pronounced by Dr. William Osler, Richard Watson Gilder, Dr. Elizabeth M. Cushier, Mrs. Florence Kelley, Felix Adler, and Dr. Charles L. Dana.

New Training School for Bellevue.—Plans have been filed for the new six-story fireproof training school for women nurses for Bellevue and Allied Hospitals, to be erected at a cost of $575,000, in Twenty-sixth street, east of First avenue. It is to have a frontage of one hundred and fifty-one feet and a depth of one hundred and ninety-four and one-half feet. The main floor will contain the assembly hall and a dining hall, and the second floor will have a laboratory. The other floors will be fitted with sleeping chambers, and there will be a roof garden with a pergola ornamented with terra cotta columns. The building is to cost $575,000.

Antivivisection Petition.—A monster petition was presented last month to the British House of Commons in behalf of the National Canine Defence League. It was announced that this document consisted of nine miles of parchment, weighing a quarter of a ton, and was subscribed to by 400,000 signatories. The petitioners set forth that they were opposed to the vivisection of dogs, and prayed the House to pass a Dogs' Protection Bill, which should prevent those animals from being made the subject of experiment.

Changes Recommended for the Cook County (Ill.) Hospital.—In his inaugural message, Edward J. Brundage, President of the Board of Commissioners of Cook County, recommends among other things that in every abnormal case admitted to the Cook County Hospital, Chicago, the patient should receive the attention of an expert pathologist, and in order that the service may be brought up to the required standard of efficiency, he advocates reorganizing the present pathological department. He believes an effective reorganization may be accomplished by employing an expert pathologist, requiring him to live in the hospital and give it all his time, and providing the department with the best modern equipment. In further development of the scientific side of the service at the hospital, he recommends that a permanent *x*-ray department be created.

American National Red Cross.—The annual report of the National Red Cross shows that during the year the organization collected $3,358,974 used for relief given to the sufferers from the Vesuvius eruption, the San Francisco disaster, the Japanese famine, the earthquake in Chili, and the Mobile storm. The report shows that there are branch organizations in twenty-nine States, with a total reported membership of about 18,000. Before the end of the present year it is expected that branches will be organized in all States and Territories, including Hawaii and Porto Rico.

The Cartwright Prize of the Association of the Alumni of the College of Physicians and Surgeons of Columbia University is to be awarded at the coming commencement. Its value is $500, and it is given for the best essay containing the results of original work in medical research. Information regarding the conditions of the competition may be obtained from Dr. H. E. Hale, 752 West End avenue, New York, who is the secretary of the association.

Deaths from Snake Bite in India.—The number of persons killed in India in 1905 by wild beasts was 2,054, as against 2,157 in the previous year. The number of deaths reported from snake bite, 21,797, is also a little smaller than that of 1904.

Ambulance Service Stopped.—Owing to alleged delay in answering ambulance calls the Board of Police Surgeons last week discontinued the ambulance service of the Washington Heights Hospital. Until the matter has been settled the district from West Eighty-sixth street to Spuyten Duyvil Creek will be assigned to the J. Hood Wright Hospital.

The City's Vital Statistics.—The number of births in the city of Greater New York last year was 111,772, an increase of 8,000 over 1905. The number of marriages was 48,355, an increase of 5,700. The deaths reported had increased by 2,492, the total being 76,206. There was an increase of deaths from diphtheria, cancer, heart disease, nephritis, old age, suicide, homicide, and violent deaths due to accidents, while there was a decrease in deaths from typhoid fever, malaria, whooping cough, cerebrospinal meningitis, influenza, bronchitis, and gastrointestinal disorders in children under five years of age.

Statistics of the Coroners' Office.—During the past year there were 5,890 deaths reported to the Coroners' office during the year, and of this number there were 3,160 deaths of a violent character. The total number of deaths in which the injuries received were chargeable to some other person was 549. The total number of cases tried by the Board

of Coroners and presented to juries during the year was 936; the number of inquests held at which testimony of witnesses was taken and reduced to writing and verdict rendered in accordance therewith was 1,224; the total number of inquests held where a verdict was rendered upon the sworn testimony of the Coroners' physicians, was 3,730; the total number of autopsies performed by the four physicians attached to the office was 1,112. There were 68 deaths due to caisson disease and accidents in connection with the tunnel work going on under various parts of the city and the North and East rivers.

Immigration Statistics.—The records of the Immigration Department issued last week show that in the past twelve months there has been an increase of nearly 400,000 in the number of persons landing at this port over the preceding year. There were 119,231 first, 134,380 second, and 944,017 third class passengers reaching this port, making a total of 1,198,434 that entered the country in 1906. Of this number 142,603 were citizens of the United States, and 1,055,831 were aliens.

Tobacco Smoking in Austria.—Recently published statistics furnished by the Austrian Government tobacco monopoly indicate an enormous increase in cigarette smoking in that country. Nearly four billion cigarettes were smoked in Austria in 1906, as well as some 1,200,000,000 cigars. Thirty years ago 2.3 cigarettes was the annual average consumption per capita for the whole population. Last year the average was 145.5 per capita. In the same period the consumption of cigars decreased from 49.7 to 44.3 per capita. Last year 31,000,000 fewer cigars were smoked than in 1904, while cigarettes showed an increase of 167,000,000. During the year the amount spent for smoking tobacco was $50,000,000, which was $200,000 more than in 1905. The receipts of the tobacco monopoly exceeded the expenses by more than $30,000,000.

A New Hospital on the East Side.—What is to be known as the Mount Merijah Hospital is to be founded in the lower east side by the Federation of Galician and Bucovinean Jews in America. Two four-story dwelling houses at 138 and 140 East Second street have been secured and will be altered for hospital and dispensary purposes. About thirty beds are to be maintained, and the hospital will be free to persons of all races and creeds.

Midwife Convicted as a Nuisance.—The District Attorney's office has found it so difficult to secure convictions of abortionists on the charge of performing illegal operations that in future the experiment will be made of trying such offenders under the charge of being common nuisances. A midwife was convicted last week under the provisions of the code pertaining to common nuisances and sentenced to a year's imprisonment in the penitentiary and $500 fine. One witness who had been employed in the house of the prisoner testified that in three months over fifty women had been operated on in the house, and one had died.

Rabies.—Seven persons have been bitten recently by rabid dogs in the neighborhood of City Island, where there are at present a number of dogs at large that are supposed to have been infected. The Health Department and the Society for the Prevention of Cruelty to Animals are making efforts to trace these animals and imprison them. A somewhat similar state of affairs is also in existence in the neighborhood of Mount Vernon and Port Chester, where several people have been attacked by rabid dogs. Three persons are under treatment who are believed to have been infected by a mad cow.

American Physiotherapeutic Association.—An invitation is extended to physicians interested in the study and legitimate practice of the physical (drugless) therapeutic methods, notably electrotherapy, phototherapy, mechanotherapy, hydrotherapy, suggestion, and dietetics, to join the American Physiotherapeutic Association. The officers of the association are: *President*, Dr. H. H. Roberts, Lexington, Ky.; *Secretary*, Dr. Otto Juettner, 8 West Ninth street, Cincinnati, Ohio; *Treasurer*, Dr. George H. Grant, Richmond, Ind.; *Executive Council*, Drs. W. F. Klein, Lebanon, Pa.; James Hanks, Brashear, Mo.; J. W. Unger, West Point, Miss.; Charles S. Northen, Talladega, Ala.; R. W. Gibbes, Columbia, S. C.; S. J. Crumbine, Topeka, Kan., and A. L. Blesh, Guthrie, Okla.

Congress on Climatotherapy and Urban Hygiene.—The third congress on these subjects will be held on the French Riviera from April 1 to 10, 1907. The sessions will be held at Cannes, Monaco, Mentone, and Ajaccio; but all the towns and stations on the Mediterranean Littoral are included in the program—Cannes, Nice, Monte Carlo, Mentone, Hyères, Antibes, Grasse, St. Raphaël, Juan les Pins, Beaulieu, Cap Martin, Thorenc, etc. The congress will last about one week on the French coast, and will finish in Corsica. The general secretary is Dr. Verdalle, 1 Boulevard d'Alsace, Cannes. The congress will be held under the presidency of Dr. Calmette, director of the Pasteur Institute, Lille.

Perry County (Miss.) Medical Society.—This society has elected the following officers for the ensuing year: *President*, Dr. I. H. C. Cook; *Vice-President*, Dr. W. R. Thomas; *Secretary and Treasurer*, Dr. S. Lewis Knight.

The Riley and Pottawatomie (Kan.) County Medical Society.—The following officers have been elected for this organization: *President*, Dr. T. R. Cave, Manhattan; *Vice-President*, Dr. George H. Letsinger, Riley; *Secretary*, Dr. J. C. Montgomery, Manhattan; *Treasurer*, Dr. C. A. Roberts, Randolph.

Dr. W. W. Keen has resigned from the chair of the principles of surgery in Jefferson Medical College and has been elected emeritus professor. He will spend the coming year in Europe.

Police Surgeons Appointed.—Dr. Henry G. Webster and Dr. Thomas A. McGoldrick of Brooklyn last week received appointments as police surgeons.

Dr. Henry Leffmann has resigned from the Philadelphia Board of Health for the assigned reason that there is nothing of an administrative character for that body to do. The remaining members are Dr. A. C. Abbott and Dr. Leonard Pearson.

The American Hospital for Diseases of the Stomach was formally opened at Philadelphia on January 3. Dr. Lewis Brinton is chief physician, Dr. John B. Deaver chief surgeon, and Dr. John B. Shober gynecologist. Dr. Ludwig Loeb is associate surgeon, Dr. L. Napoleon Boston director of the research laboratory, Dr. J. R. Strawbridge assistant physician, Dr. Francis B. Jacobs pediatrist, Dr. James C. Wilson consulting physician, and Dr. James Thorington consulting ophthalmologist.

Sanatorium for Insane Hospital.—The Illinois Western Hospital for the Insane at Watertown, Ill., contemplates erection of a modern sanatorium at a cost of $100,000. This is an improvement or addi-

tion which the superintendent and trustees will ask of the new Legislature.

Obituary Notes.—Dr. Edward Oliver Belt of Washington, D. C., was one of the victims of the wreck on the Baltimore and Ohio Railroad at Terra Cotta on December 29. Dr. Belt was graduated from the Maryland School of Medicine in Baltimore in 1886 and was well known as a specialist in diseases of the eye.

Dr. Richard M. Coghan of Providence, R. I., died on January 3 at the age of twenty-eight years of scarlet fever contracted from a patient. Dr. Coghan was graduated from Brown University in 1901, and received his medical degree from the Jefferson Medical College in 1905.

Dr. Joseph A. Aldrich, who was formerly a surgeon in the United States Army, died in this city on January 4 at the age of eighty-nine years. He was stationed at New Ulm, Minn., during the Indian wars and distinguished himself for bravery at that time.

Dr. Joseph W. Glynn of Flatbush died on December 30 in his thirty-seventh year. He was graduated in 1894 from the Long Island College Hospital.

Dr. Olive F. McCune of Brooklyn died on January 4 in Binghamton, N. Y., at the age of seventy-eight years. She was born in Delhi, N. Y., and had practised in Brooklyn for about thirty-five years. Her husband, who was also a physician, died some years ago.

Dr. Henry W. Dudley of Abington, Mass., died on December 29 of heart disease at the age of seventy-five years. His death was very sudden and he had been making calls up to noon of the day on which he died. Dr. Dudley was born in Gilmanton, N. H., and was graduated from Harvard Medical School in 1864. He was president of the Plymouth District Medical Society in 1878 and had held numerous other official and teaching positions. For sixteen years he had been medical examiner of the second Plymouth district, and he had practised in Abington for over forty years.

Dr. Charles Culpepper of Portsmouth, Va., died suddenly on December 28, at the age of forty-three years, after several years of broken health. He received his medical education in the University of Virginia and had practised in Portsmouth for many years.

Dr. S. Cyrus K. Bartlett of Minneapolis, Minn., died on December 27 at the age of seventy-seven years. Dr. Bartlett was born in Boxford, Mass., and after receiving his medical education at Harvard Medical School he practised in Boston for six years. In 1868 he was appointed superintendent of the insane asylum at St. Peter, Minn., and after twenty-five years of service resigned and went to Minneapolis. For the past twelve years he had been the professor of mental diseases at Hamline University.

Dr. Jacob G. Wolf of Morristown, Ind., died on December 27 at the age of eighty-three years. In 1849 he was graduated from the Ohio Medical College, and two years later he settled in Morristown.

Dr. Jeannette C. Welch of Grand Rapids, Mich., died of pneumonia on December 31. She was born in Canaan, N. H., in 1867, and was a graduate of Wellesley College and the College of Physicians and Surgeons of Chicago. She also held the degree of Doctor of Philosophy from the University of Chicago.

Dr. J. W. Standley of Alexis, Ill., died suddenly on December 23. He was born in Putnam County, Indiana, in 1848. He was graduated from Rush Medical College with the class of 1872, and practised in Greencastle, Mo., until 1880, when he went to Alexis.

Dr. William H. Dingee died at Philadelphia on December 30 at the age of thirty-two years. He was graduated from the medical department of the University of Pennsylvania in the class of 1896. He was connected with the eye, ear, and throat dispensaries of the Samaritan, Episcopal, and St. Mary's Hospitals.

Correspondence.

TREATMENT OF ACUTE SEPTIC PERFORATIVE PERITONITIS.

To the Editor of the Medical Record:

Sir:—The letter of J. J. Brownson, M.D., in your issue of December 15, 1906, anent the subject of treatment of acute septic perforative peritonitis, contains statements that should not be allowed to pass unchallenged, for the wide publicity given them by your journal might result in the acceptance here and there of misjudged conclusions and consequent deprivation to many of the chances of possible assistance through operative interference.

The conclusions expressed by Dr. Brownson regarding hopelessness and contraindication of operation in cases of general peritonitis are those that were generally accepted some six or eight years ago, but surgeons who have been awake these few years have noted quite some progress, and think differently, and have proven differently to-day. The assertion of Drs. Marshall and Quick is up-to-date: "We operate in every case when the radial pulse can be felt. Early, intermediary, and late operations, as defined by hours, days, are terms that should be relegated to the attic, etc. We have awakened from that condition which makes a god of pulse and temperature." The definiteness of this statement is only accentuated by Dr. Brownson's criticism, "Or, in other words, they care nothing for the condition of the patient or the period of the disease. All they want is the diagnosis and a pulse at the wrist when they cut away." This is exactly the case, especially in regard to peritonitis, for, according to Dr. Brownson's own statement, these cases are hopeless, "forlorn tasks with which a surgeon should not risk his reputation," if not operated on. Then what is to be lost by operation? The surgeon's reputation? Dr. Brownson certainly does not mean to balance that against a chance of saving the patient's life. Yet the fact is that to-day a fair proportion of these patients are saved by operating on them.

It is unfortunate that we have not a better classification of "general peritonitis" than has been and is yet in vogue. The doctor is justified in referring to "what is meant by certain writers when they report cases of 'general suppurative peritonitis' terminating in recovery." But the doctor's description of the cases he refers to is not at all any more definite, in fact, less so. He says "produced by the bursting of an abscess pouring its septic contents directly into the abdominal cavity," and that no such case "will be found with a temperature of 102° and a pulse of 120. Rather will they have a temperature of 105° or 106° and a pulse of 140 or 160." The bursting of an abscess, pouring its septic contents into the abdominal cavity is the cause of the spreading peritonitis in almost all cases of diffuse septic peritonitis, both those where the infection is limited more or less to the region of the original lesion, and those of general peritonitis, which result from the further spread of the local diffuse infection, taking a longer or shorter period to develop, according to the character of the infection, the personal resistance of the patient, etc.

Perforation and peritoneal infection with a temperature of 105° or 106° and pulse of 140 or 160 is a rare combination, and does not represent the conditions in the really bad cases. These have the bad pulse, but a moderate temperature. The high temperature shows effort on the part of the system to overcome the invasion of the infection, and in so far is a favorable symptom. The bad pulse indicates want of resistance or exhaustion, and is generally accompanied by a moderating temperature as the power of resistance wanes. The outlook with a poor pulse and high temperature is better than with a poor pulse and low temperature, which are the results of want of active resistance on the part of the economy, or of the cumulative and increasing toxic effects of the infection which has been developing and spreading for some days. Here the prognosis is poor but not hopeless. This is the class of cases described by Dr. Baldwin as those he does not expect to

save, and, although they do not answer the description of the cases referred to by Dr. Brownson, are quoted by him in support of his contention. Dr. Baldwin bases his opinion on failure in two such cases, hardly sufficient to judge by, especially when others report recoveries, some more, some less, in larger series of cases.

Dr. Brownson's conclusions regarding time of operation in appendicitis cases in general, referred to briefly in this letter, are expressed more in detail in his article in the MEDICAL RECORD of October 6, 1906. He designates three periods when operation should be done, and an "intermediary period when there is fever and distention of the abdomen" when it ought not to be done. This period as the doctor defines it is very indefinite, but it evidently refers to some time between the beginning of the attack and the development of abscess. Postponement of operation till after this period can only contribute towards increasing the proportion of cases complicated with general peritonitis. When no abscess develops there is no intermediary period, and no operation until the interval. Waiting for this interval, though, would permit of the possibility of something happening as the result of an unrecognized abscess, such, for instance, as might form in the appendix or around it, and fortunately discharge into the cecum without even having been recognized, and yet end in recovery. Where is the "intermediary period" when, with no abscess formation, a concretion ulcerates through the appendix wall and permits discharge of intestinal contents into the peritoneum? Where is it when a distended gangrenous appendix suddenly bursts and discharges its bacteria-laden, not necessarily purulent, contents into the peritoneum? Where is it when infection of the general peritoneum is found coincident with almost the first signs of appendicitis? In a good proportion of cases, before the belly is opened, it is impossible to say in which any of these conditions is present or absent, or will or will not occur. Waiting for the "intermediary period" to pass before operating gives the opportunity for any accident to happen, and permits the development of the usual proportion, in unoperated cases, of a spreading peritonitis, which if said "period" is permitted to last long enough, becomes general septic peritonitis "with a temperature of 105° or 106° and pulse of 140 or 160." On the other hand, to operate when the diagnosis is made is to forestall the possibility of these accidents, and to operate in the "intermediary period" is no worse than at any other time; in fact, preferable to waiting till abscess has formed, with its concomitant inflammatory infiltration and extensive and brittle adhesions.

Nothing is as conclusive in an argument as facts, and I can cite a few such that will go to prove what I claim. Referring to my report of 147 appendectomies (MEDICAL RECORD, March 24, 1906), it is noted there that of 142 of these, 23 were operated on within two days of the beginning of the attack, 50 in three to four days, 41 in five to seven days, 18 within two weeks, and 10 in one to three months. In referring to my notes I find that among the 50 who were operated upon on the third and fourth days of the attack, presumably the "intermediary period," there were two deaths, one primarily of general peritonitis, to which the intermediary period would not apply, and in the other there was a large pelvic abscess with a gangrenous appendix, and the case was very septic. Neither of these patients could have been in the intermediary period. In fact, the causes of all the deaths in the series, as given under "mortality" at the end of the article, could, by their very nature, have no relation to the "period" in which the operation was done. In a subsequent series of over 50 appendectomies, where the time of operation was "as soon as possible" after coming under observation, there were two deaths, one in a case of a general peritonitis; the other patient was sick for a couple of weeks with a large retrocecal abscess and gangrenous appendix, in addition to an old and advanced pulmonary tuberculosis, and died of post-operative hypostatic pneumonia. As in the previous series, neither of these deaths could be attributed to operation in the "intermediary period," and as there are none in these 200 cases that could by any stretch of the imagination be ascribed to this cause, the intermediary period or any other period becomes a negligible quantity.

As to recovery from general peritonitis, and relative temperature and pulse ranges and their significance in this condition, I would again refer to the same article and, in addition, copy the following from my notes on these cases, the observations given being those of the patient's condition on admission to the hospital. Among the recoveries from general peritonitis, those with the highest temperatures were the following: temp. 105 2-10°, pulse 112; temp. 104½°, pulse 112; temp. 104°, pulse 140; temp. 103 6-10°, pulse 124. Among the deaths the highest temperature was 102 6-10°, pulse 100; others were temp. 102°, pulse 142; temp. 102°, pulse 130; temp. 101°, pulse 130; and the lowest temperature was 96½°, with pulse of 130. Among the fifty odd additional appendectomies mentioned above were fourteen cases of diffuse and general peritonitis. Their temperature and pulse ranges were within the limits given in the previous series, and on the average they were of the same nature. The results were better, due, I believe, to added experience in method of handling, especially in the mode of drainage and limitation of unnecessary manipulations, though different from Dr. Murphy's cases, in that the appendix was invariably removed. Of the fourteen there were thirteen recoveries. I shall have more to say on this subject in an article to appear in the near future.

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TRYPSIN FOR THE CURE OF CANCER.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the MEDICAL RECORD of December 8, 1906, there appeared an article under this title by William J. Morton, M.D., which article has been very extensively quoted in the lay press and has called forth considerable discussion. Into this discussion medical men have entered, contending that such articles should not be copied or published in the lay press. The lay press has answered that it was simply printing "facts," and publicity in the use of "facts" in the cure of disease was a public benefaction. Now, I do not wish to discuss the use of trypsin in the treatment of cancer, which I am using along with many other medical men, but I wish to say something about "facts" in so far as Dr. Morton's article referred to me and case No. 1 came under my observation.

Dr. Morton says that case 1 was "referred by Dr. Edw. W. Peet." I beg to correct this statement, for I did not refer the case to him and did all I could to keep the case from him. I was the family physician of the patient and she got her early knowledge of Dr. Morton through the reports of him in his connection with the treatment of the late President Harper of Chicago University. After repeatedly calling my attention to these notices the patient went to Dr. Morton and brought back such accounts of results in the use of *x*-ray that I was constrained to see him also. I did so and the results he reported did not tally with the results I had obtained with *x*-ray. I continued to attend the patient at her home and made very careful and frequent notes of the progress of the case while she was under treatment. My notes do not at all agree with the report made by Dr. Morton in his article. He says: "The patient received 32 *x*-ray treatments, extending over a period of seven weeks. The gland had reduced one-third in size, the tumor was freer, and absolutely every sign of lmyphatic infection had disappeared." The tumor did increase and decrease in size depending on whether her menses were present or remote. At all times during these seven weeks I was able to make out enlarged axillary glands and detect lymphatic infection by palpation. How any one could make such an optimistic statement about this case is beyond my comprehension. According to my observation the tumor and axillary involvement slowly but continuously progressed. And this coincides with the histories of most of my cases treated with *x*-ray. I did the first operation referred to by Dr. Morton and assisted at the second, and feel it a duty to put on record my observations of the "facts" in this case.

EDWARD W. PEET, M.D.

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OUR LONDON LETTER.

(From Our Special Correspondent.)

THE RECESS—HOSPITAL SUNDAY FUND—KOCH ON SLEEPING SICKNESS—HEPATIC INADEQUACY AND GOUT—MIMICRY OF MALIGNANT DISEASE—RUPTURE OF THE DIAPHRAGM.

LONDON, December 21, 1906.

THE Xmas recess has arrived and is a welcome rest to those who have been working strenuously in the schools, whether as teachers or students. Many assiduous attendants at the societies are also pleased for the interruption of the work. I may add that the scheme of amalgamation is making haste slowly.

Yesterday, the constituents of the Hospital Sunday Fund held their annual meeting at the Mansion House, the Lord Mayor presiding. The total collections for the year amounted to £63,000. The sums collected in the places of worship reached £44,647 less than the previous year by £4,307.

The Bishop of London, in moving the adoption of the

report, thought the fund might rise to £[illegible],000, and the Chief Bailiff, who seconded, thought some of the falling off was due to week-ends out of town, and he hoped those absent from the Hospital Sunday would forward their donations. The report was adopted and Hospital Sunday for 1907 fixed for June 9.

Koch's report on sleeping sickness has been presented to the German government, and telegraphic summaries appear in our newspapers this morning. No doubt you will get the same by cable, so I will only allude to one or two points. He says the disease is not indigenous in German South Africa, and that the cases occurring there come from British territory—a statement that requires corroboration, seeing that the Glossina, as he admits, is prevalent in the German colony. He pronounces atoxyl to be a specific. He speaks of 900 cases, all serious, under treatment, and expresses the opinion that the majority of them will be cured in from two to three months. It will be necessary to watch for relapses before absolute certainty is obtained. One remembers tuberculin, and can await the verdict of the medical societies, where no doubt criticism will be forthcoming.

There was an interesting discussion at the Medical Society on the 10th inst., introduced by Sir L. Brunton in a paper on hepatic inadequacy in reference to gout and other diseases. He said people might be healthy whose muscles were unequal to heavy work, as others whose brains did not fit them for some positions. So lungs, stomachs, kidneys, etc., might be inadequate. The liver, he said, might be inadequate as regards carbohydrates, hence glycosuria; but its deficient power with regard to proteins and purins was not so fully recognized unless what passes as torpid liver be so considered. He referred to the experiments of Stokvis, which suggested that the liver is concerned in the conversion of uric acid into urea. This work he had confirmed in conjunction with Dr. Bokenham, as also continental physiologists had done. He thought probably an enzyme capable of decomposing uric acid was present in the cellular juice of the liver during active digestion, and not at other times. This enzyme might be set free by some secretion. Hepatic inadequacy as to carbohydrates needs a meat dietary, but as to purins a purin-free diet. To put every one on a purin-free diet was as absurd as to put healthy people on a diabetic's diet. The best diet for man was, as Professor Chittenden said, "a mixed diet, and not too much of it." The paper, then, was a new appearance of the old idea of torpid liver.

Sir D. Duckworth said he had learned to recognize various phases of gout in the system, and not to look to uric acid as the cause of all its symptoms. It was a relief to hear nothing about microbes, and that gout could be relieved by old-fashioned remedies with exercise. Dr. Fortescue Fox said we must distinguish between acquired gout, which was a diet disease to be treated by diet, and hereditary gout, which was not relieved by dieting. Dr. Ewart said the essence of gout was functional, but it passed into a structural disease. The offspring of gouty parents should be treated with a view of preventing structural changes.

Dr. Luff threw down the gauntlet against the "fetich of uric acid," which, he said, was in no sense a poison, but a comparatively harmless by-product. The liver could convert uric acid into urea to a certain amount, but that amount had no part in the pathology of gout, which was an autointoxication, and might be due to the bacteria of the intestines becoming altered so as to give off the toxin of gout. The liver could destroy that toxin, but if its function fell below par the undestroyed toxin would produce gout.

At the Clinical Society, on the 14th inst., Mr. Moynihan read a paper on "Mimicry of Malignant Disease of the Large Intestine." He related six of these puzzling cases upon which he had operated. In all, a diagnosis of malignant disease had been decided on before or at the time of operation, and yet this was incorrect. In one there was a growth blocking the rectum; in another a tumor of the sigmoid flexure; in two others inflammatory tumor due to pericolitis; in another a tumor with a number of diverticula, one of which had perforated, but no evidence of malignancy; in the other an inflammatory tumor of the splenic flexure, which disappeared after a short-circuiting operation. Mr. Moynihan remarked that mimicry of malignant disease about the cecum and ascending colon by a hyperplastic tuberculous process was pretty well known. He had operated on two such cases in the belief that they were cancerous, but it was not so generally recognized that inflammatory tumors with all the clinical appearances of cancer attacked all parts of the large intestine. Many of them, he thought, might be due to false diverticula.

The president, Mr. Clutton, recognizing the importance of the paper, compared the cases with those of gastric tumors supposed to be cancer, but which disappeared after gastroenterostomy. He was very skeptical about the syphilitic nature of rectal cases so commonly assumed. Dr. Brook related a case operated upon for acute obstruction when a fixed tumor of the cecum was found. Short-circuiting was done, and eighteen months afterwards the man was well, and no sign of the tumor was detected. Mr. Spencer had operated on a similar case, and seven years later at the post mortem the intestine was found normal. He suggested that many cases that recovered after exploratory operations were of this nature. Mr. Moynihan, in reply, thought syphilitic cases could often be distinguished, though in one of those related there had been a mistake. In literature he had found forty cases of diverticula. In museums he had seen forty specimens described wrongly as syphilitic.

Two cases of ruptured diaphragm, with accompanying severe injuries caused by squeezing between railway buffers, were then read. The first was by Mr. J. Berry, and his patient, a railway man of nineteen, was admitted soon after his injury in a state of profound collapse. The physical signs pointed to rupture of lung, and blood and air in the pleura. It was also thought that the diaphragm had been ruptured. For three days he continued collapsed, the heart being pushed more and more to the right, and signs of strangulation set in. In this desperate state it was thought best to open the abdomen and attempt to reduce the strangulation. On doing so a large rent in the left posterior part of the diaphragm was found, through which most of the stomach, colon, and omentum, upper end of left kidney, and half the spleen (which was cut in two) had passed into the thorax. The herniated viscera were with difficulty drawn back into the abdomen and the operation completed by closing the rent, partly with sutures and partly by fixing the liver. The patient died almost immediately.

The other case was read by Mr. J. P. Roughton. The abdomen was opened the day after the injury, and the stomach, which had passed high into the thorax, was withdrawn, blood coming from the chest into the abdomen. The patient died the next day. At the post mortem the diaphragm was seen to have been torn away from its attachment between the ensiform cartilage and ninth rib; there was a rent in the spleen, probably the source of the blood mentioned above. The delay in this case of serious symptoms made it a more favorable one for an attempt to deal with it. The great interest of the cases was commented on by the president and others, and the authors congratulated on their efforts, which seem to show how perhaps surgery may yet accomplish something in these terrible cases.

OUR PARIS LETTER.

(From Our Special Correspondent.)

THE APPOINTMENT OF PROF. ALBARRAN—THE TREATMENT OF CANCER—INVESTIGATIONS ON TUBERCULOSIS IN SCHOOL CHILDREN—THE SURGICAL TREATMENT OF HEMATURIA—ABDOMINAL HYSTERECTOMY FOR CANCER OF THE CERVIX—RADIOTHERAPY IN THE TREATMENT OF CARCINOMA—THE REMOVAL OF TATTOO MARKS—A WORK ON DIETETICS.

PARIS, December 15, 1906

THE chair of Diseases of the Urinary Organs having become vacant in the University of Paris in consequence of the retirement of Prof. Guyon, who has reached the age limit, Dr. Albarran has been appointed as his successor. The very considerable and important advances made by Prof. Albarran in all branches of this specialty, as well as his favorable reputation in other countries made it seem quite natural that he should receive the appointment. His first lecture was held on November 14, before a large audience assembled to welcome the new head of the well known Ecole de Necker.

Several of the recent sessions of the Académie de Médecine have been devoted largely to the question of the treatment of cancer. Prof. Poirier is firmly convinced of the curability of cancer by the resort to early and extensive surgical intervention. While it is true that the nature of carcinoma is still entirely unknown it is certain that the disease is at first local and remains so for a longer or shorter period of time, and during this time is curable by widespread excision. According to M. Poirier, no serum has ever cured a single malignant growth. As for radiotherapy, which to be sure has a specific action in regard to certain superficial cancers, no cure of a deep cancer can be credited to it. The speaker also insisted on its especially deplorable effects in cancer of the tongue. At first pain is relieved and the glandular enlargements are reduced in size, but the process continues in the deeper parts and the condition has already become inoperable when the patient finally abandons radiotherapy in order to consult the surgeon. The speaker concluded by saying that it was greatly to be regretted that there was not in France an institute for cancer research like those of Germany and England.

Prof. Berger also affirmed that surgical operation is still

the only remedy by which cancer may be cured. Medication and serum therapy were both ineffectual, and radiotherapy was of value only in the very superficial forms, but even operation gave results only under very restricted conditions and its benefits were sometimes uncertain. Like the preceding speaker, Prof. Berger proposed the organization of a scientific committee for cancer research which should centralize and direct investigations in this field. Prof. Cornil also spoke in favor of this idea and said that the cancer institute should possess a laboratory for histological studies and another for experimental work.

Prof. Grancher submitted to the Académie the result of his investigations on adenopulmonary tuberculosis carried out in the schools of Paris. He said that during the past three years he had made systematic examinations on more than 4,000 school children. He considered that adenopulmonary tuberculosis in children was curable, but only under certain favorable conditions. It was necessary to begin the treatment in the very earliest stages of the disease. He had been able to detect it in its first beginnings in from 15 to 16 per cent. of the Parisian school children. It had been found that the treatment tried in the schools of giving the children an extra meal of meat extract and cod liver oil was not sufficient. It failed to do more than to keep the condition from progressing in the majority, while it did not prevent some from becoming growing worse. It was therefore necessary to assist the parents of the child and this might be done in two ways. Children suffering from slight degrees of tuberculosis and not throwing off bacilli might be placed in country families who would be informed that the child was sick and would be paid a sufficient amount to secure adequate care and proper feeding for it. Under these conditions the child should be under the care of a physician who would be able to determine when the tuberculosis became infectious and the patient should be removed. The other method was considered preferable by M. Grancher and consisted in placing the children in a school sanatorium in the country under medical supervision.

At the recent meeting of the Société de Chirurgie M. Pousson of Bordeaux discussed the surgical treatment of renal hematuria. The author advocated the conservative operations, comprising nephrotomy, the nephrolysis of Rovsing, and the decapsulation of Edebohls. In his opinion simple incision of the kidney had a very beneficial effect. Unfortunately the patients who have been subjected to simple decapsulation have not been under observation a sufficiently long time to determine the value of this procedure.

M. Jean Louis Faure reported the result of his experience in the treatment of cancer of the cervix by abdominal hysterectomy. He had performed this operation forty times; eighteen of the patients had been kept under observation, and of these ten had suffered recurrences, whereas several others appeared to have been permanently cured. The author employed the technique of Wertheim. Out of twelve patients who had survived the operation nine had remained without recurrences for a period of time varying between fourteen months and four and a half years. The operation was long, difficult, and fatiguing, but the results appeared to recompense the surgeon largely for the pains he took. Faure believed that by operating early and carefully still better results could be obtained, and that perhaps cancer of the cervix would come to be in the same class with cancer of the breast.

The treatment of cancer by radiotherapy was considered by the Société Médicale des Hôpitaux and M. Beclere offered the following conclusions: In dealing with a subcutaneous new growth, and especially a new growth of the breast, of which the nature was still uncertain, the physician could not do better than to obtain the advice of a competent surgeon, but in all cases where operation was either voluntarily deferred by the surgeon or refused by the patient it was the duty of the physician to resort to radiotherapy rather than to lose precious time by the use of so-called resolving ointments or other equally ineffectual measures.

An interesting procedure for obliterating tattoo marks was described by M. Variot. The patient was a man of twenty-five years who had two tattoo marks on his left forearm, one anteriorly representing a naked female and the other on the posterior surface. On account of the indecency of the pictures the man, who was a laborer, was unable to find employment, and accordingly he was very anxious to be relieved of his adornments. Variot resorted to the method of cauterization by means of tannin and silver nitrate. For this purpose a bundle of needles was used to pierce the skin to the same depth as was done in performing the tattooing, and in this way the solution of tannin or silver nitrate was enabled to penetrate to the layer where the pigment particles had been deposited. Two months after the termination of the treatment one saw only a slightly pigmented scar, brownish in color, and not very conspicuous. The skin of the region was soft and moved readily over the aponeurosis. Another procedure was suggested by M. Danlos, who recommended the repeated application of blistering agents, but he said that the ideal method was electrolysis, by means of which it was possible to destroy the tattoo marks very rapidly without leaving any visible scar.

An interesting book entitled "Les Aliments Usuels," by Dr. A. Martinet, has recently appeared. It is intended to place within reach of the general public modern ideas on the subject of rational dietetics. The first part is devoted to the study of the fundamental foodstuffs and to a description of the methods employed for their chemical and physiological investigations. The author then describes the separate foods in detail and discusses their value in health and in disease.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

NEW BERLIN HOSPITALS—THE HEART IN GOITER—THE MODE OF ACTION OF GASTROENTEROSTOMY—A RARE BLOOD DISEASE—EXPERIMENTAL KYPHOSIS—ELECTRIC OPHTHALMIA—THE MEDICAL TREATMENT OF PROSTITUTES.

BERLIN, December 18, 1906.

DURING the past few weeks most of the Berlin physicians have been inspecting the various new hospitals. The Rudolph Virchow Hospital especially is proving a great center of attraction for visitors, and with its beautifully-laid-out grounds shows to its best advantage in these delightful autumn days. Only 300 of the 2,000 beds are now occupied, but one can already gain an adequate impression of this enormous institution which is especially interesting to visit since the directors themselves conduct sightseers through the buildings. Recently the new hospital of the suburb Pankow has been opened, which, though small, is planned so that it can be enlarged to a capacity of 400 beds and possesses all the facilities of a modern hospital. It is expected that the much larger Schoenberg Hospital will be ready for occupancy this year, and it seems as if in the near future it would no longer be possible to speak of a scarcity of hospital accommodations in Berlin.

In the first session of the Verein für innere Medizin Kraus read a paper on the condition of the heart in goiter. He stated that the relations of the thyroid gland to heart action could be toxic or mechanical. Three chief varieties of etiological factors could be distinguished. First, those present in exophthalmic goiter, second in struma, and third in artificial hyperthyroidism. In these cases tachycardia might be present, with a heart beat of from 80 to 120 while at rest, and 140 after exercise. The tonus of the vessels was diminished, but the blood pressure was often somewhat elevated. Staring eyes, wide pupils, exophthalmos, sweating, tremor, and dermatographia were usually present. A partial strumectomy was generally effective in giving relief and iodine was a valuable remedial agent. The term "Formes frustes" of exophthalmic goiter applied by Charcot to this condition of the heart was a bad one, and Kocher's expression "equivalent of exophthalmic goiter" was better. The fact that in some cases the condition remained a local equivalent, while in others real exophthalmic goiter developed, depended on individual conditions, as had been shown by the experimental feeding of thyroid extract to animals.

Katzenstein addressed the same society on the effect of gastroenterostomy on gastric ulcer and gastric carcinoma. He believed that the beneficial effect of the operation was due largely to the improvement brought about in the motor function. In order to investigate the causes of this action he performed gastrostomy on seven dogs that had been subjected to the operation of gastroenterostomy. The speaker stated that the action of pepsin was inhibited in an alkaline medium, but that trypsin, even after having been subjected for twenty-four hours to the action of hydrochloric acid and then being rendered alkaline, did not lose its potency. That was why, after gastroenterostomy, in which the bile and pancreatic juice entered the stomach, the food could still be thoroughly digested. On introducing food into the stomachs of dogs that had been subjected to gastroenterostomy the speaker stated that a diminution in acidity could be detected one and a half hours later, and if meat and fat were given, after even half an hour. He made artificial ulcers in the stomach and intestines and dabbed them with hydrochloric acid. The gastric ulcers in these dogs were cured through the alkalinization of the gastric juice, but those of the intestine went on to perforation. The prolongation of life that often occurred in carcinoma after gastroenterostomy was explained by the speaker on the assumption that the carcinoma was digested by the trypsin.

At a meeting of the Medizinische Gesellschaft, held on

October 24, Senator read a paper on a rare disease, of which only a few cases have been observed, and which is called polycythemia rubra megalosplenica. The disease, he said, was characterized by a dark coloration of the skin, erythrocytosis, and splenic enlargement. In the two cases observed the red blood-cells were increased to six to ten millions per cmm. In its other characteristics the blood was normal, though the blood pressure was raised somewhat. The causes of the erythrocytosis were either a diminution in the destruction of the red cells or a stimulation of the hematopoietic organs. In favor of the latter view was the fact that in three cases of the disease hyperplasia of the bone marrow was reported. It was possible that the spleen produced stimulating substances which gave rise to the polycythemia.

A new subject for experimental research was suggested by a paper on experimental kyphosis recently read by Munk at a meeting of the Physiologische Gesellschaft. This investigator was able by various operative procedures to produce spinal curvatures of various types in monkeys and described the method of causation of secondary palsies of the extremities and the lesions of the spinal cord produced by these measures.

Czellitzer read an interesting paper on electrical injuries before the Medizinische Gesellschaft. This paper should prove of interest in all countries where electricity is largely used for industrial purposes. Thirty-two employees in a foundry where welding was done by means of a powerful electric current which gave out an intensely brilliant light were affected with electric ophthalmia, so called, although they simply passed by the source of light at a distance of fifteen or twenty feet. The patients awoke during the night suffering from pain in the eyes, the lids became swollen, the eyes could not be opened, and photophobia, epiphora, and swelling of the conjunctiva were present. The condition was relieved after several days of treatment by boric acid compresses. The speaker pointed out that in this case the workmen simply passed by the source of light without looking at it, and yet they were affected. He assumed that the disease was caused by the ultraviolet rays and not by the red light rays.

The Berlin police officials have been planning for a reform which will do away with an abuse of long standing. It is the duty of the police department to supervise the treatment of all prostitutes who become diseased. Many of these women avoid treatment because they are obliged to go to a special hospital and are kept under observation for a long period of time. On this account the danger of spreading venereal disease is great, and, besides, sojourn in this special hospital and association with old offenders serves to complete the demoralization of those for whom otherwise there might still be hope of reform. The police department has secured the services of specialists in venereal diseases who will treat such women gratuitously. Under these conditions the patients will not be required to remain under police observation. The physician's certificate will be sufficient to relieve the women from the necessity of being under surveillance and of entering the special hospital.

Progress of Medical Science.

New York Medical Journal, December 29, 1906.

Errors in the Treatment of Cutaneous Cancer.—A. R. Robinson refers to the many plans of treatment which have had their run and are now forgotten. He has seen no noticeable benefit from the use of thyroid extract in visceral cancer. Toxins, sera, etc., are useless. He describes the methods he follows in cancer in the various bodily areas, holding that that method of treatment is best which removes with the greatest certainty all of the pathological tissue, even if the resulting deformity is greater than that caused by some other less effective method; and that of two methods offering equally good results as regards a cure, there should be employed that one which would cause the least deformity, when deformity from a cosmetic standpoint must be considered. The comparative effects of the various caustics are fully described. The author says concerning the *x*-ray that it is a decided addition to our armamentarium against cancer, but its virtues have been overexploited by some writers, perhaps for reasons best known to themselves. It is a grave error to maintain that with the *x*-ray alone all cases of cancer of the skin can be cured. This is not even true of cancers seen in a very early stage. It is also an error to hold that in all such cases where it could effect a cure it is the best agent to be employed. He believes its exclusive use should be limited to a very few cases out of all those that come under observation, such as those of rodent ulcer and some cases of superficial prickle-celled epitheliomata. In closing, the author calls attention to the following principles: All cases of multiple cutaneous cancer and all aged persons with cutaneous cancer require internal treatment in the form of diet and drugs in addition to local measures. A diet of milk and green vegetables and the avoidance of meats in general and of meats of such organs as liver and kidneys in particular, and the avoidance of alcohols, is advisable in all cases of cancer, whether external or internal. Thyroid extract should be given in as large doses as can be borne in all cases where there is a senile condition of the skin and in most superficial epitheliomata. A knowledge of the kind of cancer present, the pathological anatomy, and the manner of extension of the disease in general and of the special variety of the case to be treated is necessary to a correct choice of method of treatment. When possible all cases should be under observation at least one year after commencing treatment of any kind, in order to treat promptly any recurrence of the disease. Early diagnosis and correct treatment place cutaneous cancers among that class of diseases, which do not deserve the name of incurable diseases, as almost without exception they can be treated successfully if the method employed is the correct one.

The Physiology of Language and Its Relation to the Treatment of Stammering.—G. H. Mackuen defines stammering as a more or less constant inability to speak freely owing to an incoordinate and spasmodic action of the respiratory phonatory or articulatory muscles. It is a very common affection. One per cent. of school children stammer. The author describes the methods followed in the analysis of the fundamental sounds of letters as used in speech, and shows how it is necessary to construct an alphabet of sounds which shall bear the same relation to speech that the English alphabet of letters bears to writing. He presents a tabulated "physiological alphabet" thus constructed. The use of such an alphabet in the treatment of stammering serves as a mental, as well as a physical, discipline. Just as a child learns to read one short word or syllable at a time, so the stammerer should be taught to phonate or articulate one short word or syllable at a time. This process is known as syllabication. Attention is also called to the physiological division of words into syllables for the purpose of syllabication. They should be divided, not according to their etymology, as you find them in the dictionaries, but according to their physiological enunciation. For instance, we say phy-si-o-lo-gi-cal, not physi-o-log-ic-al, and e-ty-mo-lo-gi-cal, not et-ym-ol-o-gic-al. This is the natural or easy way to pronounce words, and we take advantage of the fact not only by calling the attention of the stammerer to it, but by practising him in the art of doing it. We also teach him syllabication by having him read the elements of language as they appear in sentences. This is called phonetic reading.

Eyestrain as a Cause of Headache.—Linn Emerson says that eyestrain is the cause of insomnia, vertigo, nausea, neuralgia, migraine, and failure of general health, and has but scant patience with those who believe otherwise. He believes that more than half the cases of so-called bilious or sick headache are due to eyestrain, and that many cases of the above named nature are referable to the same cause. He also finds that another class of cases frequently failing to receive proper treatment are the early presbyopes. The individual with normal eyes and health goes to the age of forty-five before glasses are required for near work. But if there is moderate impairment of health or latent hyperopia present, the patient begins to have headaches at forty, or even sooner, and for various reasons the eye condition is overlooked. One of the principal reasons why the eye condition is often overlooked is because the mind of the layman associates the use of glasses for near work with oncoming senility, and as a woman is only as old as she looks and a man as old as he feels, the imputation that the patient is getting old is sharply resented. That the power of accommodation fails rapidly after the age of twenty-five is unknown to the patient, and to say that they are presbyopic or old-sighted is an unpardonable breach of courtesy. There is such a condition as premature presbyopia, and in many instances we are obliged to give glasses for near work to patients even in the twenties. Among women all the head symptoms occurring between the ages of forty and fifty are generally attributed to the menopause. Many of these cases would be markedly relieved of their troublesome head symptoms by the use of proper glasses for near work.

Divers' Paralysis with Scarlet Fever.—R. Ellis reports the case of a civil engineer working in compressed air who had a sudden attack of acute myelitis. There was complete loss of sensation and motion from the nipple line down, with partial paralysis of the diaphragm and entire loss of temperature sensation. There was partial paralysis of arms and neck, so that his hands, arms, and head were not under control. There was complete paralysis of the bowels and bladder. His mental condition was normal. Two days afterward an expert in spinal diseases gave a bad prognosis and ordered no treatment. His temperature ranged from 99° to 102°, pulse about 90. On the fourth day scattered red points appeared about both elbows. On the fifth day there was quite intense hyperemia of the skin of the entire body looking like scarlet fever rash. The throat was not sore, but slightly red; the tongue was coated with red edges. There never was nephritis, but cystitis developed early. There was complete desquamation. There were severe rheumatic pains in left shoulder and elbow nad left knee joints. There were no other complications. Three experts made a positive diagnosis of scarlet fever and as a result the patient, with four attendants, was isolated for six weeks in the hospital garret. No other case of rash developed among 250 patients who were exposed. The author says that further study is called for to determine whether the rash attending some cases of myelitis is really scarlet fever or an acute exfoliating dermatitis.

Journal of the American Medical Association, January 5, 1907.

Lupus Vulgaris.—Two cases of lupus of the ear, illustrating the serious nature of the disorder, are reported by A. Ravogli. In both, the tubercle bacillus was found in the extensive ulcerations destroying the external ear, and in one the disease had deeply involved the underlying bony and other tissues. He remarks that connective tissues, bones, and fascia do not have the resisting power to the tubercle bacillus that is possessed by the skin, and when the germ gets away from the latter it is no longer under control, and in a short time the disease is reproduced in a nodular or disseminated form which represents miliary tuberculosis of the intestinal organs. Lupus therefore is always a serious disease, and prognosis should be guarded in any case. In these cases treatment was discouraging; the Finsen method failed, though it was at first apparently helpful in one case. The best results, so far, were obtained by applications of pure lysol, which forms a hard whitish eschar, followed by healthy cicatricial tissue. The article is illustrated.

Cancer-Infected Cages for Rats and Mice.—H. R. Gaylord and G. H. A. Clowes give the history of the endemic occurrence of sarcoma in rats in an infected cage in the New York State Cancer Laboratory. Three years previously the cage had been used for the keeping of rats inoculated with sarcoma. They also give an account of another infected cage in which, in the course of three years, over sixty cases of carcinomatous tumors have occurred in white mice. The frequent changes of location of the cage and of its occupants in at least one instance without interrupting the occurrence of tumors seem to leave no doubt that the infection is in the cage. The authors consider it the most striking example of cage infection that has yet been recorded. These observations, they remark, indicate that both sarcoma in rats and carcinoma of the breast in mice (all the cases in the mice seemed to occur in females), must be looked on as contagious, and, taken in conjunction with other like observations on record, should, they think, lead us to give more consideration to the possibility of the contagion or local infection of malignant growths in the human species.

Migrainic Psychoses.—Alfred Gordon reports twelve cases of migraine associated with mental symptoms, observed within the last four years, and all presenting similar types of derangement, namely, confusion, delirium, usually with hallucinations, and stupor. The hallucinations were usually visual, though gustatory and auditory hallucinations were also observed. The confusional stage predominated in all, and was frequently accompanied with illusions of identity, incoherence and disturbance of orientation. Some of the cases suggested psychic epilepsy or procursive epilepsy. In the majority of cases the mental symptoms occurred during the attacks, and in some they continued twenty-four hours after the subsidence of the migraine. In some cases, however, they occurred either before or after and they lasted in some cases for twenty-four hours after the subsidence. He does not think that he can explain these conditions as epileptic or hysterical, though in some cases they suggested it. The special point is their association with an autotoxic condition, which is the basis of migraine.

Atrophic Rhinitis.—G. L. Richards reviews some of the more recent literature and theories of this disease. He finds little support in the facts for the theories that have been advanced of its etiology; that it is secondary to accessory sinus disease, that it is dependent on special conformation of the parts, that it is due to excessive dryness of the atmosphere, or that it follows the purulent rhinitis of childhood. It has not been proven in any case that the bacilli that have been found in the lesions or atrophic rhinitis are responsible for anything more than the odor of the disease, and Richards is inclined to think the view of Cozzolini, that it begins primarily in the bone, as an atrophy of the medullary blood-vessels, becoming later a periostitis or a rarifying ostitis, and the microorganisms play only a secondary part, as the most reasonable of all which have been advanced. The etiology is as yet an undetermined one and a subject for further study. There seems to be a predisposition, sometimes apparently hereditary, but just what constitutes this predisposition is undetermined. The various measures proposed for the treatment are reviewed and the result is rather discouraging. When all is said and done, the local therapeutics, he says, seems to reduce itself to a thorough cleansing of the nasal mucous membrane, and the use of any application which produces a mild stimulation is probably as effective as anything. The severer remedies do not seem to have any advantage over the milder ones. He hopes that a specific may yet be found and that the future will give a successful treatment. Notwithstanding his pessimism as to perfect cure, he always tells patients that they can be improved, which is true, and that with careful self-care they can keep the nose free from crusts and have a reasonable degree of comfort with it. In a few cases in which he has been able to control the treatment for a sufficient length of time in young persons, it seems to him that he has brought about a cure.

Digitalis Heart Block.—A. W. Hewlett gives the history of a case in which the use of digitalin was followed by slow and irregular pulse, the irregularity consisting in a dropping of the beats accompanied with precordial distress. Auscultation showed that the dropping was not due to the occurrence of extra systoles, but that during the intermission there was either absolute silence or at most only a faint and indefinite soft sound over the base of the heart. Simultaneous tracings from the veins of the neck and the apical region showed two forms of irregularity, the first due to a blocking of the cardiac contraction wave passing from the auricles to the ventricles, while in the second form the beat was also dropped out, but there was no auricular pulsation in the pause of the ventricular rhythm. He discusses the mechanism and causes of these phenomena and assumes the probability of a block occurring above the auricles as well as at the auricular ventricular septum.

The Lancet, December 22, 1906.

Heart Massage as a Means of Restoration in Cases of Apparent Sudden Death.—An analysis of 40 cases is made by T. A. Green. From the tables presented we learn that there are records of 0 successful cases and of 8 partially successful cases; that is, cases in which life was prolonged for periods ranging from two to twenty-four hours. Epitomized histories of the 40 cases are given. The author makes the following statements: (1) It has been possible in human beings to restore the heart beat by massage when ordinary measures of resuscitation have failed, even when the massage has not been commenced until the heart had been stopped for forty-five minutes, but a definite and complete cure has never yet been effected when this interval has been longer than from seven to eight minutes. (2) In many of the cases the adoption of massage for a period of from thirty seconds to five minutes has been sufficient to restore the heart beat, but it has sometimes been necessary to go on with it for fifteen minutes, or even longer. (3) Artificial respiration and its adjuncts must also continuously be applied, and sometimes it is necessary to persevere with it long after pulsation is restored in order to reestablish the respirations. For cases, therefore, of sudden heart and respiratory failure, he lays down the following order of procedure: (1) Immediate

lowering of the head and the commencement of artificial respiration and tongue traction, taking care that a free access of air to the lungs is possible and therefore implying tracheotomy if necessary. (2) If the abdomen is open, pressure on the abdominal aorta to confine the circulation to the upper part of the body. If it is not open the intravenous injection of adrenalin solution and the application of Crile's rubber suit or, failing this, tight bandaging of the limbs and abdomen. (3) The subcutaneous or intravenous injection of normal saline solution, partly to raise the blood pressure and partly to dilute any poisons which may be in the blood and tissues. (4) If the above methods have not been successful after being applied for from eight to ten minutes heart massage by the subdiaphragmatic method. This route should always be adopted, unless the chest is already opened or to be operated upon, as being the easiest way of access, the one fraught with least danger to the patient, and the one which has given the greatest percentages of success. The time is fixed at from eight to ten minutes because eight minutes is the limit of the interval at which up to the present time a complete success has been obtained in man, and if it is exceeded the danger of the production of fibrillary twitchings, inability to restore consciousness, and the development of spasms in the voluntary muscles with consequent failure of the manipulations have to be taken into consideration. The unavoidable extension of this limit should, however, be no bar to the adoption of the method, as very hopeful results have been obtained, even when forty-five minutes have elapsed from the onset of the syncope before it has been tried. (5) After normal pulsation has returned to the heart, artificial respiration must be continued until spontaneous breathing has been restored or until circumstances make it improbable that such restoration will be obtained.

An Operation for the Cure of Prolapsus Ani and Internal Hemorrhoids.—After some general observations D. Newman describes the operation, the object of which is to cauterize the mucous membrane of the rectum into six narrow strips from above downwards, each strip being four inches long by a quarter of an inch to one-sixth of an inch broad. This is done through a fenestrated speculum six inches long, four inches in circumference, and one and a quarter inches in diameter, with six windows four inches long and one-sixth of an inch broad. When the speculum is inserted fully the lowermost limits of these windows is half an inch above the anus, so that the mucocutaneous line is protected from the cautery. A general anesthetic having been administered, the patient is placed in the lithotomy position with the knees well raised and the hemorrhoids or prolapsed rectum is fully reduced. Then, having explored the passage with the finger, the fenestrated speculum containing the obturator is introduced to its full length; the obturator which prevents the mucous membrane from protruding into the lumen of the speculum during the introduction is then withdrawn. When light is reflected by a forehead mirror into the speculum the congested mucous membrane is seen protruding through the six openings in the speculum, the disc is then passed into the speculum to close the upper end of it, in order to prevent the mucous membrane at the end of the speculum from being accidentally scorched by the cautery. All the mucous membrane which protrudes through the opening of the speculum is freely cauterized with an iron cautery at a dull-red heat, and, if necessary, the speculum is cooled by allowing a stream of water to play upon its interior for a few seconds between each application of the cautery. When the operation is completed six narrow strips of cauterized mucous membrane are seen, the surface of which is almost level with the metal of the speculum. The disc is now withdrawn; a half-grain morphine suppository is introduced and the speculum is firmly packed with gauze covered with vaseline, and against the outer end of the gauze the obturator is held, and over it the speculum is withdrawn. The gauze tampon is retained within the rectum, its free end alone showing at the anus. The after-treatment is small doses of opium by the mouth and very limited diet for a week, so as to give the lower bowel complete rest during that time. The external parts are kept well cleansed, the tampon is retained till it causes uneasiness, and on the seventh day a laxative is given. The instruments above referred to are figured in the original article.

The Influence of Calcium Chloride on the Agglutination of Vibrios. The results of further observations by M. Crendiropouls and C. B. S. Amos are presented in tabular form. Their methods are described and their conclusions are given in the following language, their work being confined to vibrios obtained from choleraic and dysenteric stools at various Egyptian localities, notably El Tor: (1) Chloride of calcium greatly favors the agglutination of the vibrios usually considered to be those of true cholera. (2) On certain other vibrios which, though agglutinated by the so-called cholera serum yet without all the so-called specific characteristics of cholera vibrios, the effect of the calcium salt agglutination was very slight. These latter vibrios, while agglutinated by the serum, were hemolytic and did not fix the immune body of cholera serum.

British Medical Journal, December 22, 1906.

The Exanthem of Scarlet Fever and Some of Its Counterfeits; Clinical Significance of Skin Hemorrhages in Diphtheria.—These topics receive an interesting consideration by J. MacCombie, who discusses the scarlatiniform rashes seen at times in measles, variola, varicella, in enteric fever, scalds, etc., and in diphtheria following antitoxin injections. He points out the factors of differential diagnosis, noting, with special reference to German measles, the absence of the purely erythematous rash of scarlatina and observing that the spots are to be found on the face as well as on the trunk and extremities. On the trunk the individual macules are larger than the fine punctations of scarlatina in the same location. On the forearms and legs the scarlatinal rash is frequently papular, and the individual spots may be as large as the head of a good-sized pin, but this characteristic does not obtain of the rash as a whole. Skin hemorrhages in diphtheria signify a pretty general toxemia. The author has noted a little over 200 cases in a total of 6,755 diphtheria patients. None were seen in cases brought under treatment on the first day of the disease. The patients have practically all been under twelve years of age, and the hemorrhages have been rather more common below than above the seventh year. They are more marked on areas subject to pressure, but are by no means limited to such areas. They are more common in severe faucial diphtheria with which nasal involvement is associated. In pure laryngeal diphtheria they are rarer. The areas most frequently involved are the trunk and extremities, but they may develop on the face, ears, and neck. As a rule the number of spots does not exceed six. There may be in addition scattered red petechial spots. If only one or two hemorrhagic areas are present, the patient may recover; but if there is a greater number, the case is nearly always fatal. For this reason they afford a most valuable aid to prognosis which it is wise not to overlook. In some of the cases persistent epistaxis precedes or accompanies the appearance of these skin signs. Incidentally the occurrence of persistent epistaxis about the fourth or fifth day of faucial diphtheria leads one to anticipate the very probable occurrence of skin hemorrhages within a short time thereafter. Hematemesis is sometimes present, due in many cases to hemorrhage from the mucous membrane of the stomach. Persistent vomiting and signs of cardiac failure are to be noted in most cases showing skin hemorrhages, the patient dying of toxemia and cardiac failure. The duration of life after the date of onset of the skin hemorrhages is usually four or five days, sometimes less, while some cases live for a week or a fortnight. In preantitoxin days patients hardly ever survived more than two days after the skin hemorrhages appeared. Cases which recover are those in which vomiting and cardiac failure are absent, or are little in evidence.

Berliner klinische Wochenschrift, December 17, 1906.

The Successful Removal of a Tumor of the Occipital Lobe of the Brain.—Oppenheim and Krause describe this case in which a tumor of unusual size was removed from the occipital lobe of the brain. The patient was a man of thirty-five years, who, after suffering for some weeks from headache, developed right-sided hemianopsia, optic neuritis of the right eye, vertigo, vomiting, bilateral choked disc most pronounced on the right side, and partial alexia and agraphia. A little later right-sided hemihyperesthesia, hemiataxia, and hemiparesis developed. Iodine and mercury as well as other internal remedies proved without effect, and as it was believed that from the clinical signs the tumor could be located in the occipital region of the left side, operation was decided upon and performed in two stages three and a half months after the onset of the headache. At the first stage a large quadrilateral bone flap was made over the occipital lobe, exposing the lateral and longitudinal sinuses. Sixteen days later

the wound was reopened and the dura incised. The tumor could be immediately seen occupying the lower median angle of the opening made, and it was easily removed by blunt dissection. It measured 32x55x58 mm., and was egg-shaped. On microscopical examination it was found to be a spindle-celled sarcoma. The operation lasted only one-half hour and there was little loss of blood, but during several days the patient was in a very precarious condition owing to high temperature and rapid and feeble heart action. He ultimately recovered completely, however, and has been able to go about his business as well as ever, the only symptoms persisting being a moderate contraction of the right visual field, while otherwise he is entirely free from difficulties.

A Gigantic Renal Calculus.—Johnsen says that the largest kidney stone removed by operation heretofore reported is one described by Sheild in the *Lancet*, October 15, 1904. This stone, which weighed 570 g., had a length of 13 cm., and its largest lateral circumference measured 26 cm. A calculus recently removed by Pelz surpasses this specimen in size, though not in weight, as it measured 14.1 cm. in length, and its largest longitudinal circumference was 33.5 cm., and the largest lateral circumference 28.5 cm. Its surface was extremely irregular and, owing to the very dense fibrous tissue growth its presence in the kidney had evoked, the removal of the stone, together with what remained of renal substance, could be effected only with the greatest difficulty. The patient made a good recovery.

Münchener medizinische Wochenschrift, December 18, 1906.

Immunity in Mice Against Carcinoma.—Schöne describes experiments made in Ehrlich's laboratory to determine whether by injecting emulsions of various organs it is possible to render mice refractory to inoculation with Jensen's mouse tumor. Experiments with mouse liver, mouse testicle, and chick embryos seemed to confer a slight degree of immunity, though this was not very marked, but on using mouse embryos a very pronounced grade of immunity could be obtained. A moderate degree of immunity was also secured by injections of human carcinoma of the breast. Schone considers that these experiments as well as Bashford's similar results with the injection of mouse blood are sufficient to overthrow Doyen's belief that carcinoma immunity is bacterial and that the *Micrococcus neoformans* is concerned in the process.

Three Cases of Neuralgia of the Tongue.—Hoeflmayer says that neuralgia of the tongue is extremely rare, and yet in the last year he has seen three cases of the affection. All of the patients were men, moderately neurasthenic and suffering from chronic constipation. In none of the cases were either the glossopharyngeal or hypoglossal nerves affected. The pain involved only the domain of the lingual nerve, and the anterior third of the tongue which is supplied by the chorda tympani was not included in the painful area. In each case cure was effected by relieving the tendency to constipation, and the author ascribes the condition to the absorption of toxins from the intestines.

Deutsche medizinische Wochenschrift, December 20, 1906.

Diagnostic Difficulties in Regard to Incarcerated Femoral Hernia. Haberern calls attention to the many different conditions, such as hydrocele, testicular swellings, enlarged glands, abscesses, etc., that may simulate hernias, and that have led to wrong diagnoses, but speaks particularly of varicosities of the saphenous vein in connection with femoral hernia. He himself was led into error in dealing with the case of a woman of forty-nine years who presented what appeared in all ways to be the typical picture of an incarcerated femoral hernia accompanied by the usual symptoms of sudden onset of painful swelling, nausea, vomiting, and constipation. Some years previously, on consulting a prominent gynecologist, she had been assured that she was suffering from hernia and a radical operation was proposed. This was refused by the patient and since that date she had worn a truss constantly. On cutting down upon the tumor, suddenly a tremendous gush of blood was poured out, and the true nature of the condition became evident. The saphenous vein was tied off together with the plexus of inflamed varicosities and the wound healed by primary union. At present, three years after the operation, there is no trace of either varicosities or hernia. The author states that while it is usually easy to distinguish varicosities from a reducible hernia, it may be a matter of the greatest difficulty to differentiate between varicosities and an incarcerated hernia, and he reports his case as an illustration of this fact.

French and Italian Journals.

Appendectomy Phlebitis of the Lower Left Extremity.—Broca refers to a case reported by Dieulafait. This patient, a man twenty-two years old, was operated upon after a third crisis of appendicitis. The operation was simple and easy, and healing was rapid without suppuration. Nevertheless, on the fifteenth day a small oozing of bloody fluid was noticed at the cicatrix, and the existence of a phlebitis of the left leg was discovered. Different interpretations of such a condition are given. Dieulafait thinks that perhaps it is due to the relative mobility of the left leg during the period of dressings and rest. Broca has observed several such complications following kelotomy practised on the right. He knows of no explanation for such an occurrence.—*Le Bulletin Médical*, October 20, 1906.

Electricity in the Treatment of Skin Diseases.—Augustino di Luzenberger says that electricity is beneficial to various forms of skin diseases, and in various forms or application. Among these are galvanism, electric cataphoresis, static electricity, and the *x*-rays. Cataphoresis is useful in the destruction of keloids, acne rosacea, erectile and cavernous angiomata by causing coagulation in them. The direct galvanic current produces dilatation of the vessels, and dissipates edema. The chief power of cataphoresis is a biological rather than a chemical one. There is cellular and trophic stimulation. Static electricity given in form of baths has a stimulating and tonic effect, and increases the activity of metabolism, assimilation, and elimination. It is useful in pruritus, urticaria, impetigo, and furuncles. It is used for varicose ulcers and for alopecia. The resonator of Oudin has a sedative effect on pruritus, stops the development of infective agents, produces transitory analgesia, causes vasoconstriction, and modifies inflammatory processes. It is useful in eczema, prurigo, lupus, acne, impetigo, etc. The value of the *x*-rays in lupus is well known.—*Annali di Elettricità Medica e Terapia Fisica*, September, 1906.

Abdominal Pregnancy with Fetal Retention Dating Back Twenty-one Years.—Bégouin observed this patient, a woman who at nineteen years of age had given birth to a child. At the age of twenty-four years she had a miscarriage of two months and a half, and at the age of thirty-three she had become pregnant again. At the third month of pregnancy she showed the grave symptoms of hematocele, which were repeated at the fourth month; nevertheless, the pregnancy continued. At the ninth month false labor occurred, with death of the fetus. The fetus remained twenty-one years in the abdominal cavity, causing only slight disturbance. Then extreme pain developed, with loss of sleep and appetite, which rendered life intolerable. Laparotomy was performed, and the fetus, which was very adherent to the maternal tissues, was removed. Three months after the operation the patient died from intestinal occlusion. The fetus was in an excellent state of preservation, showing no calcareous incrustation. An abdominal fetus ought to be extracted at the end of some months, or in the course of the first year, when the maternal adhesions are comparatively soft.—*La Tribune Médicale*, October 13, 1906.

The Heart in Basedow's Disease.—Guido Dernini gives the histories of fourteen cases of exophthalmic goiter observed by him, in which he made a special study of the condition of the heart. He sums up his observations for us thus: 1. The heart in Basedow's disease is particularly sensitive to fatigue, soon using up its reserve force. 2. There is slight increase in the diameters, especially the transverse, but they are transitory. 3. The amount of fatigue of the heart is in relation to the general asthenia of the patient. 4. The return to its original size is almost complete; in advanced cases of the disease the return may be slow and incomplete. 5. The murmurs heard in the disease are very variable, and change rapidly in a short period. The condition of the blood has no influence in the production of such murmurs. *La Riforma Medica*, October 27, 1906.

Calculous Anuria and Ureteral Catheterism.—Imbert has recently had under his care two patients suffering with calculous anuria who were cured by ureteral catheterism. In these two cases the sound reached without difficulty up to the pelvis of the kidney. From this fact the observer concluded that there is no reason for admitting the existence of mechanical obliteration of the ureter by a calculus acting like a simple plug. In one of the patients a simple vesical lavage sufficed to reestablish the course of the urine. It is probable that there existed a double reflex: the first, provoked by the contact of the calculus with the ureteral mucosa, determined the contraction of the subjacent muscular layer; the second, which succeeded the preceding, was the arrest of the renal secretion which was due not to the presence of the stone, but to the tension of the kidney. —*La Presse Médicale*, October 17, 1906.

Book Reviews.

An Introduction to Physiology. By William Townsend Porter, M.D., Associate Professor of Physiology in the Harvard Medical School. Philadelphia and London: J. B. Lippincott Company, 1906.

This Introduction to Physiology is a guidebook for work in the physiological laboratory; and as such will probably be found useful by those in need of help in this line. The book is divided into three parts: the first dealing with the general properties of living tissues, the second with the income of energy, and the third with the outgo of energy. In the preface the author calls attention to the "concentration" system as adopted in the Harvard Medical School. By this method the first half-year in the medical school is devoted to anatomy and histology, the second half-year to physiology and biological chemistry, the third to pathology and bacteriology, the fourth, fifth, and sixth to practical medicine and surgery; while the seventh and eighth are elective, each student choosing for himself the studies best suited to his needs. The present volume is a collection of fundamental and accessory experiments in several fields of physiological knowledge, printed in an abbreviated form for the temporary use of Harvard medical students and other interested persons.

Operationen am Ohr. Die Operationen bei Mittelohreiterungen und ihren intrakraniellen Komplikationen. Für Aerzte und Studierende, von Dr. B. Heine, a.o. Professor an der Universität und Direktor der Universitäts-Ohren-Poliklinik zu Königsberg i. Pr. Zweite, neubearbeitete Auflage. Mit 29 Abbildungen im Text und 7 Tafeln. Berlin: Verlag von S. Karger, 1906.

The second edition of this work is well fitted for practitioners and students desiring a knowledge of the operations relating to the ear. To the student familiar with the German language, this treatise is especially beneficial. Going into the minutest detail, the author has taken pains and succeeded in covering the field in two hundred pages of excellent printed matter. The description of the operations for acute mastoiditis and for chronic suppuration of the middle ear are particularly interesting. The book is divided into two parts: the first treats of the operations of the tympanum and attic, the mastoid operation, and the opening of the labyrinth; in the second part are included the operations for extra- and intradural and brain abscesses, sinus thrombosis, ligation of the jugular, serous, and purulent meningitis, lumbar puncture, etc. Seven photoengravings, illustrative of the various operations on the temporal bone, contain some of the best descriptive pictures of the intricacies and pitfalls of these operations.

The Treatment and Prophylaxis of Syphilis. By Alfred Fournier, Professor at the Faculty of Medicine, Member of the Academy of Medicine, Physician to the St. Louis Hospital. Paris. English Translation of the Second Edition (Revised and Enlarged), by C. F. Marshall, M.D., F.R.C.S., late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London, formerly Resident Medical Officer to the London Lock Hospital. London: Rebman Limited; New York: Rebman Company, 1906.

Dr. Marshall is to be congratulated on his skill in converting Prof. Fournier's brilliant French into clear and attractive English, and in shortening the text, not by omission of matter, but by condensation of form. This is made possible by the fact that the original volume on treatment was a series of lectures, and therefore somewhat full, while the volume on prophylaxis was a collection of papers written at long intervals and containing many repetitions. By judicious pruning these two books of 714 and 558 pages respectively have been brought together into a single work of about 500 pages. The special paper used makes the volume very light and pleasant to hold. It is to be regretted that the publishers are not consistent in their choice of type for paragraph headings, using generally small capitals, but occasionally, and for no obvious reason, heavy black-faced type. The first part gives a very thorough description of the various methods employed, the greatest stress being laid on the chronic intermittent treatment with mercury given by the mouth, because, as Fournier insists, treatment must be kept up for at least two or three years, because the drug must not be allowed to lose its effect as a result of continuous administration, and because ingestion is efficient in the great majority of cases and is the only method which patients will consent to follow for so long a period. Chapters are devoted to inunctions, injections, and the use of potassium iodide, the value of all being fully recognized. The second part treats of the prophylaxis of syphilis by State regulation, by protection of nurses, by treatment, and by instruction, and is remarkable chiefly for the overwhelming evidence it affords of the havoc wrought by this disease among those who suffer from it through no fault of their own, recalling in this section the excellent treatise on "Syphilis Insontium," by Bulkley, of this city.

Diseases of the Stomach. A Textbook for Practitioners and Students. By Max Einhorn, M.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Hospital. Fourth Revised Edition. New York: William Wood & Co., 1906.

Dr. Einhorn's book is already so well and so favorably known to the profession that its appearance in a new edition does not demand detailed discussion. Gastric ailments have always been and will always continue to be among the commonest disorders that the practitioner encounters, but their successful management is often a matter of the greatest difficulty. The present volume was designed to assist in coping with the problems these cases involve, and it is extremely practical in conception and execution. The chief considerations of pathology and etiology are given due weight, but the greatest merit of the work lies in the clear and detailed expositions of the methods of diagnosis and treatment. The author's many contributions to this field have met with general appreciation, and in his textbook he presents in concise and readable form the results of his wide experience in special practice. Among the more important additions to this edition are profusely illustrated discussions of the application of the Roentgen rays and radium for purposes of gastric diagnosis. It is a pleasure to commend this highly serviceable book to the attention of all medical readers.

Traité d'Hygiène. Publié en Fascicules sous la Direction de MM. P. Brouardel, Professeur à la Faculté de Médecine de Paris, Membre de l'Institut; E. Monsy, Médecin de l'Hôpital Saint-Antoine; III Anthropologie, Hygiène Individuelle, Education Physique. Par R. Anthony, Secrétaire de la Société d'Anthropologie; E. Dupré, Agrégé à la Faculté de Médecine, Médecin des Hôpitaux de Paris; P. Ribierre, Ancien Interne des Hôpitaux de Paris; G. Brouardel, Médecin des Hôpitaux de Paris Auditeur au Conseil Supérieur d'Hygiène; M. Boulay, Ancien Interne des Hôpitaux de Paris; V. Morax, Ophthalmologiste des Hôpitaux de Paris; P. Lafeuille, Médecin-Major de l'Armée. Avec trente-huit figures dans le texte. Paris: J.-B. Baillière et Fils, 1906.

The present volume of this excellent series is attractively arranged in several sections, the first two of which are devoted to the consideration of physical and psychical anthropology, respectively. The means of studying the human form from life, including instruments and technique, and the use of statistics, are first considered. A discussion of the normal method of growth closes this section. Evolution and psychical growth are next taken up—phylogenesis and psychical ontogenesis, education of the intellect, physiological effects of fatigue of the mind, and the methods of estimating this fatigue in students and their practical applications follow in order. The remainder and greater part of the volume is given up to the consideration of Individual Hygiene in its different aspects. Under this subject clothing, its use, materials, various articles for different parts of the body and for the different ages, as well as cleanliness and disinfection of the same are all treated of in considerable detail. Following this is a most interesting chapter on the care of the skin, including the aspect and structure, the functions and microorganisms of this organ, as well as the subjects of baths and soap. The hygiene of the ear, nose, mouth, and throat, in both the infant and adult, is followed by a section on vision. The last part of the text treats of physical exercises and physical education. These subjects like the preceding are discussed in a broad and interesting manner. This work will prove a most valuable addition to any library.

Letters from a Surgeon of the Civil War. Compiled by Martha Derby Perry, Author of "God's Light as It Came to Me." Illustrated from Photographs. Boston: Little, Brown & Co., 1906.

These delightful letters were written by the late Dr. John G. Perry of Boston, who took part in the Civil War as a surgeon with the Army of the Potomac. While a student at Harvard he entered the army as a volunteer assistant to Dr. Cushing at Fortress Monroe in 1862. In April, 1862, he went back to Boston on account of a serious illness, and afterwards passed his graduating examinations. On March 18, 1863, he married the compiler of the letters. A month after his wedding he returned to the army with the Twentieth Massachusetts, taking part in the military operations at Fredericksburg, Falmouth, Culpepper, Bristoe Station, Mountain Run, Stevensburg, The Wilderness, and at the hospital near Petersburg. The letters were written to his sweetheart, later his young bride, during the campaigns and are alive with human and historic interest on every page. The book makes good reading for the doctor's family and for the waiting patient in his reception room.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held December 20, 1906.

THE PRESIDENT, DR. CHARLES L. DANA, IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Surgery.

General Considerations in Reference to Blood Examination in Surgical Diseases.—Dr. FREDERIC E. SONDERN read this paper. He said that laboratory investigations, no matter how important, were an aid only to the clinician; they did not and were never intended to replace his clinical diagnostic skill or his prognostic ability based on clincal experience. Blood examinations in surgical cases were an aid in determining the general state of health before and after surgical procedure; they aided in the diagnosis of conditions inducing lesions subject to surgical intervention or those complicating surgical diseases or their convalescence; they furnished information in the differential diagnosis between some surgical disorders and lent aid in determining the degree of depletion due to hemorrhage; and finally they presented evidence of decided value in determining the presence or absence of an inflammatory lesion, and, in the former event, they might indicate the degree of toxic absorption and the resistance offered by the animal economy toward this infection. The arbitrary rule that no surgical procedure should be undertaken when the amount of hemoglobin was below 30 per cent., while better than no rule was crude in the light of present knowledge. The evidence in the blood of malaria, typhoid fever, the different forms of leukemia, Hodgkin's disease, and the different types of anemia were often of decided value to the surgeon not only in diagnosis but also in differential diagnosis. The value of blood work in the differential diagnosis between Hodgkin's disease and sarcoma and between secondary anemia and so-called pernicious anemia needed no comment. The determination of the coagulability of the blood was of value to the surgeon particularly as means had been devised for increasing the coagulability prior to the operation. The determination of the opsonic index would lack practical application until ways and means were found for increasing this index when desirable. The most important service the blood examination could render the surgeon was to give information regarding the presence or absence of an inflammatory lesion, some idea of its severity, and some indication of the resistance offered. Iodophilia as a guide in this regard had not rendered signal service in his hands. Since advocating the value of the differential leucocyte count as an aid in the diagnosis of acute inflammatory lesions and the added significance it gave to the leucocytosis, his daily contact with cases in which this diagnostic help was sought strengthened his belief in this adjunct. In the application of this procedure it was absolutely necessary to keep in mind the fundamental principle on which it was based: the increase in the relative number of polynuclear cells was an indication to the severity of the toxic absorption, and the degree of leucocytosis as evidence of the body resistance toward this absorption. As in every other technical procedure, the differential count to be at all accurate demanded proper technique and faithful execution, usually expected but by no means invariably obtained from the hospital interne and even from the pathologist's assistant, as he had reason to know from control examinations which he had been asked to make. This diagnostic procedure lacked many refinements, and he added a few words concerning the disappointments and failures sometimes encountered. Children, and particularly infants, did not give the uniform results obtained in adults; in these the normal polynuclear percentage was a more variable quantity. When a purulent exudate was confined in dense pyogenic membrane so that no toxic absorption occurred, or when a purulent exudate was the result of a tuberculous or typhoid infection alone, there was no leucocytosis and no polynuclear increase. Suppurative bone lesions, and particularly suppurative processes on the surface of mucous membranes, showed lower counts probably on account of slower toxic absorption. Mixed infections, with or following tubercle bacilli or typhoid bacilli, did not show the extreme polynuclear percentages noted in primary staphylococcus and particularly streptococcus infections. The exact nature of the infection also had a bearing on the degree of polynuclear increase, some organisms causing higher percentages than others, everything else being equal. In closing he said that it was unfortunate that this diagnostic aid, blood cultures in septic conditions, had not found more favor in private practice.

The Surgical Application of Blood Examinations.—Dr. JOHN B. DEAVER of Philadelphia presented this paper. He considered what proper estimate might be placed by the surgeon upon the results of blood examination. These examinations in acute posthemorrhagic anemias were of more value after operation in indicating the rapidity with which the blood returned to normal. In these cases it was extremely common that the red corpuscles were restored sooner than the hemoglobin percentage. He said that diagnostically he had found the number and character of the red cells and the percentage of hemoglobin so nearly similar in patients afflicted with chronic suppurative processes and in others with malignant tumors, as *per se* to be often of no value. Given a hemoglobin percentage below 25, a paucity of small distorted red blood-cells and a disease-spoiled body, he considered the patient's condition provocative of the surgeon's most serious and sober contemplation. To him the white blood-cells had been a frequent source of perplexity. Clinically, one usually followed this biological phenomenon by comparing the number of leucocytes to the condition in which the patient was found shortly after the count was made, or, later, by comparing these various counts to each other and to the course of the disease, so that in this manner one should have a reliable indication of the presence of inflammation and suppuration, and should be able to gauge its course and severity. Now and then a case occurred in which a bacterial invasion did not permit itself to be revealed by any such method, and so he had been compelled to employ such terms as "usually" and "should have." If he had been asked to explain the *modus operandi* in those negative cases he said that he might reply in such indefinite phrases as "lack of resistance," "personal susceptibility," "impaired state of health," "idiosyncrasy," and so on, but instead he would resort to the subterfuge of answering a question by a question, and ask for example, why, in the Jewish race, diabetes mellitus was so frequently encountered, and tuberculosis so seldom, or why the Japanese were so immune to scarlatina, and the negroes to malaria? Therefore, with these reservations, leucocytosis would usually be found in infections leading to suppuration in any part of the body. In appendical abscess a leucocytosis was the rule, and, in looking over his records for the last 100 cases, he found that the count varied from 6,300 to 47,200, with an average of 17,760. Those below 10,000 numbered 10; between 10,000 and 20,000 numbered 61; between 20,000 and 30,000 numbered 23; above 30,000 numbered 6. The diagnosis of appendicitis was most frequently confused with pyosalpingitis and with biliary tract disease and a comparison of the counts was therefore of interest. In appendicitis with abscess (extra-appendical exudate) the high was 47,200; low, 6,300; average, 17,760; above 10,000, 90 per cent.; above 15,000, 62 per cent. In pyosalpingitis, high, 42,200; low, 5,300; average, 13,000; above 10,000, 67 per cent.; above 15,000, 32 per cent. In biliary tract disease, high, 23,300; low, 4,000; average, 0,000; above 10,000, 15 per cent.; above 15,000, 6 per cent. Dr. Deaver believed that iodophilia was of little value. It was only of value in the detection

of suspected deep abscesses when the leucocyte count had proved normal. In gall-bladder cases associated with jaundice he had found the time of coagulation had been delayed. Dr. Deaver believed that the greatest value of the differential leucocyte count was obtained by the general practitioner, if he had the requisite training for the work and the time; but he asked how many men were able in a suspected case to take the blood, go back to the office, spend twenty minutes on the white cells, stain the films, and count at least 500 leucocytes. This was practically impossible.

The Clinical Value of the Differential Blood Count in Operative Otology.—Dr. James F. McKernon asked if a differential blood count would help in doubtful cases to make a more accurate diagnosis. He thought it would, and this opinion was based upon the differential leucocyte count in 166 operative cases, 108 of which were adults and the remaining 58 being children ranging in age from six months to twelve years. In all of these the differential leucocyte count was taken as an aid in diagnosticating mastoid disease, and the sequelæ resulting from it. Of the 108 adult cases, a positive diagnosis of mastoid involvement was made in 84 without recourse to the blood count, which was made only for confirmatory evidence. Of this number of cases the lowest polymorphonuclear percentage was 73.2 per cent., the highest 97.6 per cent. In the 24 remaining cases many of the typical symptoms of the disease were absent, and it was here that the differential leucocyte count proved of the utmost value. Of these 24 18 did not present the usual clinical signs of mastoid disease, and it was only after a differential leucocyte count had been made that an operation was decided upon. Of these 18 cases the lowest polymorphonuclear percentage was 73.2 per cent., the highest 86.4 per cent., and all contained pus in the mastoid. The remaining six cases were complicated with a phlebitis of the sigmoid sinus, and in these cases the polynuclear percentage prior to operation was high, the highest being 96.6 per cent., and the lowest 86.8 per cent. Of the 58 cases in children a positive diagnosis of mastoid involvement was made in 47 prior to the differential count. The lowest polynuclear percentage was 68.6 per cent., the highest 82.8 per cent. Of the 11 remaining cases none exhibited the usual symptoms of the disease, and here again the differential leucocyte count proved of value in 8 cases. Of these 8 cases the lowest polynuclear percentage was 72.2 per cent., and the highest 83.4 per cent., and pus was found in abundance in the mastoid process. In the 3 remaining cases there was nothing to explain the high temperature, and marked prostration, except the presence of a discharge from the ear. The lowest polynuclear percentage was 42.4 per cent. and the highest 56.8 per cent., and from this the natural deduction would be absence of sepsis, but in relation to this low polynuclear percentage was a marked decrease in the number of white cells usually found. Upon operation an abundance of pus was found in each of these three cases. The conclusions he arrived at were that in septic cases the differential blood count was of practical value in enabling one to complete a diagnosis: in cases of sepsis, when the physical symptoms and signs are distinct and definite, it was then only confirmatory and gave an added link to complete the chain of evidence. A fact of importance brought out in this series of cases was that when cellular bone structures, like the mastoid, were involved in a septic inflammation, without involvement of the adjacent blood currents, one found that in the majority of the cases the differential count showed a relatively lower polynuclear percentage than when a septic process was present in the soft tissues of the body. This could be explained on the theory that an absorption of toxins was less rapid when such a process took place in a bone cavity. A point mentioned by Dr. Sondern, and corroborated by a study of the above cases, showed that when there was a pronounced leucocytosis and a pronounced polynuclear increase it was indicative of a severe infection with good systemic resistance, and that a pronounced polynuclear increase with little or no leucocytosis showed a severe grade of infection, with but little body resistance, and also that the increased polynuclear percentage, with stationary or decreasing leucocytosis, showed an increasing degree of infection, with decrease of body resistance.

The Value of Differential Leucocyte Counts in Gynecology.—Dr. Howard Canning Taylor read this paper, dividing it into the consideration of three sections, as follows: (1) Ectopic pregnancy. In this the blood count was that of hemorrhage from any cause. The amount of leucocytosis depended upon the amount and rapidity of the hemorrhage, reached its highest point within a few hours, and diminished rapidly during the following three or four days, reaching normal only after a number of days more. With a recent hemorrhage the high total count and high percentage of polynuclear cells, taken with an absence of temperature, were signs that rarely would point to any other condition. (2) New growths. If uncomplicated he had found no change in the leucocyte count. If the new growth, for instance, a fibroid tumor, became infected, or if there had been a recent degenerative change or a hemorrhage sufficiently extensive to produce a posthemorrhagic leucocytosis, one found change in the leucocyte count. With carcinoma, either of the cervi or fundus of the uterus, any leucocytosis that might be present was due to the complicating inflammation and not to the growth itself. (3) Inflammatory diseases. The most marked changes in the blood count were found in inflammatory diseases of the appendages. In an acute case both the total count and the polynuclear cells were increased in proportion to the severity of the disease, decreasing as the condition improved. If the infection was tubercular there was usually little or no change in the count. In gonorrheal infections the changes were less marked than in more severe forms of infection. He emphasized the fact that blood counts should be considered with the other symptoms, and to be of the greatest value there must be repeated counts. The negative condition of the blood that was found in uncomplicated new growths was not of the same value as the positive findings of the hemorrhage following ectopic pregnancy, or of the inflammatory diseases, yet it was of value in excluding other conditions that might be present as complications. In the inflammatory diseases the blood changes were more marked and more constant. There was, beyond doubt, a definite relation between the amount and the virulence of the infection and the blood changes.

Dr. Howard Lilienthal believed that in the matter of blood examinations there was other than the leucocyte count, and that something would have to be done to have more frequent examinations made by the chemist, and less by the microscope. Blood cultures were of enormous importance in prognosis in serious peripheral disease. In acute abdominal cases these examinations were not so important because the bacteria were stopped by the viscera, particularly the liver, and any secondary invasion of the general blood stream did not come until long after the primary invasion of the liver. Blood cultures were very important in prophylaxis. In the acute infectious surgical diseases Dr Lilienthal said he had come to the conclusion that in determining whether to operate or not the blood count could be entirely disregarded. In every case that he waited for the blood findings he said he was sorry; but he had never been sorry when he went ahead and did not wait for blood counts. He reported three interesting cases. The first was a gentleman fifty years old, sent by a colleague because of a thick induration of the face, and which eventually developed into a malignant carbuncle of the lip. There was considerable swelling and brawny infiltration. Incision was at once made. No pus was present. The blood count was practically normal. Another operation became necessary two days later, when he tied the facial to prevent invasion of the circulation by sepsis. A blood culture taken from a vein of the foot gave positive

results. No pus was present at any time. The number of leucocytes was normal, the polynuclears were low, and prognosis bad. There was no enlargement of the lymph nodes. Operation was again resorted to, and the patient died. The second case was a fat woman who was suddenly stricken with severe right-sided abdominal pain, vomiting, and with temperature of 103°. Twenty-four hours later she was admitted to the hospital with these symptoms and with an irreducible umbilical hernia. There was a question as to the existence of a strangulated hernia with gangrene or appendicitis. The leucocytes numbered 30,000, the polynuclears 90 per cent. A small incision over the appendix was made and revealed the fact that she was suffering from a twisted ovarian cyst. The cyst was removed and the patient did well. He expected to find a suppurative process, but there was no pus anywhere. The third case was a boy of seven years with typhoid fever, who had a sudden drop in the temperature, but no increase in the pulse rate, no prostration nor other signs except distention, the latter not being present when the drop in temperature occurred. The blood count was normal for typhoid, *i.e.* leucocytes 7,000, polynuclears 67 per cent. He decided to wait three hours in order to see whether the blood count would go up. At the end of that time there was more distention and an exploratory incision was then made. A large perforation was found, peritonitis developed, and the boy died. Waiting for the leucocytosis lost him two, three, or four hours.

Dr. Nathaniel B. Potter spoke of the difficulty of estimating the value of the differential count in children. Again in the City Hospital where they had so many chronic cases the differential count was very irregular, and they never had been able to follow any rule. In regard to the value of the hemoglobin estimation, he said he had found that even with a low percentage these patients stood operations fairly well; whereas, if there was a sudden drop in the hemoglobin percentage and a low count, they would not stand operations as well. The determination of the opsonic index was a very complicated problem, and he did not believe it would be of any practical value until the technique was simplified. It could be stated, though, that, in a large percentage of chronic localized staphylococcus infections, and in some cases of chronic localized tuberculous infections, raising the opsonic index by proper doses of dead cultures of the corresponding germ would improve the patients materially, if not cure them. He told of the observations made by himself and coworkers last summer in cases of appendicitis. He believed that the future for infections like chronic acne, or general furunculosis, carbuncles, sycosis, and in some of the other staphylococcic infections, was very bright for the use of this method of treatment. It was too soon to say what the future would be for tuberculosis. The great trouble at present was the difficulty encountered in making a uniform emulsion of the tubercle bacilli which would phagocyte with regularity. Dr. Trudeau's experiments with tuberculin led one to believe that if they could determine the tuberculoopsonic index they might eventually cure more cases which hitherto had been helpd but little.

Dr. George Sloan Dixon thought they all would agree with what had already been stated, that the examination of the blood was simply an aid in diagnosis. In diseases of the ear the leucocyte count was likely to be low because, the disease being in the bone, did not affect the circulation as though in the soft parts. He showed some charts which were based on some selected cases. There were 51 cases of purulent chronic otitis media, with or without complications, and 77 cases of acute purulent otitis, with or without complications. The blood counts were made only at or about the time operation was performed. In the acute cases the leucocytosis rose from 9,000 to 17,500 without complications; those that were complicated with mastoiditis ran a little higher. The polynuclear percentage in the acute purulent otitis media cases ran from 40 per cent. to as high as 81 per cent., and much the same curve was shown in the mastoiditis cases. The most important feature was that when the patient had a sudden rise in temperature with a leucocytosis running as high as 25,000 or over, whether a high polynuclear percentage or not, they were likely to find a pneumonia or meningitis present. If 20,000, it was noted that a meningitis would develop within twenty-four hours; if beyond 25,000, probably a deep pneumonia. In the chronic cases the curve was a trifle lower, and the same held good for pneumonia and meningitis. The highest percentage of polynuclears in meningitis noted was 97 per cent.

Dr. Max Einhorn said that twenty-two years ago he undertook to study the relation of the lymphocytes to the blood corpuscles and made differential counts in normal and diseased individuals. This claim was upheld by the presentation of some of his writings on the subject at that time.

Dr. Samuel Lloyd emphasized the necessity of a complete blood count, and that we should not depend upon a partial one. He believed, too, that there was something in the idea advanced lately regarding lymphocytosis in progressive septic diseases. One should not depend upon the percentage of polynuclears alone, but should take them down the scale, noting any increase in the other blood elements which might give an indication as to the progress of the disease. With regard to the hemoglobin percentage as an index for operative work, the rule of 30 per cent. he believed to be too high; he said he had operated successfully in cases where the percentage of hemoglobin was 20 per cent. Much was yet to be studied on the coagulability of the blood, and it was particularly of value in cases of long-standing jaundice where one anticipated a dangerous hemorrhage. Dr. Lloyd said he had had one case in which the coagulability was thirteen minutes. He referred to Dr. Crile's suggestion that where one got a reduced hemoglobin, or a preoperative anemia, or where other conditions were present which reduced the hemoglobin too low, direct transfusion of blood could be done and often with marked success.

SECTION ON MEDICINE.

Stated Meeting, Held December 18, 1906.

Dr. Warren Coleman, Chairman.

A Case of Aneurysm.—Dr. William B. Noyes reported this case at the request of Dr. Lewis and Dr. Keller of the Columbus Hospital. The previous history was practically negative except that the patient had syphilis fifteen years ago, and used alcohol in excess. Seven days prior to admission the patient suffered from cough and expectoration, the sputa being bloody. Physical examination showed the patient to be fairly well nourished. The apex beat was not localized by inspection, the greatest point of intensity being over the fourth costal cartilage, one inch to the right of the sternum. Area of impulse extended all over the chest wall. The first sound was diffused over the anterior chest of greatest intensity to the right of the sternum. The second sound was accentuated and the respiratory murmur was absent on the left side. The vocal resonance was decreased over that side and hyperresonant over the right chest. Examination of sputa was negative as to tubercle bacilli. The voice of the patient was noticeably hoarse. On November 26 a needle was introduced posteriorly and four ounces of fluid was aspirated; this had a specific gravity of 1.010, was alkaline in reaction, reddish in color, and coagulated, but not spontaneously. It contained large numbers of red blood-cells. Two days later laryngoscopical examination showed that the left vocal cord was paralyzed. At about this time tracheal tug was obvious. On November 29 a systolic murmur, low pitched with greatest intensity over the internal half of the clavicle, was noted. There was no temperature, and the patient was up and about the

ward. He expectorated bloody fluid and sometimes pure blood. He died suddenly December 12, 1906. At autopsy the right pleural cavity was found to be free of adhesions, but the left pleural cavity was obliterated by dense adhesions, laterally and posteriorly. The left lung was compressed and hard to identify, being replaced by a mass consisting of clots of blood, some recent, red, or black, some appearing of long duration. The heart was flabby, dilated, while the tricuspid and mitral valves were normal. The aorta showed very great atheromatous changes and was constricted above the semilunar valves. At the transverse arch of aorta and upper part of descending aorta was an aneurysmal sac the size of a cocoanut, and which had ruptured into the posterior mediastinum. The walls were thick, except over the rupture, which was very thin. The diagnosis was made of aneurysm even before the tracheal tugging was noted. The aspirating needle was thrust through the aneurysm. From the syphilitic history given the probabilities were that this was a syphilitic process and not due to ordinary atheromatous changes.

Dr. Charles H. Lewis said that the case was of interest from the presence, as well as the absence, of certain clinical signs and symptoms. In the first place, the complete flatness over the upper left side, due, as shown at the autopsy, to the entire absence of lung tissue; then the tracheal tugging was well brought out. These signs, together with the paralysis of the left vocal cord, and the strong aortic second sound, were the ones on which a diagnosis of aneurysm was based. There was no expansile or heaving pulsation over the flat area, no bruit was heard, and no difference in volume or time between the right and left pulse was detected, although carefully and repeatedly looked for. Dr. Lewis said that he had introduced a small exploring needle about one inch below the spine of the scapula and withdrew a hypodermic syringeful of what he then supposed to be serosanguinolent fluid. He thought this fluid was in the pleural cavity and secondary to the aneurysm. He directed the house surgeon to aspirate in the same place, which was done a few days later, and "the four ounces withdrawn" was reported by Dr. Noyes. Dr. Lewis had grave doubts as to whether the fluid came from the aneurysmal sac, which presumably would contain pure blood. One could, however, perforate such a sac with a small needle without the slightest harm. This he had done in other cases and he had withdrawn blood in order to differentiate aneurysm from solid tumors. In this case the rupture occurred at some distance from what was supposed to be the tract of the aspirating needle.

Dr. Noyes said that the left pleural cavity was almost completely obliterated with adhesions and the right pleural cavity was practically normal. The left lung was practically cornified from pressure from the aneurysm and from the clots. The aneurysm had been leaking before the final rupture if the old clots and the ragged state of the lining membrane of the aorta were any proof. How long this had been going on was hard to say. The patient seemed fairly well until the day he died. Histological examination of sections of the aorta had not yet been made, but on gross examination it seemed like a chronic inflammation, with a ragged, sloughy surface of a rather unusual pale-red color rather than the typical appearance of atheroma of the aorta. It seemed to him a chronic aortitis of a distinctly syphilitic nature.

Pathology and Symptomatology of Chronic Adhesive Pericarditis.—Dr. Montgomery Hunt Sicard read this paper. He said that among 2,000 autopsies at the Presbyterian Hospital there were 77 cases of fibrous pericarditis, or about 3½ per cent. of the post-mortem examination; 45 of these 77 were extensive, involving the greater part of the sac; 32 were slight; there was but one case of mediastinopericarditis. In 33 of these 77 there was existing endocarditis; in 5 gross myocardial changes occurred; in 15 there was marked sclerosis of the coronary arteries; in 4 severe aortic sclerosis; in 4 aneurysm, and in 33 chronic diffuse nephritis. Of these 77 cases 9 were tuberculous, 4 having pulmonary tuberculosis and 5 having general miliary tuberculosis. Among the 2,000 autopsies there were 329 cases of chronic endocarditis, so that chronic pericarditis formed about 5 per cent. of the cases of chronic valvular disease. At St. Mary's Free Hospital for Children, out of 97 autopsies there were 5 cases of adherent pericardium; there were also among this number 4 cases of pyopericardium with considerable thickening, but without actual adhesions. Symptomatically he divided the disease into a number of fairly well defined classes. (1) Cases that ran a latent course and were only discovered upon the autopsy table; (2) those cases in which one, during a routine examination, discovered a harsh systolic murmur over the pulmonary area, increased by pressure and by leaning forward, the pulmonic second sound being accentuated; (3) cases with circulatory embarrassment, palpitation, irregularity, and intermission of heart beats, sometimes precordial pain, with moderate general hypertrophy, and sometimes tenderness over the base of the heart. No murmur or friction sound was heard to account for the cardiac change and so only a tentative diagnosis was made from the absence of direct signs; (4) cases with adhesions between the outer surface of the pericardium and the neighboring structures; here there would be considerable enlargement of the heart with diffuse pulsation of the precordium and systolic retraction of the apex. The heart was pretty well fixed by adhesions; paradoxical pulse might be present; (5) severe cases of mediastinopericarditis resembling the last group except that the mediastinal inflammation was more widespread, with consequently more serious changes in the abdominal viscera. These patients suffered from cyanosis and dyspnea, and constantly recurring ascites. A curious appearance was the frosted or iced liver, "Zuckergussleber," a white, fibrous, thick mass of connective tissue coating the liver and leading to much irregularity and distortion. The picture in this last group of cases was enlargement of the liver and ascites, and it was difficult to differentiate it from cirrhosis of the liver. The chief factors of distinction were absence of the causes of cirrhosis, nondilatation of the superficial veins, absence of the common symptoms of liver obstruction as hematemesis, jaundice, hemorrhoids, diarrhea, or constipation, signs of chronic pericarditis. In mild cases patients died of intercurrent disease which had nothing to do with the pericarditis. In severe cases there was a gradual cardiac failure due to increasing dilatation. Sudden death might occur at any time from myocardial degeneration or coronary sclerosis.

Dr. C. N. B. Camac referred to the Broadbent sign, and said there were great variations in the signs of adherent pericarditis, much like the signs of endocarditis, and they depended upon how much of the pericardium was involved and also what part of it. As the pericardium was possibly attached to the deep cervical fascia and below to the lateral wing of the diaphragm, perhaps to the central tendon, he said it was a question whether they could get Broadbent's sign if the pericarditis involved that portion in contact with the diaphragm. He said he had in mind three cases, two of which came to autopsy. Broadbent's sign was present, but disappeared. This was a very important sign in making a differential diagnosis, especially in differentiating pericarditis from those painful affections at the base of the heart. Broadbent's sign with the pulse under the ensiform he believed to be pathognomonic of adherent pericardium. Another point was the bulging of the precordium; this was not necessarily a sign of enlargement of the heart, or enlarged and adherent heart. He did not know what statistics gave regarding ascites with adherent pericardium. In two cases reported by Osler there was a definite perihepatitis and a perisplenitis; in both cases during life the diagnosis was simply that of congestion of the liver. Much confusion existed regarding cardiac murmurs. In both of the cases mentioned there were no valve lesions at all, and yet there was a distinct diastolic and systolic murmur. The interpretation of murmurs in adherent pericarditis was extremely difficult as it was in endocarditis.

Dr. Theodore C. Janeway took exception to Dr. Sicard's

statement regarding the murmur over the pulmonary area which he said was intensified by leaning forward; it seemed to Dr. Janeway that this harsh pulmonary murmur was frequent in perfectly healthy men, and he had observed many such in West Point students, and among the most competent athletes in the class. Among these men there would even be noted a thrill when they leaned forward. In these cases the murmur would disappear on full inspiration.

Dr. Theo. B. Barringer said he had seen four cases of supposed adherent pericardium, three of which came to autopsy. In the first case there was no retraction of the precordium; only a rapid heart, congestion of the liver, some ascites, moderate cyanosis, and edema. The diagnosis was made of myocarditis. At autopsy adhesions of the pericardium were found. In this case there were no murmurs; the only physical signs were those showing insufficiency of the right ventricle. In the second case there was a systolic retraction of the precordium, Broadbent's sign, and disappearance of the apex beat. At autopsy the external layer of the pericardium was found to be adherent to the pleura and liver. In the third case there was systolic retraction of the precordium, Broadbent's sign, and a loud systolic murmur. At autopsy there was found a stenosis of the pulmonary valve, an hypertrophied right heart, but no adherent pericardium. The last case did not come to autopsy, but the boy, aged fifteen years, had all the classical signs of adherent pericardium. He thought that those cases where the internal and external layers of the pericardium grow together were the easiest to diagnose.

Dr. Sicard said that at Cornell University during eighteen months he had a number of cases from which he drew his conclusions. Murmurs were present all the time and were exceedingly harsh and grating. One should bear in mind the chances of congenital heart lesions; these would frequently be found in a routine examination, and would not cause any trouble during life.

Specimen of Chronic Bacterial Endocarditis, with Remarks.—Dr. E. Libman believed in calling all endocarditis cases acute, subacute, or chronic, according to the duration. If bacteria were found in the blood one could add the name of the infecting organisms. The cases of chronic and subacute bacterial endocarditis have been called ulcerative endocarditis, malignant endocarditis, etc., but such terms had not been found satisfactory. Among the cases of subacute and chronic endocarditis in which the heart valves were attacked by bacteria, one of two types of organisms was usually found, either a streptococcus which grew poorly or an organism which looked like the pneumococcus, but which had no capsule and which otherwise could be differentiated. These organisms had not been isolated. Dr. Libman reported as an example the case of a woman twenty-seven years old whom he saw June 11, 1906. She had had rheumatic attacks in the joints of her lower extremities for six weeks and had been bedridden three times. She never had tonsillitis. One year before admission to the hospital she had dyspnea and cardiac palpitation. She had pains in different parts of the body, but particularly in the joints of the lower extremities. She coughed and sweat at night. When examined on admission there were petechial spots on the abdomen and the dorsum of both hands. There were evidences of enlargement of the right heart. At the apex there was heard the snap of a mitral stenosis. A presystolic murmur could not then be heard. The liver was enlarged, but the spleen was not palpable. There were thrombosed veins in the leg and a periphlebitis. During her stay in the hospital the temperature was exceedingly irregular. Sometimes it was 101°, and again it would be 103° or 104°. On June 16 pain in the region of the spleen was noted, and this organ could be felt below the free border of the ribs. On June 19 pain in the thyroid cartilege was complained of. Examination of the blood was interesting. There was no increase in the leucocytes; these numbered about 8,400, sometimes as low as 5,600. The polymorphonuclears ran from 72 per cent. to 80 per cent. The hemoglobin was 80 per cent. and diminished to 45 per cent. There developed tenderness over the sternum and over the tibiæ. June 30 she complained of pain in the right lumbar region. The kidney was found to be distinctly enlarged, tender, and red blood-cells were found in the urine, probably from an infarct of the kidney. July 18 no changes were found in the retina. August 28 the right knee joint became swollen, reddened, hot, and tender, persisted for several days, and then subsided. There were signs of infarct of the right lower lobe, increasing temperature, gradual failing, and she died September 20. The urine contained albumin, casts, and red blood cells. In each of the five blood-cultures taken an attenuated streptococcus was found. There were about twenty to the cubic centimeter of blood. The organism was not virulent, even for mice. At autopsy vegetations of a greenish color were found on the mitral valve; they extended into the auricle. Many infarcts were found in the lungs; the plugs were not as ordinarily found, but distinctly yellowish; some were rather soft, but there was no pus in the thrombi. There was an open foramen ovale. The infarcts were produced by transmission of these plugs from the mitral valve, through the open foramen ovale, and so to the lungs. At the hospital they had had fourteen or fifteen cases and all had come to post-mortem except two. In many of these cases there was a mitral stenosis, but a presystolic murmur could often not be heard, especially when there was fever. These cases should be carefully watched until the fever subsided. Petechiæ were found as a rule practically in all the cases, and they were very suggestive, especially when the diagnosis was not clear. Dr. Libman asked what the temperature was due to. His own impression was that the sharp rise was due to the discharge of emboli from the heart valve, and their lodgment somewhere. As a rule the leucocyte count was 13,000 or less. The progressive anemia was curious and not easily explained, but was probably due to hemolysis. In the case reported the bacteria lodged in the arteries of the spleen, causing an infarct; they grew along the vessels and extended to other vessels. In all these cases of endocarditis extending along weeks or months these two organisms would be found constantly; if one got one of these organisms from the blood he could be certain that he was dealing with an acute infection of the heart valve. With regard to the relation of these cases to rheumatism he could not claim that rheumatism ever had anything to do with them. All one could say was that there was a tendency to infect a valve that had previously been damaged by rheumatism.

Dr. Alfred Meyer said that in looking for confirmatory evidence, if petechiæ could not be found in the skin they might be found in the conjunctiva, and in quite a number of cases in the mouth. With regard to the treatment of this disease, he believed in the use of silver salts. In ulcerative endocarditis or bacterial endocarditis of chronic type he used an ointment of colloidal silver, applying half a dram twice a day, and rubbing in for twenty minutes in order to insure absorption. Whatever had appeared in the discussion in reference to pericardial adhesions and the bacterial type of infections of the pericardium only confirmed the suspicion that auscultatory evidences were very deceptive and treacherous to deal with. In order to show how deceptive auscultatory evidences were he cited a case seen at Mt. Sinai Hospital, one of chronic endocarditis, with typical evidences of aortic insufficiency, capillary pulse, diastolic murmur in the vessels of the neck, and murmur over the pulmonic area, etc. In a few days the murmur was not audible anywhere. Later it returned.

Dr. Warren Coleman said that he had been using the silver salts in the treatment of infectious diseases for some years, but instead of ointment he used it intravenously in 1 per cent. solution, and sometimes he gave it per rectum.

During the summer he treated a case of infective endocarditis where several blood cultures failed to give results. He used silver twice a day per rectum, giving two or three grains, and the patient got well. He was not willing to draw any conclusions from this case, however.

Dr. Leonard Weber said he used ointment of silver in 40 per cent. or 50 per cent. strength. In two cases of severe puerperal septicemia, as acute as he had ever seen, one-half dram every three hours was rubbed in night and day. One of these women had a temperature of 100° and over. These cases recovered. Three years ago he saw a case that became acutely septic, a case of typhoid fever, and the results from this ointment were equally satisfactory. In other cases he had had good success with the ointment. But in a case of sepsis during the course of an attack of erysipelas involving the head, neck, and face it failed to show any influence whatever.

Dr. E. Libman closed the discussion.

The Prognosis of Cases of Transient Spontaneous Glycosuria and the Relation Between This Form and Alimentary Glycosuria.—Dr. Theo. B. Barringer, Jr., and Dr. Joseph C. Roper presented this communication, which was read by Dr. Barringer. They gave the following summary: (1) At the end of five years 20 per cent. of a group of twenty cases of spontaneous glycosuria had become diabetic, 15 per cent. had become suspicious cases, and 10 per cent. somewhat suspicious; 55 per cent. had remained free from diabetes. (2) Eight out of eleven cases of spontaneous glycosuria, in which sugar recurred, became diabetic or probably diabetic. (3) The alimentary glycosuria arising from glucose or cane sugar, provided the test was properly conducted and repeated at intervals, afforded a valuable aid to prognosis in cases of spontaneous glycosuria. A positive test was of much more value than a negative test. (4) Alimentary glycosuria following the ingestion of sugar was essentially diabetic in nature. They found that at the end of five years but 45 per cent. at the most of their cases had become diabetic. If it was possible, as they believed, to detect these cases at a relatively early date it would not seem necessary to maintain a permanently restricted diet in *all* cases. If a small quantity of sugar was found in a patient's urine, and there was no history of overindulgence in sweets, he should be placed on a restricted diet and the reaction to the glucose test should be frequently ascertained during the next six months. If the reaction were positive the restricted diet should be continued, even though the spontaneous glycosuria had not recurred. If the reactions were negative and sugar did not reappear a restricted diet would seem superfluous. The conflicting opinions as to the essential nature and diagnostic worth of alimentary glycosuria might be harmonized by more observation of the course of cases of spontaneous glycosuria and by the frequent determination of their reaction to the glucose test.

Dr. Theodore C. Janeway said that the paper showed the type of work which was of real value on a subject about which there was too much speculation. He reported one patient whom he saw in 1900 who had a transient glycosuria with catarrhal jaundice; after lasting two weeks it cleared up. This was followed by a diminution in sugar tolerance. After his jaundice the patient went South, but took along his test solution. While there he ate syrups, etc., but without any reduction of the Fehling's solution. For four years he never had sugar in his urine. He then developed a severe attack of pyonephritis with a reappearance of sugar in his urine, and since then he had been mildly diabetic with a slight tendency to loss of tolerance. He was never able to take bread, but could take an equivalent of eight ounces of bread. The possibility must be borne in mind that cases of spontaneous glycosuria might develop diabetes under certain circumstances, and it was incumbent upon them to pay attention to transient glycosuria and keep such patients under observation for a certain time. Dr. Janeway also called attention to the necessity of following children of diabetics and testing their glucose tolerance.

Dr. Theodore Stewart Hart said that the results obtained were particularly interesting because they were able to get results on patients under observation fifteen years. In studying the cases one must divide and classify the cases of diabetes and glycosuria. Testing with carbohydrates was interesting, especially in cases of glycosuria due to, or coincident with, liver lesions.

Dr. John J. Morrissey said that from the standpoint of a medical examiner for life insurance it should be borne in mind that glycosuria as a basis for statistical calculation, and glycosuria as a fundamental principle upon which to make a diagnosis of diabetes, were different. Glycosuria in itself was the red flag of danger; but he would not say that the majority of cases of glycosuria terminated in diabetes. One could get the slightest trace of sugar one or two hours after a hearty meal. Too much stress should not be placed on statistics.

Dr. J. Finley Bell said that in 1901 he had a case that was supposed to have transient glycosuria. Examination of the urine on a number of occasions was made and copper was reduced each time. Being desirous of having a quantitative analysis made, the fermentative test was applied with negative results. The urine would reduce Fehling's solution, but not bismuth. A few years ago he examined a patient for life insurance. The home office told him the patient had been examined by another examiner who found sugar in large quantities. He made further examinations, two being positive and one negative. He then learned that the individual had brought the urine in a bottle which had in it a piece of cork and syrup of figs.

Dr. Theo. B. Barringer, Jr., closed the discussion. He said that as the cases numbered only twenty only tentative deductions could be made.

Election of Officers.—*Chairman*, Dr. Warren Coleman; *Secretary*, Dr. H. S. Carter.

Chicago Medical Society.

At a regular meeting, held December 12, 1906, there was a symposium on "Exophthalmic Goiter." Dr. Frank Billings described the chief symptoms of exophthalmic goiter. He said he had records of sixty-one patients who had come under his direct personal care; eight were males and fifty-three females. Of the males two were acute, and the rest under chronic forms of the disease. One male had suffered from goiter for several years preceding the onset of the symptoms, and with seven the goiter developed as an incident of Graves' disease. Of the females thirty-two had no goiter preceding the development of the disease, while twenty had suffered from goiter for from three to twenty years. Ten of the fifty-three females suffered from acute Graves' disease, and in all of these acute cases the goiter was primary, that is, developed as a part of the disease. Thyroidectin was used in twelve cases. The powder form of the serum was used in a dose of from fifteen to forty grains a day in divided doses, with varying results. In no instance had he secured the favorable results recorded by many other physicians. In two instances the symptoms were aggravated by the remedy. He had used the hydrobromate of quinine in eight cases. This drug had been given in from fifteen to thirty grains in divided doses in twenty-four hours. It had afforded a more uniform improvement in the symptoms due to vasomotor disturbances than any other drug. He had used the serum of thyroidectomized goats prepared under the direction of Moebius, in one male. This patient was put upon rest treatment in the hospital, and in addition to the full doses of the serum hydrobromate of quinine was given. The improvement was steady and continuous. He had not had experience with the use of specific serum prepared by Beebe of New York, and used by Rogers and Thompson in the treatment of thirty-nine or more cases. Three

of the patients included in the group were operated on, and of this number two made satisfactory recoveries and have remained well, while one died on the operating table. Dr. Dean D. Lewis discussed the pathology of exophthalmic goiter. Dr. R. B. Preble spoke of the cardiac symptons. Dr. L. Harrison Mettler suggested three principles that he believed would be found useful in distinguishing the presence of any of the said diseases in a patient who might at the same time have exophthalmic goiter. The first principle was to keep close to the narrow definition of Graves' disease as being represented in one or more only of the cardinal symptoms—tachycardia, struma, exophthalmos, no matter what the other neurasthenic, hysteroid or general nervous manifestations might be. Whether regarded as a mere syndrome, or as the essential expression of the disease, the famous triad in part or in whole must be the basis of diagnosis and nothing else. The second principle was that we should always endeavor to align the so-called secondary, nervous symptoms of exophthalmic goiter with any other corresponding symptoms present that belong to some other distinct, well-known trouble. The third principle was that all organic diseases and all symptoms that represented an organic lesion were complications rather than a mere part of the exophthalmic goiter. Cardiac valvular lesions, tabes dorsalis, ocular palsy, multiple neuritis, for example, were complications and should not be confused with the symptomatology of Graves' disease. Dr. Casey A. Wood discussed the ocular signs and symptoms. Dr. William E. Quine spoke on the medical treatment of exophthalmic goiter, and under this head discussed rest, diet, hydrotherapy, electricity, the Roentgen ray, organotherapy, serum therapy, medicinal therapy, and saline purgatives. Speaking of serum therapy the author said that two kinds of serum had been introduced—the serum of thyroidectomized animals, and the serum of animals treated with increasing doses of thyroid extract. Neither of these products had furnished important results. In medicinal therapy iodine usually proved hurtful. The same was true of digitalis and strychnine. Belladonna, given in the dose of ten minims of the tincture, three or four times a day, was recommended by more writers than any other medicine; but to the author it seemed inferior to some others. Forchheimer recommended the employment of hydrobromate of quinine, given in the dose of five grains every six hours, sometimes alone, and sometimes with the addition of one grain of ergotin to each dose. Salicylate of sodium, in the dose of ten grains, repeated every six or four hours, usually subdued symptoms for a short time, but its effects were not lasting. Of saline purgatives, the phosphate and the glycerophosphate of sodium were of undoubted value. In his own practice improvement of the patient under their use had rarely failed to occur. Aside from the saline purgatives, the medicines he had learned to rely on most were [illegible], digitalis, and the bromides. Pulverized strophanthus in the dose of one grain, codeine one-third to one-half grain, and bromide of sodium in the dose of twenty grains, each repeated at regular intervals three or four times in twenty-four hours, often proved very serviceable. It was usual for him to give two of these medicines, but not codeine and the bromides at the same time. He estimated that 60 or 70 per cent of the cases of exophthalmic goiter terminated in recovery under medical treatment. Some cases terminated spontaneously in this way, and he had witnessed three instances in which the occurrence of pregnancy contributed to the result. Charcot had recorded a similar observation. When medical treatment had been well sustained for six months without distinct benefit to the patient, or if the patient should get worse under the best medical treatment that could be devised, surgical treatment must be considered. Dr. Arthur Dean Bevan reviewed the development of the surgery of the thyroid gland, and reported the results obtained in seventeen cases of exophthalmic goiter in which he operated. Two of these patients died, one on the table, and the other shortly after operation. Dr. Carl Beck demonstrated two rare cases. The first was a case of "Suppurative Thrombophlebitis of the Iliac Vein," following a primary infection of a finger. There was general pyemia, with many localizations, but one very extensive thrombosis of the femoral and iliac veins. Dr. Beck incised the vein at different places subperitoneally, but did not reach pus. A few days later the pus appeared in the dressings. The patient recovered after many weeks of patient treatment. He summed up his remarks with the recommendation not to be too radical in dealing with primary infections. He noticed an intermittent edema preceding the permanent edema as a premonitory pathognomonic symptom of a deep thrombus. He recommended multiple incisions into deep thrombi. The second case was one of "Atresia of the Rectum" with a communicating canal into the bladder. The child was six years old, and cured after many operations. At first, the first day of life, a left colostomy was performed; six months later a resection of the coccyx with fastening of the intestine to the same, some months later rectoplasty and closure of vesicorectal communication, and three months ago closure of the colostomy.

Philadelphia Neurological Society.

At a stated meeting held December 21 Dr. G. E. Price demonstrated "A Case with Incomplete Brown-Séquard Paralysis Following a Knife-wound of the Neck." The patient was an Italian, who received an incised wound between the spines of the sixth and seventh cervical vertebrae, in the sequence of which he developed paralysis on one side of the body, with sensory changes on the opposite side. Marked improvement in the symptoms had taken place with the lapse of time. Dr. Augustus A. Eshner demonstrated "A Case of Hysteria Presenting Symptoms of Cerebellar Disease." The patient was a man forty-two years old, who presented difficulty in walking following emotional disturbances, with tinnitus and impairment of hearing and also impaired sensibility, but without motor weakness or changes in the eye-grounds. Recovery ensued under treatment with hypnotic suggestion. Dr. Eshner demonstrated also "A Case Presenting Symptoms of Cerebral Tumor, with Recovery." The patient was a huckster thirty years old, without venereal history, who suffered from vomiting, headache, vertigo, hemiparesis, with increased reflexes, but without changes in the eyegrounds. Improvement almost to the point of perfect recovery ensued after administration of active doses of iodide and mercurials. Dr. Joseph Sailer presented a communication entitled "Paralysis Agitans Developing in the Unparalyzed Side of a Hemiplegic." The patient was a woman who eight years previously had had an attack of apoplexy followed by right hemiplegia. Four years later symptoms of paralysis agitans began to make their appearance on the opposite side of the body. Various views were expounded on possible explanation of the association. Dr. W. W. Hawke demonstrated "A Case Showing Psychical Passive Apperception." The patient was a girl who had been employed at housework and in a mill, and who came to the city to do philanthropic work. She stated that she saw historic persons, whose images and surroundings she could call up at will. The case presented some of the features of dementia præcox, but it was decided that it was more likely one of dementia paranoides. Dr. David Riesman demonstrated "A Case of Probable Myasthenia Gravis in a Boy of Eight Years." The patient presented headache and causeless laughter, followed by diplopia, staggering gait, want of equilibration, obscurity of vision, ophthalmoplegia, unilateral palsy of the extremities, difficulty in swallowing, mumbling speech, nausea, vomiting, increased kneejerk, Babinski reflex, and congestion of the optic discs. Although the diagnosis of myasthenia gravis seemed probable at one time, especially in view of the marked improvement in the

symptoms that took place, it was decided, in view of the persistence of ocular palsy, left hemiplegia, with increased kneejerk on the affected side and Babinski phenomenon, that the condition was more likely superior polioencephalitis. Dr. T. H. Weisenburg demonstrated "A Case of Complete Ophthalmoplegia" in a girl about seventeen years old, in whom the condition had been present for several years. Dr. Weisenburg exhibited also a case of tabes dorsalis with optic atrophy, oculomotor palsy, and some want of action in the muscles of one side of the face and loss of taste on the anterior two-thirds of the same side of the tongue.

Books Received.

In order that the Medical Record *may be enabled to receive all new publications as promptly as sent out, and an acknowledgment and fair notice made of their receipt under this heading, it must be with the distinct understanding that its reviews are such that it cannot be considered under obligations to notice or review any publication received by it unless in the judgment of its editor it will be of interest to its readers.*

Transactions of the Clinical Society of London. Volume 39. 8vo, 272 pages, illustrated, muslin. Longmans, Green & Co., London.

Maladies des Organes Genitourinaires de l'Homme et de la Femme. Par R. Le Fur, Ancien Interne des Hôpitaux de Paris, A. Surdey, Médecin de l'Hôpitau Saint-Antoine. 8vo, 458 pages, illustrated, paper. Librairie J. B. Baillière et Fils, Paris.

Seventeenth Annual Report State Commission in Lunacy, State of New York. 8vo, 144 pages, muslin. Brandow Printing Company, Albany.

Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Erkrankungen des Urogenital-apparates. Redigiert von Geh. Med.-Rat Prof. Dr. M. Nitze in Berlin, Dr. S. Jacoby in Berlin, Nach Nitzes Tode unter Mitwirkung von Prof. Dr. A. Kollmann in Leipzig. Verlag Von S. Karger, Berlin, 1906. 4to, 342 pages, paper.

Gesammelte Beiträge auf dem Gebiete der Physiologie, Pathologie, und Therapie der Verdauung. Von Dr. I. Boas und seinen Schülern. Vol. I, 8vo, 788 pages; Vol. II, 8vo, 714 pages, illustrated, paper. Verlag Von S. Karger, Berlin, 1906.

Genitourinary Diseases and Syphilis. By Charles S. Hirsch, M.D. 8vo, 351 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.00.

Die Tuberkulose. Von Prof. Dr. G. Cornet. 8vo, 1,248 pages, illustrated, paper. Alfred Holder, Wien, 1907.

Die Tuberkulose. Von Prof. Dr. G. Cornet. 8vo, 548 pages, paper. Alfred Holder, Wien, 1907.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. II, 4to, 528 pages, illustrated, cloth and. William Green & Sons, London.

Transactions of the Association of American Physicians. Twenty-first session, held at Washington, D. C., May 15 and 16, 1006. Vol. XXI. 8vo, 863 pages, illustrated, muslin.

Parental Rights and Economic Wrongs. By Virginia M. Butterfield. 12mo., 92 pages, paper. Stockham Publishing Co., Chicago.

Baby Craft. By Alice B. Stockham, M.D., 12mo, 47 pages, paper. Stockham Publishing Co., Chicago.

Abdominal Pain, Its Causes, and Clinical Significance. By A. Ernest Maylard, M.D., B.S. (Lond.). 8vo, second edition revised, 301 pages, illustrated, muslin. J. & A. Churchill, London.

Dermatologische Vorträge für Praktiker Heft 1. Des Haarschwunds Ursachen und Behandlung. Von Dr. S. Jessner. Fünfte Auflage. 8vo, 52 pages, paper. A Stuber's Verlag (Curt Kabitzsch) Würzburg.

Dermatologische Vorträge für Praktiker Heft 17. Kosmetische Hautleiden. Von Dr. S. Jessner. 8vo, 124 pages, paper. A Stuber's Verlag (Curt Kabitzsch), Würzburg.

Traitement Rationnel du Mal de Pott. Par le Dr. F. Calot. 8vo, 115 pages, illustrated, paper. Octave Doin, Editeur, Paris.

Travaux de Chirurgie Anatomo-Clinique. Par Henri Hartmann. Chirurgie de l'Intestin. Georges Steinheil, Editeur, Paris, 1007.

The Diseases of the Nose, Throat, and Ear. By Charles Prevost Grayson, A. M., M.D. Second Edition, Revised and Enlarged. 8vo, 532 pages, illustrated, muslin. Lea Bros. & Co., New York.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending December 29, 1906, and January 5, 1907:

	Week of Dec. 29		Week of Jan. 5	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	311	183	342	180
Diphtheria	304	30	298	53
Measles	124	3	157	12
Scarlet Fever	205	6	225	14
Smallpox	1	—	5	—
Varicella	105	—	118	—
Typhoid Fever	37	12	40	9
Whooping Cough	71	11	66	13
Cerebrospinal Meningitis	5	0	9	14
Malarial Fever				
Totals	1163	254	1260	295

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 4, 1907.

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Dec. 15–22	1	..
Illinois, [illegible]	Dec. 22–27	1	Imported
[illegible]	Dec. 15–22	2	..
Indiana, [illegible]	Dec. 15–22	1	..
[illegible]	Dec. 16–30	1	1
[illegible]	Dec. 15–29	.	.
Kansas, Topeka	Dec. 15–22	1	.
Louisiana, [illegible]	Dec. 22–29	4	.
[illegible]	Dec. 22–29	2	.
Michigan, Detroit	Dec. 22–29	11	.
New York, [illegible]	Dec. 15–22	6	.
North Carolina, [illegible]	Dec. 15–29	2	.
Ohio, Toledo	Dec. 15–22	1	.
Washington, [illegible]	Dec. 15–22	4	.
Wisconsin, Appleton	Dec. 22–29	1	.
[illegible]	Dec. 15–22	1	.
YELLOW FEVER.			
Brazil, Rio de Janeiro	Nov. 18–25	2	
Canada, [illegible]	Dec. 16–22		Present
[illegible]	Dec. 16–22		Present
[illegible]	Dec. 16–22		Present
Chile, Coquimbo	Nov. 24–Dec. 1	23	1
[illegible]	Nov. 22		Present
Ecuador, Guayaquil	Nov. 1–30		30
France, Paris	Dec. 8–15	5	.
Great Britain, [illegible]	Dec. 9–15	5	Imported
[illegible]	Dec. 1–15	7	3
India, Calcutta	Nov. 10–24		3
Madras	Nov. 10–30		2
Persia, Hamadan	Oct. 1–31		Present
Kerman	Oct. 1–31		Present
Kerman [illegible]	Oct. 1–31		Present
Meshed	Oct. 1–31		Present
Shiraz	Oct. 1–31		Present
Teheran and Vicinity	Oct. 1–31		Present
Yezd	Oct. 1–31		Present
Russia, Moscow	Nov. 17–24		1
Odessa	Dec. 8–15	5	2
Spain, Barcelona	Dec. 10–20		5
TYPHUS FEVER.			
Brazil, Rio de Janeiro	Nov. 18–25	1	..
Cuba, Habana	Dec. 31	1	..
Ecuador, Guayaquil	Nov. 1–30		14
CHOLERA.			
India, Calcutta	Nov. 10–24		150
Madras	Nov. 10–30		5
PLAGUE.			
Brazil, Bahia	Nov. 10–17	4	1
Rio de Janeiro	Nov. 18–25	11	4
Sao Paulo	Nov. 11–18	..	1
Chile, Antofagasta	Nov. 22	2	..
Egypt, Alexandria	Nov. 17	6	2
Garbieh	Nov. 17	2	1
Guerga	Nov. 22–29	25	11
Keneh	Nov. 29	11	7
Menenfish	Nov. 30	1	1
India, General	Nov. 3–17	12,750	9,481
Bombay	Nov. 13–27	..	27
Calcutta	Nov. 10–24	..	53
Peru, Catacaos	Oct. 13	3	..
Lima	Oct. 19	2	..
Mollendo	Oct. 10	1	..
Trujillo	Oct. 10	0	..

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Original Articles.

THE DIAGNOSIS AND SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER AND THEIR COMPLICATIONS.*

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The intent of the writer in this paper is to consider the diagnosis and surgical treatment of gastric and duodenal ulceration and their complications.

The description, merits, and technical details of the various operations that are performed for the relief of these conditions will be ignored as far as is possible.

It probably seems to many of you, and especially to those who have had least experience with ulceration of the stomach and duodenum, that the diagnosis of this malady is usually easy to make; and so it is in the cases that present all the classical symptoms, viz., epigastric pain radiating into the back, heartburn, hyperacidity, hematemesis, melena, and a typical Head zone. Such cases, however, are not the majority, and we must not expect that the recognition of this disease is invariably simple and readily made.

There are firstly a class of patients who never present any symptoms of gastric or duodenal ulcer until some life-threatening complication, *e.g.* a profuse hematemesis or a perforation of the ulcer into the peritoneal cavity arises. As a rule, in such cases the ulcer is not situated at either of the orifices of the stomach, nor on the lesser curvature near the pyloric end, for with ulcers at these sites there are more or less well pronounced symptoms occasioned by the passage of the food across the ulcerated area or by the contraction of the pyloric or cardiac muscles. In patients of this class the diagnosis of ulcer will not be made, and should complications arise, we must always be in doubt as to whether they are dependent upon a long standing latent ulcer.

In the next place there is a class of patients who manifest, as the only sign of the gastric or duodenal ulceration, an atrocious pain in the right hypochondriac or epigastric region. There is no heartburn, no vomiting, no hyperacidity, no Head zone. The pain is severe, and often enough it incapacitates the affected individuals from doing their usual work.

If the pain is in the right hypochondriac region, it may simulate biliary and kidney colic, and subacute or chronic gall-bladder and appendicular inflammation. With gallstone disease, however, there is apt to be a history of preceding attacks of biliary colic, some of which have been attended with jaundice, and after some of them stones may have been found in stools. With kidney colic there is likely to be hematuria, often only microscopic in character, crystals of uric acid, oxalate of lime, etc., may be present in the urine, and during the attack there are often marked intestinal and gastric disturbances, such as nausea, vomiting, and obstinate constipation. With subacute or chronic cholecystitis and appendicitis there is usually a history of one or more preceding attacks of fever, pain, gastric disturbances, and tenderness over the appendicular or gall-bladder region.

A carefully taken anamnesis, the employment of the *x*-ray, cystoscope, and ureteral catheter and a thorough urinary examination will usually enable us to differentiate ulcer cases from those of biliary or tenal lithiasis; but in a certain number of them the exact diagnosis can be made only by exploratory laparotomy. We should not forget, furthermore, that gastric ulcer is quite frequently combined with gallstone disease, and that the contraction of peripyloric adhesions which have originated from gall-bladder, inflammation may occasion a stenosis of the pylorus that resembles clinically, in every detail, the pyloric stenosis which follows the cicatrization of a pyloric ulcer.

Many of the patients of this class become very neurotic and hysterical on account of the pain, and the symptoms arising from this disturbance of the nervous system may be so prominent as to cause us to look upon it as the primary trouble and the gastric manifestations as secondary thereto. Thus only recently the writer was called upon to operate a patient with perforated ulcer of the stomach, who had been treated by an eminent specialist for neurasthenia and dyspepsia. So commonly is this error made, and so little do the patients benefit from the treatment they receive for the neurasthenia, that Dr. Wm. Mayo has been led to state "that if the patients with neurasthenia and intense epigastric, or hypochondriac pain are referred to the surgeon, the latter will be able to restore them to perfect health by an operation directed to the cure of their gastric malady.

With reference to the diagnosis of the complications of gastric and duodenal ulcers, this will be easy if there is a previous history of such a condition. Thus, in a patient who has presented the symptoms of gastric or duodenal ulcer, a sudden tearing pain in the epigastrium or right hypochondrium, followed by rigidity of this part of the abdomen wall, tenderness in these regions, and rise of pulse rate, are very significant of perforation. In the writer's experience of eight cases of this complication, shock, vomiting, rise of temperature, and concentric obliteration of liver and splenic dullness have not been constant manifestations. In duodenal perforations it is to be noted that the point of maximum abdominal tenderness is frequently in the appendicular region, owing to the gravitation of the duodenal contents along the outer side of the ascending colon into the right iliac fossa. Inasmuch as duodenal ulcers frequently run a latent course until perforation occurs, this site of maximum tenderness may lead to an erroneous diagnosis of appendicular perforation.

*Read before the Harlem Medical Society, April 3, 1906.

In cases of hemorrhage from gastric or duodenal ulceration a previous history of these conditions enables one readily to determine from whence the blood comes; but in the absence of such a history it may be impossible to determine the origin and causation of the bleeding.

The most difficult of all the complications to diagnosticate are those which result from ulcers that run a latent symptomatic course until their healing and cicatrization occasions a benign pyloric stenosis, or until adhesions that form around them occasion disturbances in the patency and motor function of the pylorus, stomach, bile passages, etc., or until they have become adherent to and eroded into neighboring organs, such as the pancreas, gall-bladder, etc. Only by excluding all other causes for the condition at hand can we arrive at a correct anatomical diagnosis. These cases, however, always call for explanatory laparotomy, and the incision will clear up any doubtful points.

There is ordinarily no difficulty in differentiating ulcer of the stomach from cancer thereof, and yet when the ulcer has very much thickened edges and occasions a palpable tumor in the epigastric region the differential diagnosis may be attended with considerable difficulty, for the gastric symptoms in both conditions have much similarity, and the changes in the chemical composition of the gastric juice are very inconstant. The difficulty is all the more enhanced by the fact that it is just these ulcers with thickened edges that undergo cancerous degeneration. The only safe plan of procedure in these cases is to explore by laparotomy every palpable tumor of the stomach, and that without too much delay.

These few remarks indicate the difficulties that sometimes attend the making of a diagnosis of gastric and duodenal ulcer. Let us now look to the treatment of these conditions, and here we encounter another stumbling block and a rock upon which the internists and surgeons seem to split.

Gastric and duodenal ulcers, in their uncomplicated and in many of their complicated phases, have long been considered as belonging to those diseases that come under the pale of internal and dietetic treatment, and the recent suggestion of surgeons and some internists that surgical measures be employed in some of these cases has been received in a manner which is indicative of doubt as to the propriety and efficacy thereof.

First of all let us consider the treatment of the uncomplicated open gastric and duodenal ulcer. Leube, than whom no one is more entitled to speak of the medical treatment of this malady, before the German Surgical Congress of 1897 reported his results in uncomplicated gastric ulcer.* He stated that in 493 cases 74 per cent. were completely cured, 21 per cent. were improved, 2.4 per cent. died, and about 2.6 per cent. were unimproved. The cases that he considered as improved were freed of their pain, but at once relapsed when they stopped treatment, went back to their work, and resumed their ordinary diet. This is about the result that most practitioners with whom the writer has spoken and whose publications he has consulted achieve.

Evidently with the 74 per cent. of cases that can be and are cured by medical and dietetic means, the surgeon has nothing to do. But what about the 26 per cent. of cases that cannot be and are not relieved by these measures? What is to be done with them? Are they to be told that they are beyond medical aid; that they are to resign themselves to their fate, and continue to suffer from their disease until relieved by a kind Providence, or are they to be advised to resort to other means of help?

It is this 26 per cent. of cases that internal measures do not cure that the surgeon asks you to send to him for operation. He does not advise you to employ surgical treatment in all your cases of uncomplicated, open ulcer of the stomach or duodenum; on the contrary, he counsels you to exhaust all the methods of dietetic and local treatment before you consider operative interference; but if all these fail to bring relief and cure, then he urges you not to temporize further; not to surrender these patients to the pains and dangers that are inherent in their disease; not to repeat and repeat your medical endeavors until the patient's strength is exhausted and his morale dissipated, but to employ operative measures, and he promises you to restore a large percentage of such patients to perfect health and comfort. In this statement lies the main indication for the surgical treatment of open, uncomplicated gastric and duodenal ulcer. It answers one of the questions put to the writer, at a previous meeting of this society, when he presented a case of gastric ulcer that had resisted all medical therapeusis and was finally cured by operation, viz., "what the indication was that led him to employ surgical treatment."

Once you recognize the necessity and the adequacy of surgical interference in some cases of gastric and duodenal ulcer, you will at once ask what are the risks and what are the late results of the operations performed for this condition. You have a right to know what percentage of patients die directly or indirectly from the operation; for if the mortality from surgical interference is higher than that from the disease itself, then we are not justified in advising its employment. The death rate from gastric ulcer is usually put down as about 13 per cent., 6-7 per cent. from perforation and 5-6 per cent. from hemorrhage. In Leube's series of cases the death rate while the patients were under his care was only 2.5 per cent., but this does not take into consideration the ultimate outcome of the 21 per cent. of cases that were not cured by the medical treatment which he instituted. The 13 per cent. of deaths evidently do not occur in those 74 per cent. of cases that are cured by internal and dietetic means, but is confined to the other 26 per cent. In other words, one-half of the patients that are not cured by the non-operative measures succumb sooner or later to their disease. Now, inasmuch as the surgeon asks you to call upon him only in those cases which have not yielded to the internal and dietetic treatment, his results must be better than 50 per cent. mortality if he is to expect the patient and general practitioner to listen to his plea for the employment of operative measures. It is hardly necessary for me to say that no modern surgeon has anything like such a mortality. The Mayos, in a very large number of cases, report an operative mortality of about 2 per cent.; the writer, in the last three years, has had 10 cases, all of which recovered, and other operators have about the same results. All cases considered, the operative mortality is about 2 per cent. to 5 per cent. Thus we see that if the patient is not cured of his ulcer by medical means he stands one chance out of two of dying from the disease, if nothing further is done, and one chance in 20 of succumbing to an operation that is undertaken for his possible cure. This brings us to the consideration of the second portion of this query, viz., what are the final results as to cure of this malady by operation. Von Eiselsberg of Vienna has very carefully traced all the

*By open uncomplicated gastric or duodenal ulcer is meant an unhealed ulcer. It does not imply a bleeding nor a ruptured ulcer, nor one attended with any complicating condition.

cases operated upon by him during the past ten years.

Of the 40 cases that recovered from operation 38 were discharged from the hospital free of all symptoms; 14 remained well and had no further gastric disturbances; 13 were unimproved; 4 could not be traced; 9 died since their discharge, 6 of them with gastric symptoms. It is to be noted that in this series of cases operations, such as pyloroplasty, pyloric divulsion, etc., were performed for the cure of the ulcer that are to-day no longer done, their inadequacy for effecting a cure having been established; and, further, that of the 13 cases reported as not improved, some could have been cured by secondary operation.

Of the writer's 10 cases, done in the last three years, 7 have remained entirely well, 1 developed pernicious anemia two years after operation, 1 had to be reoperated several months after for recurrent symptoms that did not yield to internal measures and which seemed to be rapidly sapping the patient's strength and vitality, and from last reports she was well, and a third had slight recurrent symptoms one year after operation that readily subsided under dietetic and local treatment. If you consider that these reports concern only those cases that have not been cured by internal treatment, *i.e.* the 26 per cent. of cases that Leube reports as not amenable to cure by medical means, you must confess that much good is accomplished by operation in these cases. Can there remain, then, any doubt as to the advisability of treating surgically those cases of gastric ulcer that are not cured by dietetic and local treatment, and can there be any further excuse for waiting in these cases until the patient's strength is exhausted and operative measures thereby rendered far more dangerous and serious?

The writer has thus far only considered the treatment of the uncomplicated cases of open gastric and duodenal ulcer; let us now look to the treatment of the complications of this malady.

The most frequent and important of these is stenosis of the pylorus, due either to the contraction of the cicatrices of healed pyloric ulcers or to the contraction of peripyloric adhesions that result from the peripyloritis that frequently attends this condition. Only recently it has been stated here that the pyloric stenosis arising from these causes can be, and is, best treated by dietary regulations and gastric lavage. The writer readily concedes that the moderate grades of stenosis, viz., those in which the narrowed condition of the pylorus is fully compensated for by hypertrophy of the muscular coat of the stomach and which are not attended with material stagnation of gastric contents, nor with a considerable grade of gastric dilatation, can be and are successfully treated by these therapeutic measures. But unfortunately all the cases do not belong in this category. In many of the severer ones the pyloric orifice is almost completely closed, the stomach wall is atonic, the cavity of the viscus is dilated, and there is more or less complete stagnation of food within it; nutrition is markedly interfered with because the chyme cannot enter into the intestine for elaboration and absorption, both of which functions, as you know, are very slightly performed in the stomach. If such patients are put on a liquid diet and daily gastric lavage their condition is made more comfortable; their gastric distress, vomiting, and autointoxication from the absorption of stagnant material in the stomach is greatly relieved; but not even the most ardent advocates of this method of treatment believe that the cicatrices or perigastric adhesions can be absorbed or removed in this way. And while we are relieving the distress, and vomiting and autointoxication, what is happening to the nutrition of the patient? Gastric lavage and liquid diet, which latter is for the most part removed again by the lavage, are not particularly nourishing, nor are they calculated to promote that sense of well being and comfort that are essential for mental and physical work.

These unfortunate individuals, and they are truly unfortunate and most miserable, lose flesh and strength under this daily regimen of fluids and gastric lavage, become neurotic, and at last cast aside the advice of their physicians and seek the surgeon who promises them relief, no matter what the danger thereof may be. But what are these awful dangers that prompt this fear of surgical measures of cure, and that permit us to let these patients sink into a deplorable, neurotic, miserable, poorly nourished condition. The mortality attending operation, done at an early period when the patient's strength and vitality are good, is in competent hands about 2-5 per cent. Surely this is not commensurate with the pain, distress, loss of flesh, and strength, general discomfort, and inability to do work that is the lot of those who are treated with liquid diet and gastric lavage, nor is it equal to the mortality that ultimately attends this condition if not relieved by surgical means. With operation the patient must face a definite risk of 2-5 per cent., but if he survives therefrom he has a rosy outlook for complete restoration to health and enjoyment of life. Of 34 patients of von Eiselsberg, 32 recovered and 2 died; 20 were permanently cured; 3 were not cured, though one of these remained well for two and one-half years; 2 died some time after the operation, and in one of them there were no gastric symptoms before death, and 9 could not be traced. Without operation the individual has to expect a slow undermining of his health, a gradual loss of flesh and strength, increasing disability, neurasthenia, and, eventually, exhaustion. Can there under these conditions, be any doubt which course you, as practitioners, will advise your patients to follow, or which plan of treatment your patient will select! The surgeon's aid to these patients is a God-send, which only they can appreciate and recognize.

Perforation and hemorrhage are the two most serious complications of gastric and duodenal ulceration, the statistics of Leube showing that about 12 per cent. of the fatal cases are due to these causes. At the present time there is no one who will question the advisability of immediate operation in the cases of acute, sudden perforation, for we have learned that spontaneous cure from adhesion of neighboring parts to the floor of the perforated ulcer rarely, if ever, occurs. On the other hand, the cases in which the ulcer slowly and gradually eats through the walls of the viscus and in which the floor of the ulcer becomes adherent to neighboring organs before actual perforation occurs, thereby preventing extravasation of gastric contents into the free peritoneal cavity, are not urgent ones for operation unless a local abscess at the site of the perforation or sloughing, or necrosis of the adherent organ, calls for immediate surgical interference. Such patients as these latter, however, are the very ones that need operation for the cure of the ulcer, and they should be referred to the surgeon as soon as the local evidences of inflammation have subsided.

Clear cut as is the indication for immediate operation in the cases of acute perforation, so doubtful and uncertain is it in the case of hemorrhage. The writer knows of several eminent practitioners who have had a large experience with gastric ulcers and

have never met with a fatal case of hemorrhage therefrom, though they admit that in several instances it seemed as if the affected patient would die. Probably many of you have had the same experience, and in consequence thereof feel disinclined to advise surgical interference in these cases. And yet fatal cases do occur, as many as 6 per cent. of the deaths in this malady being due to this cause. The writer has seen several cases of ulcer bleed to death without surgical aid. We must admit then the possibility of a fatal issue from this cause, and we must concern ourselves with the question, firstly, is anything to be done to avert it? and secondly, when is it best to do it?

The writer has heretofore been guided in making a decision for operation in the face of bleeding from gastric or duodenal ulcer that was not to be controlled by medical means by the rules that were formulated by Mikulicz and Leube, viz., that operation is indicated (1) in the presence of acute, profuse, uncontrollable, bleeding, which places the life of the patient in grave jeopardy; (2) in the presence of frequently repeated bleedings, even if they are not profuse, that undermine the patient's strength, and lead to a chronic anemia.

The writer has never had occasion to interfere surgically for frequently repeated small hemorrhages from gastric ulcer, but in the past few years he has had 6 cases of gastric or duodenal ulcers that were suddenly complicated with several times repeated profuse hemorrhages. In four of these cases gastroenterostomy was done, and in two the expectant plan of treatment was pursued. In two the operation was done as a *dernier resort*, in enfeebled and exsanguinated patients, after internal treatment had failed to check the bleeding; both patients died shortly after the operation. In two the operation was done while the patients were still in comparatively good condition. These two recovered. Of the two patients who were treated expectantly one recovered and one died; the former of these two had commenced to convalesce from a diffuse peritonitis to which a perforated duodenal ulcer had given rise, and our minds were at ease as to the ultimate outcome, when suddenly there were, in rapid succession, three enormous bloody (tarry) evacuations from the rectum. His pulse rate jumped from 92 to 148, became thin and compressible; his respirations were sighing; his color extremely pallid, and his heart sounds feeble. The hemoglobin of his blood was 19 per cent. The experience I had gained from the two other cases in which, in the face of such a desperate general condition, a gastroenterostomy had been established under cocaine anesthesia, led me to refrain from and advise against operation in this patient. This decision proved to be a wise one, for, under medical treatment, the bleeding did not recur, and the patient made an uninterrupted convalesence. The fatal case that was treated expectantly was a woman, several months pregnant, who had suffered from the symptoms of gastric ulcer prior to her marriage. There had been but little nausea and vomiting during the pregnancy. Several days prior to the time I first saw her with Dr. Libman, she commenced to vomit blood. This was repeated several times, and the family physician with whom Dr. Libman had seen the patient requested him to take her into the hospital. On her admission she vomited about 16 ounces of fresh blood. Her hemoglobin was about 40 per cent., her pulse rate about 120, and not of good quality. In spite of absolute rest to the stomach and the careful use of internal remedies, the hematemesis recurred, and surgical interference was advised, but rejected by the family. Thinking that perhaps the pregnancy excited the vomiting and hematamesis, Dr. Vineberg was asked to see the patient; his advice to terminate the pregnancy was followed, but in spite of this and all other means the bleeding continued and caused the death of the patient.

Of the operated cases only in one was an attempt made to locate the bleeding vessel and directly control it.

When the stomach was opened the bleeding had ceased; the ulcer was readily located; it was on the posterior wall immediately over the celiac axis, Its base was cauterized with the Pacquelin, and then an anterior gastroenterostomy was established. In this patient the search for the ulcer somewhat prolonged the operation, which was done under cocaine anesthesia. In the other three cases no attempt was made to find the bleeding vessel; the writer contented himself with rapidly establishing a posterior gastroenterostomy. In none of the four cases that were operated upon was there any evidence of further bleeding.

The method in which a gastroenterostomy checks the bleeding is not quite clear, but probably by putting the stomach at rest it permits the bleeding vessels to contract and retract within their sheath, and the clot which forms over them is not constantly displaced by the peristaltic movements of the viscus. We must not think, however, that gastroenterostomy succeeds in stopping the bleeding in all cases. There have been reported in the last few years about 6 cases of fatal bleeding from gastric ulcer for which a gastroenterostomy had been done several days prior to the onset of the bleeding. In these cases the ulcer was probably surrounded by much inflammatory thickening, which prevented the eroded vessel from contracting and retracting. In cases of ulcer of this kind, complicated by bleeding, it is better to excise the ulcer-bearing area than trust to gastroenterostomy to check the bleeding.

The good effect on checking the bleeding from the stomach, from causes other than ulcer, that is to be obtained by putting the stomach at rest by gastroenterostomy was seen in a case of the young girl with repeated and profuse hematemesis from cirrhosis of the liver. After the gastroenterostomy there was no further bleeding.

The number of cases with sudden, profuse bleeding from gastric and duodenal ulcers that the writer has had is still much too small to permit of his forming any decided rules for future guidance in these cases. A review of the cases, however, may afford a hint that may help in the successful management of patients whose lives have suddenly been placed in the gravest jeopardy by the occurrence of this complication. Of our six cases four were in most desperate condition as a result of the bleeding; one declined operation; one had had repeated hemorrhages (hematemesis and melena) for six days, and just before operation had a pulse of 156, soft and thready in character, and a hemoglobin percentage of 30; one had had repeated hemorrhages for 12 days; her hemoglobin was less than 25 per cent., her pulse was 140 to the minute, soft and scarcely perceptible, and her sensorium was clouded. In both of these cases the attending physicians had called upon the surgeons to stop the bleeding, only after all internal measures had failed to accomplish this, and as a *dernier resort* gastroenterostomy was done. Neither patient reacted from the laparotomy; death occurred in one case fourteen hours after the operation, and in the other about ten hours after. These two experiences would seem to show the futility of operating when the patients are in such

desperate condition. They are scarcely able to withstand the operative shock and rapidly succumb to it. and that whether a general anesthesia has been administered or not. When the patients are in such condition, it seems to the writer that it is better to continue with internal measures than to do any operation, no matter how simple it is nor how rapidly executed it may be. This view would seem to be borne out by our fourth case, in which the hemorrhage occurred on the tenth day after a successful operation for the closure of a perforated duodenal ulcer, and for which no operation was done.

The good effect of gastroenterostomy in instantly checking bleeding in two of the writer's cases shows what can be accomplished in these cases when the operation is done at a time when the patient is in fair condition. The hemoglobin in these cases was about 40-45 per cent., the pulse, though rapid, 110-120, was good in quality.

If the writer summed up the impression made upon him by the observation of our own cases he would say that operation is not advisable when the patient's general condition is bad, the hemoglobin very low, 19-20 per cent., and the pulse not very rapid. In such a condition the operative shock. no matter how slight it may be, whether or not it is combined with the added depressing and hemolytic influence of a general anesthetic, is sufficient to cause the death of the patient. It is far better, in such cases, to trust to internal remedies and complete rest, induced by morphine, to check the bleeding. When, however, the patient's general condition is still good, and the hemoglobin count is about 35-40 per cent., he would strongly advise immediate operation, either excision of the ulcer, if it has indurated edges, or gastroenterostomy. This will have a double effect; it will check the bleeding and so remove the immediate threatening complication to life, and it will further favor the removal or healing of the ulcer.

Acute dilatation of the stomach, secondary to pyloric stenosis from cicatrized pyloric ulcer, or contraction of peripyloric adhesions, is one of the rarer complications. The cases are still too few to permit us to state whether it is more advisable in these cases to resort to immediate gastroenterostomy, and thus drain the stomach, or to accomplish the latter by repeated gastric lavage. From the experience gained in two cases of acute dilatation of the stomach due to other causes, and treated by repeated gastric lavage, the writer thinks that this mode of procedure is the more advisable, at least in the acute stage. Of course, eventually a gastroenterostomy or pylorectomy would have to be done.

The writer hopes that in these brief remarks he has put before you the present status of the surgical treatment of gastric ulcer and its complications. The subject is a new one, bordering on the line of medicine and surgery, and only by the concerted efforts of the internist and surgeon can the full development thereof be achieved and the best results accomplished.

923 Madison Avenue

"RHEUMATISM" AND ITS TREATMENT.

By F. J. WALTER, M.D.,

KRAMER, IND.

We have made a poor diagnosis when we pronounce a case of rheumatism. The term directs us to no pathological condition, though, like some other terms in our vocabulary, it serves to satisfy the patient, while confusing the mind of the physician. Why should we not be more definite and apply the exact meaning to the condition as: arthritis, synovitis, neuritis, and autointoxication with muscular pain? This covers most of so-called "rheumatism." "Autointoxication with muscular pain" is most confusing, but in reality is due to the absorption of the products of indigestion, from our habits of living, no doubt. Note how nearly 99 per cent. are constipated or have abundant evidence in the urine of some absorption of toxic products. Here we may have the lithemic condition (if one will call it such), acute conditions coming at once to our notice from the lowered resistance after cold or exposure.

In arthritis we have an infection made to flourish by the above condition. Fertile soil we say. While we do not know the definite infection in arthritis or polyarthritis in every case, often it is a mixed infection and never can be clearly isolated. The gonorrheal and tuberculous joints give us a definite picture. We put them off by themselves as understood; this is not right, for the other forms of arthritis have many more characteristics than are shown on a superficial survey. The majority of patients with arthritis have a history of some infection, and many old persons give us the history of grip, which is an infectious catarrhal fever. Then we have tonsillitis, pneumonia, typhoid fever, and this class of infections. Some avenue of entrance can usually be discovered, if only the cavity of a tooth. We know we can have pneumonia of a joint and not have it in the lungs. In other words, the pneumococcus may go to a joint and escape the lungs entirely. We call this "acute rheumatic fever" or "acute articular rheumatism," while in reality these terms apply to acute polyarthritis, though all cases of polyarthritis are not produced by the diplococcus of pneumonia. Also we have our typhoid, gonorrheal, tuberculous, pneumonic, and postgrippal forms of arthritis. Arthritis deformans is an infection (progressive in those of low resistance) and we do not know just what germ causes it; perhaps not always the same bacterium; but with it we have a trophic disturbance of the spinal centers, bilateral. There is every evidence of nutritional change in the muscles, joints, and nerves. These cases are years coming on; at times with long history of indigestion and urine loaded with urates, uric acid, and oxalates, and other evidence of incomplete digestion, such as flatulent dyspepsia, anemia, and weakness. Now, we must associate in our minds infection, inflammation, and poor nutrition with feeble powers of absorption and what is absorbed of poor quality; then we have an intelligent idea of arthritis deformans. We may have tabetic and hysterical joints. Is it not better to distinguish between all forms of arthritis and classify them than simply to diagnose "articular rheumatism"?

Of neuritis we have several forms: traumatic, infectious, toxic, inflammatory (without a definite infection known), infiltrations, reflex, and from pressure. Of the toxic forms of neuritis we have those of lead, arsenic, alcohol, and autointoxication, all affecting the nerve trunk, sheath, or the periphery; the sciatic nerve, or any other, may be the one chosen with a variety of sharp, lancinating, or burning pains. What is the use of adding "rheumatic" to the already better diagnosis of sciatic neuritis, peripheral neuritis, or neuritis of the anterior crural nerve? To be sure, we have muscle contraction from muscle irritation. Look out for neuritis in the diagnosis of intercostal neuralgia, and other local persistent neuralgic conditions, and look out for tabes dorsalis in the diagnosis of neuritis of the legs.

In the muscles we have nerves. It may be a neuritis of some finer twigs causing the myalgia. Now, what shall we do with "muscular rheumatism"? In the muscles we have a large surface for circulation and absorption, and we have the absorption of the toxic products above alluded to—the products of indigestion; also sprains and trauma. It is just here that it is most difficult to apply the proper diagnosis, as we are so prone to say "muscular rheumatism," yet we can fathom the cause and apply a term meaning more than the term "rheumatism." Some say "give the salicylates, and if they relieve it is 'rheumatic.'" I believe that the salicylates act only on the pain as an anodyne. Many cases are apparently cured because the salicylates and salol are such good intestinal antiseptics and antacids. We can apply our electrical tests here and find some cases of neuritis. In these cases of autointoxication the system is highly acid. I find nearly every case turning litmus red in the mouth. The dentist will notice it in the tartar of the teeth before the definite pains come on. How this goes to prove saturation and absorption of the products of fermentation! In local conditions of the feet don't forget "flatfoot." With a stock of foot arches on hand, of every size, one can cure many cases of so-called "rheumatism" of the feet. From the practical experience of 3,500 cases a year I am learning that uric acid, as well as leukomains, purin bodies, oxalates, urates, cystin, phosophates, indican and decreased urea are symptoms of this condition and somewhat of a barometer of the case; uric acid is not the cause. With poor elimination these things accumulate and are influenced by diet. These products certainly are found most often in those of sluggish habits and sedentary lives. These products of decomposition of the food circulate in the blood and are irritants to cell life and intoxicate more or less the brain centers as well as act as irritants to the endothelium of the kidneys, producing "Bright's disease" and bladder irritation. As a guide to our treatment and diagnosis, it is well to keep in mind the amount of toxemia, the resistance of our patient, the presence or absence of infection, the degree of inflammation, the nutrition, the vitality, the social conditions, the character of the food, the amount of exercise the patient can and should take, and, what is very important, glandular action and elimination.

Proper food, intestinal antiseptics, tonics, antacids, and active elimination by every means of escape are very necessary. The skin is a larger organ than the liver, and elimination by its wonderful excretory glands is not to be overlooked. This is why hot baths and mud packs do so much for this class of cases. These people are, or have been, large eaters, fond of the good things of life, and have "the best in the land" on their tables, but they have been unable to take care of it: what is more, they do not know in time that they are not digesting and eliminating properly. They will remark that a selected diet is excluding just what they like, and yet this does not mean that we have to starve them. It is not easy to find what will produce the least evidence of autointoxication, though by patience and individualizing we can in some little time produce gratifying results in most obstinate cases. In gout one will find the patients "overloaders," and it is but another phase of this same condition with a lowered resistance and an acute infection developing that produces the acute attack.

Treatment.—Physicians differ greatly in dietetic matters. Many patients will be found on a starvation diet when they most need nourishing food. "Diet" does not mean starvation, but it does mean the selection of good food to suit the individual. With anything like an agreement by physicians as to the cause of these so-called "rheumatic" conditions, the chances for a common ground will be better. To individualize the diet we must exclude foods which in a given case cause fermentation, pain, distress, anorexia, gastric or intestinal distention, acidity, constipation, or myalgia as nearly as is possible; for example the starches and sweets ferment in those of sluggish motor power or having nervous dyspepsia and cause flatulency. Tomatoes and strawberries are frequently followed by a serious aggravation of the myalgia and the urine will be found loaded with oxalates. Pork and veal are both a great tax on all the parts concerned in digestion and take hours to be assimilated, and unless the motor power is extra fine they should not be given; but few can omit meat for a long time and not show the need of some strengthening food. Most persons can take mutton, chicken, and small amounts of bacon or beef. Some persons cannot take fried food at all. The nitrogen of meat is not so bad; it is the products of incomplete digestion of the food (purin bodies, xanthin bases, or leukomains) that are so toxic. Many cases of sluggish bowels are greatly helped by the cannon-ball massage of the abdomen and the use of dates, figs, or prunes daily. Acid conditions of the contents of the intestines sometimes keep up the constipation which exists in over half of these cases. Acids will increase the acidity as well as the fermentation. Lemons are the least objectionable, and with some improve the condition by being converted into an alkali.

Diet alone will not do everything, but every means in therapeutics must be used to bring about normal physiology in every disease process. It seems to me that we cannot too strongly urge patients to use every means and impress the use of cooperation and combined methods and let the patient not feel that diet, baths, massage, electricity, climate, or one or two means can bring about a cure. Great patience, combined with persistent methods and a clear insight into the cause, by physician and patient, are necessary to bring about the disappearance of symptom after symptom. Too much stress cannot be given our social conditions as a factor in the etiology; our methods in the preparation of foods; highly seasoned foods; food that needs but little mastication; the enormous appetites of so-called "rheumatics"; in general, how our farmers, during the winter (their season of inactivity), keep their tables loaded most bountifully, and how, in spite of indigestion, people are inclined to "overload" in eating.

Combined with diet we use baths of various kinds, drugs, exercise or rest, electricity and light, climate, massage, vibration, topical irritants or anodynes, proper clothing, operative measures, water drinking, proper surroundings, heat and cold, besides all the attention we can give to the nervous system, going back of all this to every avenue of possible infection. I am satisfied that some infection may come through the glandular tissue (similar to tonsil tissue) of the appendix vermiformis, through the mucous membranes of the head and throat, through the tonsils, teeth, ulcerations, any suppurating focus, and after any infectious disease. Before taking this systematically I wish to say that at "watering resorts" one sees a large class of patients who are "last resorters"; people who have tried everything ever suggested or thought of at home, and usually none of them long enough to do any good, and often the very wrong thing. If we poor doctors had the

chance of our prescriptions being renewed even as often as the six bottles of patent medicine for five dollars, our well-regulated prescriptions would have a chance to assist a great deal more than they do. It is seldom that we hear of a chronic case taking more than an eight ounce prescription. That tried, many times they feel in their own minds they have been to the end of the resources of their doctor. It is a good plan to follow, in taking a case from another physician, to try some form of relief other than the salicylates, if he has been unsuccessful, and you would be successful, for the chances are that he has given the salicylates. I try to keep my patients busy with a lot of things and never discourage the use of any harmless method or topical application. It is not "having faith" in a physician that is necessary to bring about good results, as we so often hear; it is the cooperation that faith brings which produces the results.

Baths do their part by elimination, equalizing the circulation, relaxation or stimulation as desired, and at resorts in placing the patient where he will make a business of getting well. The best results come from long baths at an even temperature. Too hot baths cause a marked aggravation by distributing through an excited circulation these xanthin and other toxins; extra hot baths cause fainting and general aggravation, at times driving the patient to bed. All this can be avoided by more, longer, and cooler baths. Patients will want the temperature warmer than is best for them, in the hope of hastening matters. A fever of 102° is a contraindication for a very hot bath, and many times it is best to omit the warm bath for a day when the fever is high, depending upon other measures for a few hours. Shifting pains and increased swelling under bath treatment are looked upon with favor. Localized, persistent inflammation is more stubborn and slower. Any compensated heart can stand baths if due consideration is used. The head should be elevated and the bath cooled down somewhat quickly and of short duration. Baths are indicated in all cases of autointoxication unless there is too much prostration or high blood pressure with arteriosclerosis. In such doubtful cases it has been my habit to satisfy myself as to the amount of pressure to use Stanton's blood-pressure indicator. Excluding these cases and the dilated hearts, the baths cannot be other than a sheet anchor in the treatment of the so-called "rheumatic" conditions. My greatest experience has been with the mud baths, concerning which, to quote a noted author, "a great feature which commends itself is the evenness of the temperature and absence of chill." With a water and mud bath side by side the patient who is suffering a great deal of pain will totally ignore the water bath and express great gratification and satisfaction of relief from the mud. It is most important that the use of the baths should be associated with the drinking of quantities of pure alkaline water; during the baths three or four glasses of hot water should be taken slowly. This promotes perspiration and neutralizes acidity of all the secretions. Too much water must not be taken just before the meal time or for two hours after; then never more than two glasses (slowly) at a time, avoiding all danger of dilatation of the stomach. From eight to twenty glasses can in this way be taken in a day. It is best not to drink large quantities before retiring, as it excites the kidneys unduly and does not give them or the patient the nightly rest. Fifteen or twenty glasses a day for any length of time is too much of a tax on the endothelium of the kidneys, unless assisted by baths. When the days are warm and dry greater quantities can be eliminated through the lungs and skin by evaporation. Less should be drunk on damp days, less should be taken in cases of organic heart disease, high blood pressure, and splanchnoptosis. Large quantities increase the production of fat, and many fat people are aware of this and do not drink water enough for good health. Most persons do not drink water enough, and the need of doing so simple a thing is hard to impress upon them. In cities it is practicable to prescribe distilled water, with certain salts and drugs added at times, to be mentioned later. Most persons do not know that a healthy and active condition of the skin will increase their resistance to many infectious diseases. This wonderful organ expels what is left behind by incomplete action of the kidneys, liver, bowels, and lymphatics. Too much diuretic action by any water will cause constipation. Niter cannot be given for any great length of time without carrying off enough fluid by the kidneys to react on the bowels and cause dryness of the contents and a constipation similar to that which is associated with diabetic conditions. A diuretic and a cathartic never act well at the same time; one should never give them the same day and expect full action of the diuretic. Large quantities of any pure water will act as a diuretic, and this is especially true of an alkaline water, so you must watch the constipation so apt to follow. This constipation, however, does not seem to follow in all cases.

Exercise is a great and important problem in stout, so-called "rheumatics" with sore, inflamed joints—especially heavy persons with arthritis of the knees or ankles. We cannot conscientiously advise these persons to walk and irritate an already inflamed surface, nor can we advise active massage in such cases. Inflammation demands rest. Therefore I say to such individuals: "Be out in the air all you can, drive when the weather permits, bathe all you can, watch your diet, take such remedies as are prescribed for you, and as soon as the evidence of inflammation is gone, and the soreness and swelling disappear, begin to walk and exercise, then take your massage under the direction of a competent physician." Muscular stiffness and pain that is not a neuritis demand exercise, bending, kneading, percussion, and friction, but inflammation never calls for such methods. The best way to limit an infection is to put it up in a splint, and this applies to arthritis. Exercise in autointoxication to assist glandular inactivity is most important; it would be advised in arthritis and neuritis if it were not for the local conditions. When a patient comes to you with swelling and every evidence of inflammation, put him on crutches or in a wheel chair. This will be seriously objected to, though in a few days the results will be evident, and the patient will thank you for one of the first positive indications of cure. Systematic exercise may come later, the use of dumbbells, clubs, walks, and massage will be indicated as soon as this stage is passed. Then start your movements up to the point of slight soreness again. In this way you will prevent adhesions; or if some have formed, break them up before they have become organized. Some old and neglected plastic joints can be broken down and worked every day; when once you start, never stop until you get as near perfect motion as your judgment tells you is possible. It is best to be firm and discourage exercise or motion in neuritis of the sciatic nerve and to tell such patients to lie around, go to bed a part of the time (as it is hard to sit) keep pressure off the nerve, avoid walking, or go on crutches when they do walk. Massage or vibration is not indicated

manipulation until all acute inflammation, pain, and soreness are gone. Complications and cramps will in this way be avoided.

Having spoken of baths, waters, exercise, and rest, let us speak of the use of electricity. The results in a few cases cannot be taken into account, for under no treatment at all disease often makes sudden and unmistakable changes for the better. In general the faradic current, while a stimulant, will be found to aggravate most of these muscular, nervous, and joint lesions. The immediate results often are palliative, but improvement is seldom lasting. It is difficult to select cases which are curable by electricity, as a remedy in these complications requires some positive indications, and the action of electricity is too uncertain. Faradic currents are certainly disappointing in their results. The galvanic current, however, I consider one of the most useful means we have to soften and absorb deposits and infiltrations, paying attention to the action of each pole. The high-frequency, high-tension, static current is a good sedative and I have faith in it in some cases. The white-light or high-power incandescent ray has done some wonderful things for me in the relief of pain, and as an anodyne in some local inflamed conditions. I can report no good results by the use of the *x*-ray except as a means of diagnosis. Cataphoresis with cocaine and opium is a means of relief for acute painful conditions. The static spark irritates most cases. The breeze is with the proper pole somewhat of a sedative.

We must recognize massage as one of the best treatments for the so-called "rheumatic" conditions that we possess when followed out properly, at the proper time. Massage, or systematic manipulation of the tissues of the body, is one of the oldest means employed in the treatment of disease, dating back as far as 3,000 years B.C., being used in the Orient at that time. It has been used, associated with more or less medical treatment, by all nations; but in the present age, from some unknown cause, it has been singled out as a science of its own and is applied to the treatment of all disease, regardless of the science of medicine. It lays special stress on the treatment of this class of troubles, but can no more stand alone here than electricity. Medical men must be broad enough to clothe their minds with more than one idea in the practice of this interesting profession. This is why radical sectarian physicians are distinctly narrow. First the system must be rid of the toxins and active inflammation before one can think of manipulation, else we elevate the temperature and increase the liability to organic heart trouble and other complications; if massage is employed too early the patient is left in a weakened condition and the liability to infection is greatly increased. Pain is always increased by the most scientific masseur in active inflammation, though it may "numb" the process for a few hours. In a localized inflammation of a joint, in the passive stage, where there is stiffness or ankylosis, massage of light, stimulating character should be used, great care being exercised not to increase the pain or set up additional inflammation, but some hyperemia (to such a degree as to arrest adhesions). One should have a trusted masseur to be certain of this. In chronic cases where there is ankylosis or adhesions about the joints, nerves, and muscles without appreciable soreness, massage is nearly always of benefit. It sets up light inflammation, which promotes absorption and permits motion, doing all those things hoped for without much aggravation. Active motion must be employed and continued, though the manipulations should be guided by the soreness produced. Following the above lines of manipulation, the gonorrheal joints will be found to be (in the subacute and chronic stages) the ideal subjects for massage. After the long relaxing bath will be the most favorable time for treatment. This should be followed by rest in bed for an hour or two. Cannon-ball, abdominal massage will, as mentioned before, be useful for constipation. A tuberculous joint must not be massaged.

Many cases of this form of autointoxication are better in a warm, slightly humid climate, because the skin is kept active and constant elimination is induced. The dry climates of Montana, North and South Dakota send us most of the so-called "rheumatics," the Gulf States comparatively few; the Southwest has less changeableness and is perhaps the best all-around climate we have in the United States for infections, and as a place to be out of doors and induce resistance. Too high an altitude should not be sought where the nervous system is in the least involved, as the integral parts of the nervous system must be complete or convalescence will be slow. These infections and "acid turns" will be found everywhere and a study of the social conditions must be kept in mind. Even the Southwest would not do if the particular section were subject to too much dust, because of continuous throat irritation and infection from the head or throat. California is said to have every climate of the three zones; a few desirable places can be found, but the cold nights and the dampness in certain seasons near the coast make it favorable for infections, and the "barometer acid" patient is likely to have considerable myalgia. The West Indies or Florida, down at least 300 miles south of Jacksonville, are among the best places to be found anywhere during the winter for old persons and patients with heart lesions, particularly those with bronchial affections and subjects inclined to pneumonia. The coast from New Orleans to Savannah is given as the region with the fewest kidney diseases of any section of the United States, due largely to the soft water and the constant excretive action of the skin. This is always favorable to so-called "rheumatics." In any climate the surroundings ought to be congenial; worry is most depressing and disastrous. The subjects of nervous cases in particular must be kept out of doors, and this is not practical in the North, which is a good reason for sending such persons as can afford it to the South; and I think it will be found (fortunately for them) that the most "nervous exhaustion" is present in the families of the well to do. The region west of the Cascades in Washington and Oregon, except in the very rainy season, is better than the region through Wyoming and Montana. Wind is the worst enemy of neuritis, and this includes sciatica. A study of the government reports regarding the averages for the year at all of the most important stations in the United States shows some interesting figures. If one studies the chart, which is a complete summary for the year 1902 of the velocity and direction of the wind, the number of clear, cloudy, and partly cloudy days, the average rainfall in inches, the extremes of temperature, the number of gales (storms in which the wind exceeded forty miles an hour), the average humidity, fog, and the barometric pressure, it will materially aid in the selection of a proper climate for anyone. It will take but a glance to note that Roseberg, Oregon, has the least wind of any point in the United States (for the year 1902), and the Pt. Reyes Light off California the most. Chicago and Buffalo, as well as our own section, are extremely windy when compared with other points.

A country with much wind is apt to have extremes of heat and cold, as is found along the Lakes. This is to be avoided, as it suddenly checks the perspiration. A section with a large number of cloudy days, much humidity, and a high barometer is better than one of sudden changes. The "Land of the Sky" in North Carolina is delightful throughout the year and beneficial where altitude does not disagree, except for a couple of months in the winter, when it is frequently rainy and chilly. These months can advantageously be spent in southern Florida. In the matter of clothing, wool is much better than linen, silk, or cotton, to be worn nine months in the year. The more changeable the climate the more need of wool. The section sending to us the greatest number of so-called "rheumatics" for treatment is the Northwest.

I now want to speak of the social conditions more in detail. Lack of the proper clothing when society calls for low-neck and short sleeves in many women, predisposed to neuritis or myalgia with autointoxica-

Chart of Selected Points of Observation in the U. S. Meteorological Summary for the Year 1906

Location	Altitude	Temp. Extremes	Rain Fall	Wind, Average Velocity	Prevailing Direction	Gales	Clear	Partly Cloudy	Cloudy	Rain	Fog	Barometer
Atlanta, Ga	1,174 ft.	98–15	43.96	12.2	N. W.	23	110	150	111	111	13	28.81 Y
Astoria, Ore	2 "	86–19	86.48	.....	S. W.	.....	86	97	182	207	10	29. Dec
Atlantic City, N. J.	52 "	94–12	50.58	9.3	N. W.	3	120	100	7	132	24	29. Year
Bismarck, N. D.	1,674 "	98–29	15.95	9.6	N. W.	12	195	71	99	74	1	28.119 "
Buffalo, N. Y.	767 "	85–3	32.	15.	W.	71	36	13	202	252	18	29.151 "
Cheyenne, Wyo.	6,088 "	94–27	10.50	10.3	N. W.	20	187	142	93	98	8	27.072 "
Chicago, Ill.	823 "	91–8	37.58	16.	N. E.	63	129	145	166	186	8	29.144 "
Denver, Colo.	5,291 "	100–20	13.35	7.9	N. W.	17	147	142	76	70	6	24.692 "
Duluth, Minn.	702 "	86–22	20.14	10.1	N. W.	11	91	147	127	134	10	29.288 "
El Paso, Tex.	3,762 "	105–24	10.15	10.8	W.	44	210	124	81	45	6	26.18 "
Galveston, Tex.	54 "	91–32	37.02	11.9	S. E.	7	159	124	82	61	25	29.94 "
Hatteras, N. C.	11 "	92–24	40.13	13.8	S. E.	25	101	121	143	150	11	29.994 "
Independence, Cal.	3,910 "	100–10	3.83	8.2	N. W.	12	217	114	34	52	8	25.943 "
Indianapolis, Ind.	822 "	93–5	37.10	10.2	S. W.	17	95	164	146	122	6	29.087 "
Jacksonville, Fla.	43 "	101–24	55.52	8.5	S. W.	6	135	144	81	127	12	29.149 "
Jupiter, Fla.	28 "	96–38	45.79	10.5	S. E.	4	125	202	38	113	1	29.96 "
Key West, Fla.	22 "	91–50	38.61	9.2	N. E.	0	167	159	48	80	1	29.987 "
Los Angeles, Cal.	338 "	94–32	13.12	4.6	W.	0	127	203	35	36	20	29.614 "
Memphis, Tenn.	597 "	104–2	34.58	9.6	N. W.	12	162	117	86	80	9	29.024 "
Minneapolis, Minn.	837 "	88–20	32.01	12.2	N. W.	19	99	138	158	122	4	.....
New York, N. Y.	314 "	91–8	47.07	14.8	N. W.	80	113	111	149	140	5	29.793 "
Phoenix, Ariz.	1,108 "	116–30	6.88	4.3	E.	0	288	92	4	35	1	28.527 "
Pt. Reyes Light, Cal.	490 "	78–36	23.18	22.4	Once 110 Mi. N.W.	107	152	57	156	87	119	29.74 "
Portland, Ore.	154 "	97–13	50.15	7.9	N. W.	8	92	87	187	188	10	29.85 "
Roseberg, Ore.	518 "	99–19	30.58	3.5	28 Max N.	0	1 calm, 100 clear	121	144	161	48	29.45 "
Salt Lake, Utah	4,360 "	98–4	11.41	6.1	S. E.	3	169	87	139	75	8	25.870 "
San Antonio, Tex.	701 "	103–26	24.70	8.	S. E.	6	143	142	15	73	18	29.543 "
San Diego, Cal.	87 "	81–36	11.49	5.8	N. W.	0	245	96	51	44	22	29.88 "
San Francisco, Cal.	155 "	83–38	19.18	10.3	W.	2	177	107	81	82	8	29.991 "
Santa Fe, N. M.	7,013 "	91–8	13.36	6.9	S. E.	1	245, 17 calm	97	75	78	.....	24.248 "
Seattle, Wash.	123 "	95–13	45.78	7.1	S. E.	3	87	178	144	186	17	29.884 "
Spokane, Wash.	1,929 "	94–12	19.23	5.9	S. W.	2	71	87	202	137	8	27.947 "
Tampa, Fla.	34 "	96–29	50.38	6.5	N. E.	4	111	160	56	164	7	29.922 "
Washington, D. C.	112 "	99–5	40.58	7.1	N. W.	2	144	132	89	121	12	29.75 "
Yuma, Ariz.	141 "	116–31	1.46	6.5	W.	4	311	36	18	12	7	29.292 "

Wind velocity of over 40 miles an hour is a Gale.
Vapor Pressure highest at Key West, Fla., 690. Lowest at Modena Utah, 112 at 8 A.M. At Roseberg, Ore., V. P. 227

tion, will bring about an attack. Many of the vocations of men require sudden changes of temperature when the body is not properly clothed, and account for the same thing. The kind of food, the way it is prepared, and eating, whether the previous meal has been properly digested or not, out of a sense of propriety, or duty, are accountable for fermentation and constipation. In a short time it looks as if the race would not need teeth from the lack of use for them, from having our food almost void of anything solid. Overindulgence is practised and admitted by most of us, and no one cares to be the pioneer in making a radical change of this whole complicated system. In the early days of the settlement of this country the prevalent disease was "fever and ague", we heard very little about "rheumatism." The fact was plainer and our forefathers were men who had to work actively out of doors; there was very little to make the organs torpid. No one will deny that each nationality has its diseases and this brings to our notice the diseases of to-day. A great amount of importance can be given this question of our surroundings. The disease of the age is so-called "rheumatism." One can hardly meet a soul who will not tell of having myalgia occasionally. This is the age of overindulgence. It is the age of overfeeding, overtaxing the nerves, the age of taking chances, the sacrificing of strength and health for business and "the dollar." It is with prosperity that we expect these things. The common people have luxuries and the rich have more banquets. Here in the temperate zones we have food from every part of the world on our tables, perhaps at the same time. There is lack of exercise of the proper kind at the proper time, or too much exercise of a wrong kind, with inattention to the kidneys and the bowels as well as no thought of eliminative baths. The overheating of our houses during the winter with a lowered resistance and associated prevalent infections during the spring bring to a climax latent troubles. For those who lead sedentary lives, two meals a day for a course of time is of benefit, as inactive habits are responsible for much autointoxication. In my opinion it will take radical measures to change these things. We all have patients who will not give us positive evidence of autointoxication and this should lead us to a better diagnosis by obtaining a history of a different kind. If we were to speak of the differential diagnosis we would include every possible kind of arthritis and neuritis, monoplegias, as we have in some forms of tortipelvis, central and peripheral nerve lesions, the characteristic inflammations of sacroiliac disease, hip-joint disease, and coxalgias as well as "crick in the back" and local diseases, gout, "joint mice," arthritis deformans, osteoarthritis, trauma of every sort, and the condition commonly called "rheumatic" which suggested this paper.

Finally I wish to speak of [illegible] of some of the most effectual drugs and [illegible] tions.

First of the specific [illegible] mention the Bier treatment because of recent experiment with it. Cases are being reported with most satis-

factory results. The principle is that of hyperemia producing absorption, followed by resolution. This is brought about by constriction of a rubber bandage above the effected joint, to be worn all night, or part of the day and all night for a period of from ten to fourteen days. It is not to be used in acute arthritis, but as a rational treatment for the slow, chronic inflammations. Baths will produce a mild degree of hyperemia and perhaps some of the good results from the Bier treatment reported in the journals have previously been brought about by baths. This treatment is as yet in the experimental stage and experience will tell us its worth. All pus joints should be opened and drained, splints or plaster used, and the joint placed in a position to be of the most use in case it should become ankylosed. Exudations and soft noninflammatory swellings are best treated by the use of the elastic web compression bandages, first applying a cotton bandage below to prevent swelling of the parts. The operative treatment of sciatic neuritis should be limited to the removal of all sources of reflex and direct irritation, and to the securing of rest. Have all piles removed, attend to rectal strictures or any growth in the region of the nerves, immobilize sacroiliac disease, keep the principle of "inflammation at rest" in mind. It is not best to advocate nerve stretching, vibration, or electricity in the acute stages of neuritis, some few good reports to the contrary. Salt injections along the nerves are helpful, and so are hot air and electric-light baths. It is certainly of the utmost folly to speak of specific drugs for these numerous complications. Other means of therapeutics must be combined, else we are planning a "hit or miss" campaign of the worst form. The whole picture must be studied and stress laid upon prophylaxis. One will find himself at times treating the nose and throat or sending a patient who can afford it to a suitable climate as a prophylactic measure. In their order I will enumerate the class of drugs usually used to treat a developed case, viz., Intestinal antiseptics, eliminants, (cathartics, diuretics, diaphoretics), hepatic stimulants, antacids, tonics (glandular, nerve, and muscle), alteratives, anodynes, antiphlogistic applications, counterirritants, antipyretics, antispasmodics, spinal sedatives, cardiac stimulants, and serums. An admirable combination of an antacid, intestinal antiseptic, and anodyne is a 5-grain capsule of equal parts of aspirin and acetphenetidin to be given as required. For acute, painful conditions it will be of daily use. In extremely painful localized inflammations add ¼ to ½ grain of codeine. Salicin has its advocates, but has no advantages and some disadvantages. The sulphocarbolates of lime, zinc, and soda, with saline for bowel elimination, have many followers, and constitute good treatment. As laxatives we can use sulphur waters, salt water, magnesium sulphate or citrate, Rochelle salts, almost any aperient water, cascara, or combinations for complications of calcium, lithium salicylate, and colchicine.

An active saline is magnesium sulphate 1 lb., aromatic sulphuric acid 1 oz., essence of gaultheria 2 drams, water 1 qt., mix, filter. Dose:—from one to two ounces occasionally. Of hepatic stimulants, calomel or the following: podophyllin ¼ grain, leptandrin ½ grain, iridin ¼ grain, extract of nux vomica 1-16 grain, pulv. capsic 1-3 grain, mix. Antacids: alkaline waters, aspirin, sodium bicarbonate. Throat and nose prophylaxis should consist of the free topical use of peroxide of hydrogen glycerin, and water, equal parts as a spray and gargle, followed by alkaline antiseptic washes and oleaginous antiseptic sprays. Tonsillitis will sometimes be aborted by the use of equal parts of oil of sweet almonds and liquid guaiacol as a spray; this should be repeated. It is an irritant, but the irritation passes off soon and will produce gratifying results. Camphor and menthol in a hydrocarbon oil can be used freely for the same symptoms. Hamamelis, calendula, and pine oil, for the more chronic inflammations, will be found useful. Surgery and the cautery may be required. Of the tonics, those which build up the nervous, muscular, and glandular tissues should be combined. The hypophosphites, phosphoric acid (in neuritis and neurasthenia), hydrastis, alkaline elixirs, quassia, gentian, syrup of the iodide of iron, or iodine. Of late formic acid has been used for muscular fatigue and as a muscle tonic. Olive and codliver oils are nearly always indicated. Strychnine should not be given at all in hyperesthesia of spinal origin. This drug is not well borne in many nervous conditions. Fowler's solution in wine with colchicine and intestinal antiseptics should always be considered. The iodides and mercury lead the list of alteratives, bichloride 1-40 grain three times a day. Of the anodynes use aspirin, acetphenetidin, codeine, morphine, and local applications, such as ointment of the following, applied under cotton: oil of gaultheria, menthol crystals, and the tincture of opium of each; one dram, liquid guaiacol one-half dram, lanolin four ounces. A liniment of the following applied hot under cotton properly held in place by a bandage, is of temporary benefit: oil of gaultheria, menthol crystals, tincture of aconite, tincture of opium, of each, one dram chloroform and soap liniment, of each two ounces, and glycerine four drams. Antiphlogistic applications of hot mud, clay, and glycerin. Serums are as yet in the experimental stage and the results of such experiments will depend largely upon the isolation of specific germs and the methods employed in the manufacture of the serum. We are making some experiments in the use of antigonorrheal and streptolytic serums, but we are not yet prepared to give our results. It is a great field and promises much. Plasters of belladonna, rhus toxicodendron, and bryonia are palliative. It is seldom necessary to use irritants; the best is the tincture of iodine.

Conclusions.—(1) The various infections will account for every form of so-called "rheumatism" except muscular and that is an intoxication. This intoxication accompanies or precedes most articular and some nerve infections.

(2) The term "rheumatism" is a misnomer, but must be retained for a time, until real facts are appreciated by the profession and laity.

(3) Better diagnosis brings intelligent treatment.

(4) Intelligent treatment means the use of combined methods and a thorough working knowledge of the case. This should consist of prophylaxis—better understanding between patient and physician, with attention in the main to social conditions, dietetics, exercise (or rest) as indicated, elimination by proper baths, fresh air, the right cooperative mental attitude, and in some cases climate.

(5) Autointoxication with faulty elimination is directly responsible for these conditions.

(6) That it is necessary for physicians to make a greater study of the toxic effects of leukomains and to lay more on the findings in the urine of the products of indigestion.

(7) An examination of the urine is important in every case for these products of metabolism as well as albumin, casts, and sugar.

(8) Heredity has no effect except as establishing social conditions followed by the family.

(9) The importance of baths and the precedence

of hot mud-packs over other baths for equalizing the circulation, stimulation of glandular activity, and elimination.

(10) The avoidance of a sedentary life and also of great muscular fatigue, the latter being a cause of muscle pains in children and working men.

(11) Alkaline waters and drugs hold a large place as antacids and antiseptics to the intestines, though they are greatly abused.

(12) Hot baths must not be given in dilated hearts, high blood pressure, arteriosclerosis, tuberculosis, and great emaciation, though they are indicated in autointoxication without such complications.

PROGNOSIS IN THE CONSUMPTIVE.*

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The word consumption ordinarily suggests an incurable condition, and one which proceeds slowly yet steadily to its termination, so that there is without doubt in the public mind a greater dread of it than of any other chronic disease in the whole category of illness known to the human family. This is well based upon the facts of the widely-spread cases of the disease, the opportunity which nearly all persons have of tracing its progress from a certain point, and the multitudes who die from it. But on reflection it will be seen that all this may be true, and yet the inference which has been drawn may be unsound, for it only proves that tuberculosis (consumption) is not commonly cured, and not that it is incurable. Indeed, admitting as we do the general truthfulness of the generally received opinions, we feel assured that there are good grounds for believing both the apparently contradictory statements, viz., that tuberculosis is commonly fatal, and yet is commonly curable.

In past years the nature of tuberculosis was not known as it is to-day. We think that there are some reasons for believing that it was not precisely the same then as now. That belief has an excellent foundation when we consider the hygienic conditions in the broadest sense of the times, also, for example, the inflammatory tendency which was common in the seventeenth, eighteenth, and the early part of the nineteenth century, and which is rare now, owing to our modern mode of living; consequently we shall not be justified in adducing former experience either in aid of, or in regard to, the present opinion. But still the most widely-spread source of error is the fact that neither a percentage of the profession nor a great percentage of the public has taken cognizance of the disease in its earliest manifestation, but has admitted its existence only after much advance has been made, and then watching the case from that starting point, it has been seen that the disease is almost universally fatal. If that starting point were the earliest period at which we could become acquainted with the disease, then we would think that the popular belief could not be gainsaid. Hence, the whole question turns upon that point, viz., the general recognition, both by the profession and the public, of the disease in its earliest manifestations. This is the modern trend of the medical world of to-day.

In this view it is easy to admit that the present age is right in believing consumption to be curable in a high percentage of cases, while former ages were equally right in their confirmed belief in the contrary; for, until our improved means of early diagnosis were discovered and widely made known, and cases of the disease were brought together in large numbers for careful investigation and study in the hospital, sanatorium, laboratory, and dead house, it was quite impossible either for the public or the majority of medical practitioners to do otherwise than commence their recognition of the disease at an advanced period of its progress. Then the disease seemed involved in mystery as to its nature, and so hopeless was it in its progress that practically little attempt was made to control it. But now that we have means of tracing conditions preexisting to those which constituted the starting point of former times, we venture to affirm that but few diseases are more clear in their nature, or more readily capable of detection in their very early period of manifestation, than tuberculosis. The modern trained methods employed in recognizing the early stages of tuberculosis should be the study of every practitioner. It is common to speak of the mysterious character of phthisis, as though we assumed that there were other conditions of disease which were more clear, forgetting that we are unacquainted with the essential processes by which either healthy or unhealthy nutrition is carried on, and with the nature of the various conditions of disease to which we have given names. In all these instances we are acquainted with certain leading facts, while the minute changes which they grossly represent are hidden from view; and in like manner, and in various degrees, we possess certain powers by which we may violently arrest the processes upon which the diseased action appears to depend; but in all, our duty is chiefly confined to aiding the efforts of nature. Unquestionably if the want of success which has attended our efforts to arrest the progress of consumption is greater than has attended our efforts to arrest the progress of any other disease, accompanied by an equal destruction of the organ with which it is associated, it is only the great prevalence of the malady, and the vast importance of the organ affected in relation to the animal economy, which has led to the present belief of the special incurability of tuberculosis. It need not be affirmed that we are equally powerless to restore the structure or the function of the liver, or of any other organ on which an equal amount of injury has been inflicted.

Hence we infer that while the present belief may be true under certain existing conditions, the opprobrium which has specially been cast upon the healing art in reference to tuberculosis, is at least in great part most undeserved, and that now, admitting partly the practical incurability of the disease after it has made a certain degree of progress, it is our duty to look at the affection in its earliest aspect, and in doing so to lay aside opinions founded upon facts belonging to a later stage, so that with unprejudiced minds we may ascertain if in that new condition we have not the materials by which the remedial art may act more effectually, and a disease which is in its nature curable.

There is one leading particular in reference to this question in regard to which the present mind is less prejudiced than in former ages. From the days of Hippocrates to those of Laënnec the disease was distinguished by its general symptoms almost exclusively, but Laënnec, introduced the new era, and from that time on the progress of our knowledge has been one grand march forward.

I think that we may with confidence refer to the authorities of the entire medical world adduced as proof of the advance which has been made on this subject within these last few years, and while they

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may differ as to the exact nature of this pretuberculous (or early stage), they all tend to prove that there is a stage of the disease which exists before that critical period is reached when evidences are to be found, both in the lungs and in the general system, which leave no doubt as to the exact nature of it.

Under what Condition May We Hold Out a Good Prognosis for the Early Stage of the Tuberculous?—It seems almost superfluous or absurd to speak upon prognosis here when we profess to treat a curable disease, but as there are many questions upon which the wished-for issue depends besides the stage of the disease, I think it most convenient to discuss the subject at hand separately.

The conditions in which we may confidently hope for a successful result are the following, especially when they are all present at the same time:

1. The disease in the stage preceding any evidence of a lesion, or when the tuberculous lesion is very small and isolated at the apex of one lung.

2. The progress of the disease has been slow, so that there have been slight evidences of failure of the general system during many months, and with no evidence of a recently accelerated rate.

3. The original state of the constitution was moderately good.

4. The age of the patient is from about twenty years to middle life.

5. The existing state of the health is moderately good, so that, by careful regulation, a due amount of nitrogenous food and of exercise may be taken with comfort.

6. The rates of pulsation and respiration do not vary materially from those in health.

7. Cheerful willingness to obey the prescribed directions, and such pecuniary and domestic circumstances that the whole arrangement necessary to the treatment of the case may be carried out.

8. Due freedom from anxiety, and removal from whatever conditions are unfavorable to the restoration of health.

9. Continuous breathing of fresh air, with all hygienic accompaniments, etc.

Such are the most favorable conditions, and it must further be observed that they are met with in a large proportion of cases in the middle and upper classes of society, but they cannot be universal. As for the poorer classes, the municipalities and the States are taking charge of them and placing them under the best conditions possible to meet these requirements.

The Lungs.—I will now enumerate the several circumstances which are unfavorable, and the degree of importance which should be attached to them, and first the conditions present in the lungs:

1. When the lesion is increased so that it may be detected below the clavicle. The extent of the lesion is important, both because of the interference with the vital functions of the lungs, and by reason of its affording grounds for the occurrence of new complications; but under these conditions there is ground for hope if the amount of the lesion does not appear to be great, so as to interfere much with the circulation of the blood in the parts thus occupied, if the progress has been slow and uniform, and if all the other conditions are favorable. We should attach far greater importance to the limitation of a consolidated or infiltrated mass to a moderate space than to an equal quantity distributed in small masses of infiltration, and yet not spread over a large area.

2. When the deposit is met with in both apices. We think that it cannot admit of a doubt that the progress of the case is greater and the prognosis more unfavorable when there is a small amount of infiltration in both lungs, than when only one lung is implicated in the same, or even in a somewhat greater degree. This would probably imply that the causes of the disease exerted a more general influence, or were more intense, as we should certainly infer that there was double danger of complications; yet, when the deposit is very small, and all other conditions satisfactory, the case is still hopeful.

3. When softening and breaking down of tissue has already taken place. We have limited the curable conditions to those in which the extent of softening is small, and yet involving the whole consolidated mass deposited. Such cases have been seen in which these conditions existed, and every mark of disease has passed away except a certain degree of unevenness of the vesicular murmur over the lesion. We have, however, the conviction that softening in any degree very seriously complicates the case, and it is then only under most favorable circumstances that we can hope for the removal of the softened matter, whether with or without the production of a cavity, which may remain open for a period. In such cases it is impossible to give a favorable prognosis except by watching the progress of the case, but when it is found that the softening is strictly limited, that the evidences of it gradually pass away, that the vesicular murmur is gradually restored by the increased degree of expansion of the surrounding cells, and that no further deposition takes place, a favorable issue may be anticipated.

4. When the feebleness of respiration is very great, so that there is general flattening of the chest wall. It not unfrequently occurs that the degree of diminution of respiratory power and action is very great, without there being any evidences of tuberculous deposit, and in such instances there is marked prostration of the whole nervous system. This is much more common in females than in males, but in both it is particularly found in those who pursue strictly sedentary or indoor occupations, attended by much anxiety and poor living, as for example, seamstresses, tailors, shoemakers, and many such workers.

5. When the patient cannot fully pursue the system of deep respiration, from want either of respiratory power or of appreciation as to the right method of performing it; the causes may also reside in nasal and throat obstructions, etc. I have already here intimated that many such cases are met with in which, with all the training which can be given, the respiratory action is short, quick, and gasping, when an attempt is made to adopt the plan of deep respiration. It is difficult to dissociate the two conditions, but I have no doubt that many persons who have pursued sedentary occupations sedulously for years, and who have lost much courage and nervous power, have also lost the power of easy and deep respiration—in other words, they have forgotten how to breathe. Also those belong in this category who have been born with contracted and deformed chest walls, or who suffer from acquired nasal deformities and many such conditions which interfere with normal breathing, etc. In such instances, the chest falls in respiration below the normal degree, so that there is a less amount of residual air remaining in the lungs, and hence the diminution in the vital processes and the difficulty of maintaining a due degree of expansion of the lungs are proportionally increased. Unless such patients can be taught to respire slowly and deeply, so as to expand the air cells, and also to keep them expanded from time to time, at the end of respiration, we cannot but believe that their condition is hopeless. All deformities hindering the natural respiratory dynamics must be remedied wherever such exist.

6. When hemoptysis is persistent where there is no evidence of progress of the disease or when the disease progresses very slowly. We often run across cases in which the disease appears to be kept in abeyance for two or three years, and the general health is improved, but in which there are, from time to time, attacks of hemoptysis, in those ultimately the signs of progress appear. The importance of this sign is no doubt in the indication it furnishes of the want of freedom of circulation in the lungs as a whole, which attends deficient expansion, or of a depraved state of the blood and general organism, whereby a healthy condition of nutrition is not regained. It occurs without any sign whatever of softening of the tuberculous infiltration which may have been deposited.

The General System.—The following are the unfavorable conditions in the general system which affect the prognosis:

1. When the powers of the general system are greatly enfeebled.

2. When the capability of reaction is found by experience to be very small.

3. When the appetite, digestion, or assimilation is very defective, and particularly when certain kinds of fats, milk, and other kinds of animal food cannot be sufficiently taken, even after careful training.

4. When food, clothing, or proper shelter is deficient in any marked degree.

5. When there is oppressing anxiety.

6. When such a patient cannot be removed from injurious conditions, such as foul or heated air, exposure to cold, and sedentary occupations.

7. When self-abuse or other degenerate practice in either sex is or has been largely practised, or when there are confirmed habits of excessive indulgence in alcoholic liquors or tobacco.

8. When the system is highly sensitive, so that the whole organization is in a state of perpetual unrest, or when it is so deficient in nervous sensibility and activity that it does not respond readily to the ordinary stimuli.

9. When the patient is younger or older than the limits above mentioned.

10. When from any cause the patient will not, or cannot obtain change of climate, providing the case is a typical one for that special treatment, and will not, or cannot steadily pursue the prescribed plan of treatment.

I have not thought it necessary to offer separate comments under these heads, since the whole forms a connected series, and any of them is sufficient to greatly lessen, or perhaps extinguish, hope in the prognosis of the case.

So much importance must be attached to these several questions that I advise the most careful consideration of each one of them, and it is often necessary that the case be watched for a time before a correct judgment can be formed.

As to the importance of age, we may say that in persons aged twelve or fifteen years, or thereabouts, in whom the evidences of tuberculosis exist, we usually find the disease less capable of arrest or cure than in those at a later age. This may be owing to the fact that the early attack of the disease may be in some degree evidence of the deep implication of the system, and probably it may be in part due to complications which arise in reference to the appearance of the menses, and the various rapid changes which occur in the organism and the passions at the period of puberty. But however it may be explained, we augur less favorably of a case in which the disease begins before the age of sixteen than of one in which it is deferred until twenty years of age, or later. The more unfavorable prognosis in advanced age is clearly associated with the progressing defect of the vital powers, the diminution in the expansibility of the lung, which is always progressive at that period, and the diminished possibility of adopting some of the means which are necessary to a cure.

There is one most important relation between the state of the lungs and the general system which we must always consider when forming a prognosis. A small amount of lung disease, with a very enfeebled system, is far more unfavorable than a somewhat larger amount of the former, with a moderately robust state of the latter. While there are many cases in which the general health appears to be moderately good when the lung disease is far advanced, the rule is to find the system injured while the lung disease is yet very limited, and hence, after having ascertained that the latter is restricted within the narrow limits already indicated as hopeful, the whole question of prognosis rests upon the state of the general system.

The Prognosis Based on the General and Numerical Conditions.—Under this heading I purpose to introduce a short summary of facts derived from a very extensive inquiry into the conditions which may be presumed to have modified the constitution of phthisical persons when they were still in health. The primary aspect of this inquiry is that of etiology, and had it been my purpose to have written specially upon the causation of tuberculosis, I should doubtless have referred to the inquiry under that special head. As it has, however, an important bearing upon prognosis in reference to the constitution of the patients, I purpose to insert the results in this place. I do not, however, intend to enter into much detail, but simply to show the direct relation it bears to the prognosis of this disease.

The inquiry embraced an experience of over twenty years. A thousand patients made up this statistical study. Six hundred and twenty-one were males and three hundred and seventy-nine females. I will first consider the circumstances which refer to the parents, and then those belonging to the patients.

Fifty-four per cent. had lost father, 30 per cent. the mother, and 28 per cent. had lost both parents. In 25 per cent. only were both parents living. Their average at death was 50.8 years, with an increased duration of 4.7 years on the part of the fathers. The most frequent age at death was 35 to 55 years, whilst only 11 per cent. died under the age of 35, and some lived to the age of 95. Eighteen per cent. had experienced feeble health before birth of the patient, and 34 per cent. throughout life. In 27 per cent. one or both parents had led unsteady lives. 21.7 per cent. of the parents had died of consumption, whilst in 2.8 per cent. the grandparents, in 23.3 per cent. the brothers or sisters, and in 0.1 per cent. the uncles or aunts had died of the same disease. They had suffered from rheumatism in 22 per cent., from asthma in 0.4 per cent., from liver disease and gout in 9 and 7.2 per cent., and from fevers, cancer, insanity, and diabetes in between 4 and 5 per cent. Presumed scrofulous and syphilitic affections were extremely few and difficult to compute.

The age of the parents at the birth of the patients was, in half of the cases, between 25 and 35 years, and only in 2 per cent. was it less than 20 years. The number of children was very large, viz., an average of 7.5 to a family, and in some families there were twenty-three children. The patient was the first child in 20 per cent., and the first, second, or third child in half of the whole cases; 40 per cent. of the parents' children had died.

Hence, in reference to questions involved in the idea of hereditary predisposition, it has been proved that in a large proportion of the cases the parents died in the middle of life, and had had feeble health. Their children had died in large proportion, and tuberculosis occurred in one-fifth of the parents. But in all these matters there was a large proportion in which there was no evidence of feeble health or direct tendency to tuberculosis. The parents did not marry too early or too late, and the patient was the result neither of immaturity nor of senile exhaustion, so far as age may indicate those conditions, yet he was commonly amongst the earliest children born to the parents. The question of hereditary taint implies either the direct transmission of the disease to the child, or a state of system in which tuberculosis is preeminently liable to occur. The results show that no one condition is dominant.

The average age of the patients at the period of the inquiry was 28.8 years, and 44 per cent. of the whole were between 20 and 30 years of age. In only 13 per cent. were they under the age of 20, and a few were at the age of 60. Twenty per cent. had been feeble at birth, but only 22 per cent. had suffered from feebleness of the general health, and 17 per cent. from generally defective appetite. In 12.6 per cent. the lungs had always been delicate. Only 2.5 per cent. had been dry nursed, 25.4 per cent. had perspired very freely, and 25 per cent. had never worn flannel next the body. Sixteen, 65.4, 60, and 41 per cent. respectively, had not had measles, scarlet fever, smallpox, whooping-cough, or nose and throat affections of various kinds and the frequency of any long-continued ill effects from these diseases was insignificant. Twelve and one-eighth per cent. had suffered from enlarged glands, and 4.5 per cent. from affections of the eyes, but otherwise the evidences of scrofulous diseases existed in a very small per cent. Sixteen and one-seventh per cent. had suffered from acute conditions of the lungs, and 14.8 per cent. from rheumatism, whilst typhoid fever and frequently diarrhea had occurred in 8.0 per cent. Malaria had occurred in 5.6 per cent., and liver disease in 4.3 per cent. of the patients.

Forty and one-fifth per cent. were married, and of these 13 per cent. were up to the period of the inquiry childless. Their average age at the birth of their first child was from 20 to 25 years, and in only 9 per cent. were they under the age of 20. The number of children was one and two in 44 per cent., and one, two, and three in 55 per cent. Thirty-eight per cent. of the children had died, and in 43 per cent. the general state of the health of the children was bad. Abortion had occurred in 40.2 per cent. of the child-bearing married women, and some had suffered eight abortions.

Eleven and one-sixth per cent. had committed sexual excesses, 15.2 per cent. had masturbated, and 22 per cent. had suffered from involuntary emissions. Sixteen per cent. had had syphilis, and 38.5 per cent. gonorrhœa. Twenty-nine and one-sixth per cent. had led a hard life at some period, 24.5 per cent. had drunk to excess, and 48 per cent. had smoked tobacco. Nineteen and one-third per cent. had kept late hours, and 23.2 per cent. had suffered much anxiety. In 70 per cent. there was some complaint as to the injurious influence of their occupations, and of those causes exposure, long hours, dust, and hot rooms, bending, posture, and the inhalation of dust or fumes were complained of in 32.1, 28.6, 13.9, 20, and 15.8 per cent., in their order. Nine per cent. had taken mercury largely, and with iodide of potassium, in one or more ways of administration.

Thus a large proportion of the patients had been born with feeble constitutions, had had feeble and short-lived children, had suffered from the effects of injurious occupations, and had been injured by the anxieties and immoralities of life. They were thus influenced by original and acquired causes of disease; but however important the former might be, it is impossible not to admit that the latter were still more so. They had not suffered from early marriages, and, considering their average age, they had been sufficiently prolific, and no inconsiderable proportion had been sterile.

Hence, again, we cannot but regard tuberculous patients as a very mixed class of persons, and one which derives its causes of disease from a greater variety of diverse conditions, many of which are, however, within their control and preventable. The proportion of those who had suffered from general feeble health and insufficient appetite throughout life was very small, but as they were the judges it may be that their standard of health was low.

One striking feature which I must mention was the greater liability of the female over the male sex to many of the ills to which I have referred. Thus, in reference to the parents, more mothers than fathers had children early, had feeble general health, and had died early. Of the patients, more females than males had mothers who died early, had most relatives who had died of tuberculosis, had parents with one child only, had experienced feeble health and defective appetite through life, had had delicacy of the respiratory tract, were married when very young, had feeble children, had lost most children, had suffered from anxiety, had had measles, scarlet fever, whooping-cough, and other diseases, had not worn flannels, had had a very defective education, were of susceptible temperament, had brown eyes, florid complexions, and fleshy habit, and had suffered from coldness of the extremities, etc. This is most striking evidence of the liability of females to conditions tending to constitutional disease.

We may now ask, in conclusion, in what way are we to regard these inquiries as important in reference to prognosis? It may be fairly replied that whatever conditions will so affect the constitution as to induce a disease will, when the disease exists, be so many reasons against the cure; and hence, in estimating the probability of cure of any disease, it is requisite to weigh well the relative importance of the causes which may have induced it. The first requisite in forming a prognosis in the early or curable stage of tuberculosis is to ascertain the leading conditions to which the disease may have been due, with a view to ascertaining the degree of their influence over the constitution and the probability of their removal, and hence, instead of regarding the cases as belonging to one class of persons, it will be found that they are exceedingly multiform and varied. The first place must doubtless be given to such as originally affected the system, and to the sex; so that in those patients whose parents and relatives have exhibited special marks of disease, or of defective constitution, whether tuberculous or otherwise, and in females, the prognosis must be less favorable. So also we must give the first rank to a defective state of the system of the patient commencing in early life and long continuing, from whatever cause it might have arisen. The importance of the acquired causes of disease must be estimated by their intensity and continuance, as well as by the natural vigor of the constitution and the effect which they had produced upon it. As a whole, their position must be secondary to that of those just referred to; but those which acted before adult life, and which then injured the health, and as sex-

ual excess and masturbation are of prime importance, I am therefore of the opinion that in every case there should be careful inquiry into the circumstances now referred to, and that the probability of cure will rest as much upon this as upon the more minute examination of the lungs, etc., and the impression as to the state of the general system of the patient.

These inquiries of a statistical nature which I here offer are simply to illustrate how many different conditions are at work in the predisposing causes of tuberculosis, and to show that there is not only one cause at fault in the acquiring of this disease, but that there are many. This fact I wish to impress strongly for the sake of the patient who comes for an honest advice, and to whom one may frankly tell these facts. Such a consultation will go far to help relieve his anxiety and gain his confidence for future treatment, when he has comprehended that this disease may have had its origin from one or the other of his environments, etc. The family will also be much relieved by the knowledge of the analysis of the case which has been so explicitly given to them, as well as to the patient who seeks treatment for the disease. After all, it is the duty of every physician to give a clear, comprehensive statement of this disease to every patient. If such a rule was carried out, much good in the prevention and cure of the disease would be the outcome.

816 Lexington Avenue.

A MEDICOLEGAL STUDY OF A MORPHIA-MANIAC.

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Superintendent Walnut Lodge Hospital.

The main facts of this case are these: Dr. J. B. Matthews of Greensboro, N. C., was indicted for the murder of his wife December, 1905, and tried for the crime February, 1906. He was found guilty of murder in the second degree and sentenced to twenty years in prison. He was bailed out pending an appeal to the higher court, taken to a sanatorium and treated for his addiction, and later discharged. He evidently relapsed, went to a low boarding-house, and committed suicide. The facts of his history and crime are as follows: He was born in Durham, N. C., in 1870, of highly respectable parents. As a child he was delicate, nervous, erratic, and impulsive, and was indulged by his parents freely. During his school days he drank beer at times, then whiskey, ran away from home and remained concealed for a few days, then returned. From fourteen to twenty years of age his life was very irregular; at one time a railroad brakeman, then a clerk in a tobacco house, and in a grocery store, then in a drug store, then became a student in pharmacy, finally took up medicine, and graduated from a medical college in Richmond in 1893 with honors.

During his medical studies the death of a young woman, to whom he was engaged, produced depression and a suicidal mania. He wrote letters, bidding good-bye to his parents and friends, giving directions as to the conduct of his funeral, and the distribution of his personal effects, then took a large dose of morphine, and later was found in a comatose state, from which he was resuscitated with great difficulty.

A year after he married, and later entered upon the general practice of medicine. So far as it was known his married life was very happy; he was very attentive to his wife in public, and a little boy, born two years after marriage, seemed greatly to increase the enjoyment of each other's society. The first years of his practice were uneventful, except that at intervals he drank spirits to excess, and was known as a drug taker. The last two or three years it was observed that his wife used morphine and was under its influence at times.

His conduct became more and more eccentric, and he changed his place of residence to a neighboring town, then finally settled in Greensboro. He was recognized as a physician of fair attainments, who might have had a lucrative practice and been popular in the community were it not for his eccentric habits and unreliable business methods, which were evidently due to drug taking. The last year or so he used cocaine at times, which fact was evident from his talkative and excited periods, alternated with stupidity and moroseness. His personal appearance showed great physical changes. His habits were careless and his manners abrupt, and his words and statements were unreliable. Prescriptions given at this time were so unusual and careless as to suggest mental disturbance and indifference. All his friends and associates noted his addiction to morphine and other narcotic drugs, and his wide variations of conduct from profound stupor and indifference to irritability and impulsiveness, and regarded him as unsound and more or less irresponsible. On the night of November 30, 1905, he was seen walking to the railroad depot with his wife, in a very happy state of mind. They both seemed to be enjoying themselves with the familiarity of children.

Next morning, December 1, a friend called at his house and found Mrs. Matthews unconscious and breathing badly. The doctor was also in a state of semistupor, and a neighboring woman was sent for. She recognized the gravity of the case and called in two doctors; they summoned the coroner, who was a physician. Extreme morphine poisoning was recognized, and active measures for restoration were begun promptly.

Injections of strychnine and nitroglycerin were given, together with the galvanic battery, and other means were freely used. The doctor explained that his wife had taken a large quantity of strychnine tablets the night before with suicidal intent, and soon after complained of extreme pain and began to vomit, and for this he had given her a quarter of a grain of morphine every half hour from 11 P. M. until morning. One of the physicians gave an unfavorable prognosis. This seemed to please the doctor, who sent several telegrams announcing the death of his wife, and talked of the disposition of her personal effects in a childish way. Later he appealed to the physicians to certify that his wife had died from heart disease, and thus avoid public scandal. In the course of a couple of hours an improvement took place in the symptoms. The battery giving out at this time, an effort was made to get another one, and the doctor was asked to lend his horse and carriage for this purpose. This he refused in a very childish way, claiming that he needed the horse for another purpose. His conduct was generally suspicious, begging the physicians to leave the room so that he could be alone with his wife. Failing in this, he was detected secretly injecting into the arm of his wife some solution from a hypodermic syringe, which was forcibly taken from him, and he made no complaint or explanation. He seemed to be in a confused state and was constantly smoking cigarettes. In the course of an hour after this event his wife was seized with convulsions and died. The physicians concluded that

was due to poisoning, and that the solution which he had given by the needle was strychnine. The reason that the motive for his strange conduct and repeated efforts to be left alone with his wife was for the purpose of making her case fatal by secretly administering some drug, and, failing in this, he boldly attempted to inject a solution under the cover while on the bed. Later he tried to bribe one of the physicians by offering payment for his services, and to enlist his sympathy by the fact of membership in the secret society.

After the death of his wife he talked freely of the funeral, ate a hearty supper, and went to bed, profoundly indifferent to the circumstances and conditions. When arrested, about midnight, he seemed to have no clear idea that he had committed a crime, but regarded the arrest as a very formal matter, which could be adjusted by his explanations to the sheriff. When taken to the jail he demanded whiskey and morphine, and seemed quite irrational and confused. The coroner, who had forcibly taken the syringe from the doctor immediately after the act of injecting the contents in the arm of his wife, found a large mass of white powder, undissolved in the barrel of the syringe. This he took to a drug store, and, by test, decided that it was strychnine.

This fact and circumstances of the death seemed so clear that the prosecuting attorney did not consider it necessary to have a post-mortem examination. Hence the body was buried without any examination, although the undertaker swore that it did not differ from other bodies, and had no appearance of extreme rigidity. The syringe was kept by the coroner until a few weeks before the trial, when it was taken to the Professor of Chemistry at the State University for analysis. He found the powder remaining in the syringe to be morphine, and without any possible trace of strychnine. In jail it was found necessary to give the prisoner morphine daily, and spirits occasionally, and during the trial the amount was greatly increased. The defence was insanity. It was claimed that the prisoner was a morphiamaniac, and by reason of his drug taking was unable to understand the nature and consequence of his conduct, and that he was in such a confused mental condition as to be unable to reason or act rationally, and that the act of injecting secretly into the arm of his wife some substance was idiotic and unreasonable, and did not have any influence in hastening the death of his wife.

It was assumed that his statements of his wife using a large quantity of strychnine tablets might be true, and that his efforts to prevent its poisonous effect by the continuous doses of morphine from 10 or 11 o'clock at night until the early morning of the next day would naturally result in poisoning and coma. Also that during this time, while using morphine himself, his mental condition would be so confused that such a course would be natural and characteristic of the imbecile conduct of a morphiamaniac. The experts for the defence swore that the prisoner was suffering from morphiamania and dementia, with delusions of paretic nature, and that he was in no way able to act sanely or with full consciousness of what he was doing; also that he was incapable of planning and executing a homicide, requiring reason and judgment as to the consequences and nature of the act. In support of this contention it was claimed that he was mentally defective by inheritance. His grandmother on his father's side was insane during her lifetime, and was said to have killed one of her infant children. On his mother's side one uncle died insane and an aunt had some form of convulsions, for one of which she was treated to death. Another one drowned herself, and a third member of the family committed suicide by jumping into a well. Other members of the family were nervous and erratic. In his early life he was impulsive, irritable, and nervous, was eccentric in conduct and manner. It was evident that he inherited a defective brain and nervous system, with a decided predisposition to some form of insanity. His early use of spirits and irregular life, with an attack of suicidal mania, were unmistakable evidences of this. His continued use of spirits and drugs, first at intervals and latterly continuously, was confirmatory evidence. His drug taking had become so prominent as to attract attention and create doubt among his friends of his mental soundness. All the evidence showed that the relations with his wife were amicable, and that she had used morphine with him, and that probably the comatose condition she was found in on the morning of her death was a repetition of what had occurred many times before, in which both had indulged in this drug up to stupor without any serious results following. There was no evidence of malice or motive on the part of the prisoner to procure the death of his wife. His strange conduct and semistuporous condition showed no degree of sanity, but rather the foolish weakness of a dement. The morphine found in the barrel of the syringe had been thrown in recklessly and then water turned on with a view of dissolving it, and in this condition he had attempted to inject it, with a strong probability that none of the contents was actually forced through the needle. The convulsions following had no probable connection with the injection, even had the substance been strychnine. With the pulse not distinguishable and the respiration reduced to five or six per minute, it was exceedingly doubtful that either strychnine or morphine could have been absorbed, even if injected in large quantities, so as to make any impression on the heart.

The prosecution urged that the convulsions and death were caused by the injection of strychnine and that the prisoner had a motive to put his wife out of the way. It was also urged that in other matters he was treacherous, vindictive, and competent to reason and execute a crime, that his drug taking was for the purpose of covering up the responsibility of the act, and that, while under the influence of some narcotic, he appeared conscious during the efforts to resuscitate his wife, and acted rationally on most matters. It was agreed that he was not a combative or irritable man, but nervous and impulsive, and when under the influence of drugs was demented and stupid in his talk and acts. His present appearance was that of pronounced anemia, with a melancholy, abstract face; his eyes were staring and glassy, his voice was jerky and husky, his conversation was in monosyllables, and his general appearance was that of great indifference and unconcern to the surroundings. His face was unsymmetrical, with a V-shaped palate arch and decayed teeth, and the skin of the face was pallid and tightly drawn. He complained of rheumatism, which was literally neuritis.

The toes and feet were contracted and painful, and reflexes were absent from both legs. His heart was regular, but feeble, the appetite was variable and his sleep broken, except when under the influence of morphine. In conversation his voice would drop down to a whisper as if the thought had escaped his mind. At times he claimed to be very faint and would go out into an anteroom, where injections of morphine could be given him, then return and fall into a drowsy state until the effects were

worn off. For the last two years his drug taking had been noted in his depressed sensory and reasoning faculties, and the impulsive, stupid conduct which showed unsoundness and irresponsibility. The judge charged the jury that the question of the kind of poison used, its quantity, when and how administered, should not be considered in their decision, but only the fact beyond all reasonable doubt, that death followed from the poison, administered by the prisoner, also, that if at the time, by reason of morphine which he himself took, and while under its influence administered the same or other drugs to his wife, and by the effect of the drug which he was suffering from he was unconscious of the character and consequence of his act, he could not be guilty of murder in the first degree. But he could not be excused because of the temporary insanity voluntarily brought on himself, and would be guilty of murder in the second degree. If at the time the prisoner administered morphine, or any other poison to his wife he was under the influence of a similar drug and had no purpose to kill her, but recklessly and carelessly administered it, causing her death, there could be no malice, hence he would not be guilty of murder in the first degree, but it would be manslaughter; and no excuse on account of, and by reason of, his mental condition should be considered. He also charged that no matter how far he was under the influence of morphine, if he had mind enough to be conscious of wrong doing, he was responsible. If his moral perceptions were so blunted as not to be able to distinguish between right and wrong, such voluntary incapacity did not excuse his crime. The confusion of the jury was apparent in the verdict of murder in the second degree, and the trial was another example of the effort to administer justice and maintain the majesty of the law and force twelve men to settle the question of the sanity and responsibility of an evident imbecile. A restatement of the leading facts undisputed make this clear.

1. The heredity history in Matthews' case showed a distinct neurotic taint and predisposition to mental instability, with feeble controlling power. In the ordinary strains and drains of life he was incompetent to live normally, but would most naturally develop some form of neurotic disease, according to the environment and conditions of life.

2. His defective heredity was apparent in the sensitive nervous system of early childhood and erratic conduct, manifest in a suicidal mania at the beginning of manhood. This, with the history of spirit and drug taking, was the natural course of defective organism with faulty culture in bad surroundings, disease would follow with absolute certainty from such conditions.

3. The fact of graduating with honors and becoming a popular physician, making and losing many friends by his erratic conduct and increasing eccentricity, was further evidence of a neuropathic and an unstable, unsound brain.

4. The year before the alleged crime he was notorious for his periods of stupor, depression, and talkative delusional deliriums. He became careless in his dress and disregarded many of the proprieties of life, indicating great physical and mental changes. His untruthfulness, lack of respect for his word, absence of pride of character, and petty efforts to take advantage of others further confirmed the fact of his defective reason and irresponsibility.

5. His relations with his wife gave no indication of any variance or disagreement, and at times in public they exhibited great respect and affection for each other. He was not considered by his friends combative or revengeful, but rather the opposite, hence there could be no motive apparent to dispose of his wife.

6. The comatose condition of his wife on the morning of her death could not be called an unusual event, when both were using morphine. His statement that she tried to commit suicide by taking a large dose of strychnine and that he had given as an antidote continuous doses of morphine every half hour, was a very natural order of events, particularly as he was using it himself. His indifference to the efforts of the physicians in restoring her and his apparent impulse of a lunatic, without consciousness of the consequence and results of his act.

7. The further history of the prisoner in jail and during the trial, in which a degree of nervousness bordering on delirium came on unless he was given morphine in sufficient quantities to make him comcomfortable. His general demented condition, erratic talk, and stupor alternating with apparent sanity, but always followed by general unconsciousness concerning himself and surroundings. After the trial he was taken to a sanatorium and the morphine was gradually withdrawn. He was erratic, unreasonable, had delusions, and was with great difficulty managed. His general health improved and he was finally discharged, restored, but he soon after relapsed, began to use spirits and cocaine, and became very violent and delirious when opposed. He was taken back to the hospital and recovered partially, then went out and in a course of a few days went to a low boarding house and shot himself; evidently he was under the influence of morphine and cocaine at this time. This termination of the case was natural and characteristic and confirmed the diagnosis of insanity and imbecility.

Some of the general conclusions may be stated as follows:

1. It was an error of the authorities to assume that death was caused by strychnine, and not verifying it by post-mortem examination and chemical analysis of the contents of the syringe.

2. It was a still more serious error to assume that Matthews was sane and responsible for his acts, especially in that community where his mental condition was a subject of common observation and talk and his drug taking was acknowledged beyond all question.

3. The apparent motive for injecting into his wife's arm some substance to increase the fatality of her condition would naturally demand his arrest and confinement, but the assumption that this was the sane act of a responsible man was a reflection on the intelligence and judgment of the authorities.

4. Matthews should first have been tried by a commission of lunacy, and his mental condition determined. Then the facts of the possibility of his brain being normal with full power of restraint would have appeared. The question of how far a person could use spirits and morphine and other drugs for years and be capable of planning any act requiring judgment and consistency would be answered. How far such a man could be considered rational and conscious of duty, responsibility, and obligation would be apparent. The delusional condition of such a brain and the delirious reasonings and childish talk and conduct would be natural in such a condition. This trial and verdict should mark the close of the medicolegal efforts to determine the criminality and responsibility of persons who are notoriously degenerate and incompetent by reason of the use of spirits and narcotics. There is certainly something gruesome in the effort to de-

termine degrees of sanity in persons who are notorious spirit and drug takers and whose appearance and conduct attract attention and are prominent to all their associates. The law gains nothing by such farcical efforts to determine crime and the degree of punishment which it merits, and human justice gains nothing by attempting to decide how far incompetent and defective brain culprits are able to control and judge of the results of their acts. In reality the higher consciousness of the community and its intelligence are hurt by the injustice of attempting to adjust wrongs in jury trials on the basis of full responsibility. The attempt to make a jury of twelve men understand the actual condition of the mind and motives of a morphiamaniac and determine how far he could reason and judge of the nature and consequence of his acts is a reversion to the theory and practice of the Middle Ages.

PUBLIC CONTROL OF DISEASE THROUGH A NATIONAL DEPARTMENT OF HEALTH.

By HAROLD W. WRIGHT, M.D.,

ASTORIA, LONG ISLAND.

This subject was recently discussed in a general way by Prof. J. Pease Norton, Professor of Economics at Yale University, in the *Journal of the American Medical Association*, September 29, 1906. I wish to present a few remarks upon this subject from the more personal point of view of a private practitioner of medicine.

In the first place I would speak of some of the disadvantages which result from the present methods of practice and which affect both physician and patient. I think I am correct in saying that there is no thoughtful general practitioner living to-day who, no matter how successful he may be from the world's standpoint, is satisfied with the present-day methods by which he is obliged to pursue his vocation.

We start out in the beginning with the highest ideals; we intend to practise as scientific medicine as is possible without regard to pecuniary reward. These ideals have either come to us naturally or have been instilled in us by our teachers in the medical school. We have been told that the practice of medicine is not a trade but a humanitarian calling, and the most noble calling that has ever existed or will exist. We are taught to feel that the knowledge of having done good work should be sufficient reward for our labors. All this we feel to be true: it appeals to our highest nature and we want to act accordingly.

In our hospital course we give ourselves up entirely to the welfare of our patients, we watch the course of their malady with untiring diligence, and we do so purely from a sense of duty which is in accordance with the unselfish and scientific standard we set for ourselves when we were in the medical school. When we enter upon general practice we confidently expect that we shall be able to continue our work in such a spirit, and so we look forward to our life work with much pleasure and enthusiasm. But what happens to the great majority when they have at last become launched upon "the sea of troubles"? And by the "great majority" I mean those who are obliged to live by the practice of their art and yet want to live up to the ideal standard they have set for themselves. These soon find that expenses are heavy, competition severe, and the readiness or ability of the patient to pay for one's services limited to an unexpected degree. They find that they must see a large number of sick people every day in order to pay expenses and have anything left over. Most patients cannot or will not pay for more than one visit a day, if that. Consequently the doctor cannot afford to give more than a very small portion of the day's time to each individual case, especially if his patients are spread over much territory. The doctor finds that he cannot give the same amount of thought and attention to his patient as he did when a hospital interne; it is both a physical and financial impossibility, and so, perforce, he gets the habit of rushing through his work in the modern strenuous and superficial manner. When he has a little time to think quietly a feeling of dissatisfaction, a vague sense of something wanting will come. And what of the other party, the patient? Does he or she never feel that there is something lacking?

As the years pass the doctor sees men of less skill, less intelligence, and lower standards than his own making "a success"; this adds to his dissatisfaction with things in general, and his fellow-practitioners in particular. He may be at odds with his colleagues on account of some slight misunderstanding or indiscretion on his or their part, some little breach of professional etiquette, which is often contributed to by a thoughtless patient's lack of fidelity or love of gossip. Thus, in many communities, we find little or no harmony and cooperation within the profession; everyone is working for himself, forgetful of the purpose of his calling—to save life and prevent disease.

Another source of worriment and disappointment to many is the lack of hospital facilities; either there is no hospital in the neighborhood or none to which the physician feels he can entrust the care of an operative or difficult medical case.

There is another condition which hinders the true progress of our work, and that is the popular demand for a prescription which will alleviate the symptoms at once, regardless of their cause. This condition is due to the fact that in the past physicians have been either too ignorant or too careless to investigate their cases scientifically, and have yielded to this demand rather than take the trouble to instruct their patients in matters of hygiene.

The popular mind being so uneducated has no respect for such advice unless accompanied by the inevitable prescription which usually makes the greater, if not the only impression. So, in order to "succeed," it happens that we must "bluff." Truly, a most disgusting state of affairs in the light of our youthful ideas! In order to make a living we must cater to the public taste like any tradesman.

These are a few of the disadvantages of the present system. Now, let us suppose the existence of a radically different order of affairs and see if these disadvantages would be overcome and benefits, unattainable at present, be obtained.

First, let us presume the existence of a national bureau of health having subordinate bureaus in every community of about a thousand inhabitants. At the head of these bureaus are physicians who have proved their ability to deal with public health problems; men who are wholly devoted to the greatest good of humanity by the prevention of disease. Those of the central bureau have the right to select their subordinates from successful civil service examinees according to the standing and personal qualifications of the latter. All physicians are therefore licensed only by the central bureau and are in the employ of the same. Then let us suppose all the hospitals under the control of the national de-

partment and that one hospital is supplied for each community or district, containing a certain number of people. The hospitals would be the headquarters of the subdivisions of the health department; they would have a staff of resident visiting physicians and a staff of resident and visiting nurses, all under the authority of the hospital superintendent, who would be a physician also. All of these officials would be appointed by the civil service commission of the national bureau.

Every case of illness would then be reported to the local health bureau by the patient or his relatives; a health officer would be sent to the home to investigate the case and treat it there, or at the hospital, according to circumstances, a nurse being also provided if necessary. The attending physician is responsible to someone above him for the conduct of the case, and he has constantly at his command the counsel of his colleagues and the facilities of a hospital. There would be none of the competition and lack of cooperation that exists among physicians at present, because all would be working together for the good of humanity and not for a fee. The physician in charge of a case would have the right and feel free to visit his patient at any time and study the disease in all its aspects; he would not be subject to popular prejudices and have to cater thereto for fear of his patient deserting him.

Under such a system the medical profession would be invested with such a degree of dignity and authority that its counsel would not only be always sought, but its words of advice would also be considered as words of command, and would carry enough respect to be obeyed. The local health bureaus with their hospitals would be centers of medical education of both the profession and the laity in matters pertaining to personal and public hygiene, the prevention of epidemics, and the care of infants and children.

Under such a system medical inspections of the entire population could be made at periodic intervals. Thus many ailments could be abated or prevented and wrong habits of living corrected; the spread of venereal disease could be checked. Because there is strength in consolidation, many sanitary measures could be enforced which are now impracticable; cities could be made to have pure water, a proper sewage system, clean streets, smokeless and dustless air, and sanitary homes. As Professor Norton suggests, the national health department and subdepartments could be allied in cooperation with the departments of education, labor, commerce, immigration, agriculture, and food inspection and the regulation of the drug and proprietary medicine business. Under such a union what good thing for the public well-being could not be accomplished?

Finally, by reason of the fact that every licensed physician had an assured living, he would be able to devote all his time and thought to his proper work with an interest and energy impossible under present conditions. No fortunes could be made out of our fellows' ills, to be sure, but the kind of men who would enter the profession under a system such as I have indicated would neither desire nor attempt to make capital out of their work.

Now as to the practicability of such a system. Are these ideas, which I know might be much better expressed, visionary and impossible of realization or wrong in principle? I grant that they are visionary in the sense that they cannot be carried out practically at once; but I am looking into the future, and a great many plans for human welfare which were once "visionary" have been realized, and not all of them have been found to be wrong in principle or disastrous in results. It may be argued that such a system would "savor too much of paternalism, it would interfere too much with personal liberty, and would be altogether unAmerican." I do not believe that anything is unAmerican which brings the greatest good to the greatest number of people. There has been no such outcry against the present methods of controlling some of the contagious diseases or against international quarantine. Are not these interferences with personal liberty? But would anyone abolish them on that account? Do they not "savor of paternalism"? Is not the public school system guilty in like manner?

But it may be said that such a system would be impracticable, by reason of the great expenditure necessary for its support. I do not believe that such would be the case because such a system could be supported by a just income tax upon its beneficiaries among whom would be numbered every inhabitant of the country. Furthermore, the individual would not feel the expense involved as much as at present he feels the average yearly doctor's bills, and I have already tried to indicate that he would have his ailments much better attended to, as well as other troubles he knows not of, prevented.

The nucleus for such a system already exists in the Public Health and Marine Hospital Service and in our municipal and State health boards. There are already evidences of the growth of power and influence for good in these organizations which now are separate and noncooperative. How much more good they might accomplish, if united, I have already attempted to show.

Conclusions.—1. Present methods of practice hinder us from pursuing our vocation in the spirit appropriate to it.

2. A national department of health, conducted in the way indicated above, would do away with many of these present hindrances and would give better treatment of, and protection from, disease.

3. There are no insurmountable obstacles in the way of such a system, and there are already indications of a complete public control of disease in the future as manifested in the greater influence being acquired by the Public Health Service at Washington and by our municipal health departments.

Method of Infection of the Amniotic Liquid by the Passage of Bacteria and Toxins Through the Membranes of the Ovum.—Guiseppe Ranieri considers the way in which bacteria and toxins may gain access to the amniotic fluid in cases in which the membranes are intact. The amniotic fluid has some bactericidal action on many germs, but the addition to it of meconium renders it more ready to undergo putrefaction. The author has made experiments on animals to ascertain the method of entrance of the germs and gives us his conclusions. The amniotic sac formed of its three membranes, when all perfect cannot be penetrated by pathogenic bacteria. The amniotic fluid can become infected when the sac is still closed, but not all of the three membranes are perfect. The death or maceration of the fetus brings about, after a time, changes in the membranes, such that it allows the passage of pathogenic organisms. Putrefaction, and infection of an unruptured sac may take place with either a living or a dead fetus. Germs and toxins acting on the membranes produce changes in them, such that the poisons are absorbed by the mother, and she experiences fever and intoxication. Toxins pass through more rapidly than bacteria. Emptying of the uterus puts an end to the dangers of the mother.—*Annali di Ostetricia e Ginecologia.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ADVANCED THERAPEUTICS IN A GOVERNOR'S MESSAGE.

IN a recent annual message, characterized by the Chicago papers as of wider scope than ever addressed to a legislature, Governor Deneen of Illinois devotes a larger portion to medical matters than is customary in such documents. "To elevate the public charity service to the level of modern efficiency," Governor Deneen makes many wise recommendations which evidence his broad grasp and intelligent understanding of the humane interest in the subject. It is exceedingly heartening to the medical profession, which has long and persistently labored, despite discouragement and lack of sympathy on the part of statesmen and politicians, to elevate the public medical service, to note the recommendations of this progressive Governor of Illinois. "In discussing the improvement in medical administration and treatment," he writes, "I desire to call attention to the fact that medical and nursing science has advanced by leaps and bounds during the past twenty-five years."

"Drugless treatment, work, recreation, and amusement, are prescribed by physicians just as drugs are prescribed" in the psychopathic institute at Kankakee, Ill., and its branches in each State hospital, "where local clinics are conducted to which physicians are invited. These," writes the governor, "will be used in an effort to learn new things about mental and nervous disorders, and perhaps to discover new remedies which will benefit the whole human family." The governor evidently regards hydrotherapy as one of the latter, inasmuch as he dwells upon it as follows: "For hopeful cases the water treatment, known as hydrotherapy, already has been installed in some of the institutions, and I hope will be extended specially to others. By means of this treatment many incipient and acute cases of insanity are cured, and the patients, instead of becoming lifelong inmates of hospitals, and placing a burden upon the State, return to their homes as productive members of society. The installation of the bath treatment costs from $3,000 to $40,000 for each institution, according to the number of acute curable cases admitted. I heartily favor the extension of the system of treatment to all State hospitals receiving acute cases."

The conclusions of this humane layman's message to his Legislature are doubtless based upon reports of his medical advisers; they verify the published observations of the late George W. Foster, who made the first systematic and extensive observations in the Government (Elizabeth) Hospital at Washington, and of the late Dr. Dent of Ward's Island Hospitals and others who have reported striking results in mental and nervous disorders. If the latter are obtained at Kankakee by "prescribing water," as the Governor says, "just as drugs are prescribed," the question obtrudes itself, Why are medical students not instructed in the prescription of water as in the prescription of drugs? Why does the young physician, as Kussmaul said years ago in his official report on improvements in medical education, feel humiliated when in practice he finds himself displaced by the empiric, because he is less capable in applying hydrotherapy, than in using his hypodermic syringe? In the lectures on therapeutics and in the leading textbooks on Materia Medica and Therapeutics, the application of water in disease receives but scant attention. Indeed it were far better for suffering humanity if hydrotherapy were entirely omitted, for these works do not discuss water as they do drugs, and their description of technique of water application is as faulty as is the rationale, if compared with special works on this subject. The clinical results cannot fail to be disappointing, when based upon faulty teaching, which appears to be reproduced by successive authors. In one of the most popular textbooks, one-half of a page, devoted to the drip sheet, is occupied by an imperfect illustration, and the remainder contains a faulty description of its technique. In a recent work on Prophylaxis and Treatment of Diseases, hydrotherapy is mentioned in the treatment of two-thirds of the diseases discussed, but the methods advocated testify to the otherwise well-informed author's unfamiliarity with the teachings of the men who have made hydrotherapy a life study and practice. These works, written by progressive and otherwise capable teachers, reflect the status of instruction in our schools.

Is it not high time for American medical schools to follow the example of the continental universities and establish chairs, from which the principles of hydrotherapy may be taught, and clinics in which its practice may be learned? It is to be hoped that the example of Columbia University, which inaugurated a course of lectures on hydrotherapy last spring, may be emulated by other progressive medical schools.

THE NAVAL MEDICAL SERVICE.

IN the interesting report, recently issued, of the Surgeon-General of the U. S. Navy for the fiscal year ending June 30, 1906, considerable space is devoted to the consideration of the needs of the Medical Corps. For reasons not far to seek, the naval medical service has never, at least not for many years, been popular among young medical men, the result being that there are always many vacancies in the Corps which it is impossible to fill. These vacancies numbered 44 at the close of the fiscal year in 1906, and this notwithstanding that a medical officer was sent to the leading medical colleges of the East in the spring of last year to address the fourth year students and set before them the advantages of the naval medical service.

The attractions of the service are many. The young man, without ties, who enters the Navy leads

a pleasant life with congenial companions; he has an assured social position; opportunity is afforded him of seeing much of the world, at least of that part of it bordering the sea; he has enough to do to keep him occupied, yet the work is in general not arduous, and while on shore duty ample opportunity is afforded him of prosecuting original research; and finally, his pay, for the early years at least, is greater than he could naturally expect to earn in practice, and he is assured a certain, though moderate, income for life. The disadvantages are that promotion is slow, much slower than in the medical services of the Army or of the Public Health and Marine-Hospital Service; the medical officers of the Navy, unlike his colleagues in the other services, is unable to retire on half pay after thirty years' service; and finally, the naval medical officer, unlike the "Admiral of the Queen's Navie," is obliged to go to sea, and, indeed, to spend much of his life in sea service. To the man who is married, or who hopes to marry, this is a very serious fact. The wife and family cannot go to sea with him. If he is ordered to some definite station, such as the Mediterranean or the Philippines, his family can follow him and take lodgings in some seaport where his ship is likely to be the greater part of the time, and he can see them occasionally. But they may have made the journey at great expense and have just settled down in the foreign city, when orders come for the surgeon to return home or go to some other station at the other end of the world, and then comes another long separation and another tedious and expensive journey for the wife and children. This is the most serious objection to a naval life, whether in the medical corps or the line, and it is one which is inseparable from the service. To the young man with no thought of marrying, it may have little weight, but one who thinks of the future and who is not sure of immunity against the *Bacillus matrimonii* will be apt to hesitate before shutting the door against wedded happiness.

The other disadvantages of the service are not irremediable, and Admiral Rixey makes several recommendations in his report looking to an improvement in these respects. At the present promotion, except to the lower grade of passed assistant surgeon, is practically at a standstill. There will be a yearly average of only three retirements for age for the next twenty-two years, or 63 in all, and deaths and voluntary resignations will not more than double this number. Congress has relieved in a measure the stagnation in the line by providing for voluntary retirement in the grades of captain, commander, and lieutenant-commander in order to create an average number of vacancies in the upper grades, and for retirement by selection in these grades in case the voluntary retirements are not sufficient to cause the required number of vacancies. But the bill providing for promotion in the line did not include the medical corps. In order to remedy this Admiral Rixey recommends an increase in the number of surgeons, medical inspectors, and medical directors, thus creating a corresponding number of vacancies in the lower grades and giving a chance for promotion. He also urges that provision be made for voluntary retirement in the medical corps, such as exists in the Army and Marine Corps and in the line in the Navy. If this were done, promotion would be more rapid, and the young man who enters the medical service of the Navy to-day would not be kept indefinitely in the grade of passed assistant surgeon with no prospect of rising higher until his hair is thin and gray and his heart made sick by deferred hope.

The suggestions of the Surgeon-General are modest enough, and the necessities of the service demand that they should receive recognition by Congress. The disadvantages of the service inseparable from the necessary sea-duty are great and they can be counterbalanced only by making the prizes greater. Instead of being slow, promotion in the Medical Corps of the Navy should be more rapid than in the Army or Marine-Hospital Service, and the pay in the corresponding ranks should be greater than in the other services. It is only by offering greater inducements that those contemplating entering one of the medical services can be attracted to the Navy in sufficient numbers to keep the service up to the necessary point of efficiency.

TUBERCULOSIS AND MILK.

The sensational declaration made by Robert Koch, at the London Tuberculosis Congress a few years ago, that there is no danger to man from the flesh or milk of tuberculous cattle, fortunately never obtained wide credence in English-speaking countries and indeed was speedily discredited in his own country. Nevertheless, the weight of his authority and the extended publicity given to his utterances by the public press tended to allay in a measure the very salutary fear of the consumption of milk from diseased cows. The health authorities never relaxed their efforts to exterminate the disease among dairy herds, but individuals here and there have raised their voices against what they termed the useless sacrifice of valuable cattle, basing their protests on the injudicious statements of Koch. It is well, therefore, that the subject has continued to receive attention at the hands of experimenters here and abroad, until overwhelming proof has been accumulated that Koch was as wrong as wrong can be.

The latest evidence in this direction is contained in a recently published Bulletin of the Bureau of Animal Industry of the U. S. Department of Agriculture. The Bulletin embodies a report of experiments that have been conducted by Dr. E. C. Schroeder and W. E. Cotton of the experiment station of the Bureau of Animal Industry. They have undertaken experiments for the purpose of testing the susceptibility of the lung to infection with tubercle bacilli, and have most conclusively demonstrated that pulmonary tuberculosis may be caused, no matter through what channel the bacilli gain entrance to the body. These experimenters claim, indeed, as a result of their experiments, that the lung is the part most frequently affected, even when the infectious material is ingested with food. They demonstrate that fresh tuberculous material, such as is contained in the milk of diseased cows, induces tuberculosis more quickly and more certainly than the dried bacilli, whether inhaled or ingested with food. A tuberculosis [illegible] than the [illegible] terial from cattle has the highest [illegible] all

tested species of the mammalian kingdom, to which man anatomically and physiologically belongs, and tuberculous material from man has a lower virulence."

The Bulletin concludes that there is "no more active agent than the tuberculous cow for the increase of tuberculosis among animals and its persistence among men." This statement is strong, but it seems to be based upon the results of careful experiments, and if it is not exaggerated its significance can hardly be overestimated when we consider not only the wide consumption of milk by children and adults, in health and disease, but also the fact that milk forms one of the staple articles of diet for the tuberculous.

Defective Death Certificates.

Attention is drawn in the Bulletin of the New York State Department of Health for December, 1906, to the unsatisfactory returns often made by physicians regarding the cause of death. In many cases the physician neglects to supply the information called for regarding the occupation, conjugal conditions, birthplace, and birthplace of the parents of the decedent. This is a seemingly small matter, yet it is of importance as regards the accuracy of the statistics. The most serious defects, however, are in respect of the cause of death. The signer of the certificate often contents himself with a general statement, such as "debility," "inanition," "exhaustion," or "old age," without specifying to what the debility or the exhaustion was due, or noting the disease which caused death in the aged—for unfortunately death from simple slowing down of the vital processes unaided by defect in some vital organ is extremely rare. Other indefinite terms employed are abscess, convulsions, fever, paralysis, spinal disease, heart disease, tumor, etc., no qualification being given as to the location of the abscess or tumor, the nature of the fever, the cause of the convulsions, or the particular disease of the spinal cord or of the heart which existed. The Bulletin states that there has been a marked improvement in these respects in recent years, but there are still many defective certificates returned. With a view to obtaining accuracy in the records of the Department notice is given that all officers designated to receive death certificates and issue burial permits are instructed to refuse to accept any certificate which is defective in the ways above mentioned, which is not written throughout in black ink, which is mutilated or illegible, or in which there is any erasure, interlining, correction, or alteration of anything printed or written on the certificate. Apart from the fact that a properly filled certificate is essential if accurate records are to be kept, it is to the interest of the physician himself to perform this work properly, for the records are open at all times to the public, and are frequently consulted, and some of the returns would be looked upon with shame by the physicians issuing them in case they were made public, as they might be under certain circumstances. If the physician whose unpleasant duty it is to fill out a death certificate always performed his task with care and conscientiousness, he would have the satisfaction of knowing that he had contributed his part to the perfection of the statistical records, and he might also be spared the chagrin of having his unsatisfactory diagnosis made public, or of having the certificate returned to him for correction by the health officer.

Hematocolpos and Hematometra.

It is not the existence of either one or the other of these conditions that is so extremely rare, but their combination is a very unusual clinical fact. A. Deletrez, in the *Annales de Gynécologie et d'Obstétrique* for December, 1906, gives a most interesting account of a case of this nature in which he operated in July, 1906. The patient was a girl eighteen years old, without any hereditary history relating in any way to the anomaly which she presented. Menstruation had never taken place. For four years the patient had suffered pain every month in the hypogastric, iliac, and mammary regions. The pain had been so severe that the patient had been obliged to rest in bed for several days every month during the attack. Within the last three or four months before operation the abdomen had increased distinctly in volume. The pain was almost continuous with periodical exacerbations. The general condition was very satisfactory, micturition was normal, and constipation was habitual. Abdominal palpation determined the existence of a median tumor, globular, slightly movable, and extending up beyond the umbilicus. Examination of the external genitals demonstrated an imperforate vagina, but with no projection of the hymen. The urinary meatus was edematous and varicose. Vesical catheterism indicated that the bladder was directed toward the right. Incision of the hymen did not result in any discharge, but incision of a membrane obstructing the lower third of the vagina was followed by a discharge of about three liters of a viscous chocolate-colored liquid. At the same time the abdomen decreased in size, and the uterus decreased progressively in volume. The opening was dilated by the aid of the fingers, and the operator was able to reach the cervix, which was softened and easily allowed the introduction of the first phalanx of the first finger. Dilatation was practised for several days. The first menstruation was established four weeks after intervention, and since that time this function has been regular. The involution of the uterus was complete. Hematocolpos is almost always congenital. It develops slowly. When hematocolpos extends to the uterus and produces hematometra, the blood may invade the tubes and give rise to a hematosalpinx, or it may overflow into the peritoneal cavity and determine phenomena which are grave, sometimes even resulting in death.

The Technique of Spinal Anesthesia.

While spinal anesthesia does not seem to be altogether justifying the oftentimes extravagant enthusiasm with which it was taken up during the earlier years of its history, many surgeons believe that it has a well-defined province of utility. An interesting observation which if it turns out to be well founded should serve to reduce to a considerable extent the dangers, if not the uncertainties, of the method has been recently published by Hofmann in the *Münchener medizinische Wochenschrift* of December 25, 1906. This operator found that by reducing the amount of anesthetic drug used, but increasing the amount of fluid injected, the area of anesthesia extended much higher than was the case under the ordinary conditions. According to the anesthetic used, the solution is made up in a strength of from [illegible] per cent., with one drop of 1-1000 adrenalin solution to each c.c., and of this solution from 5 to 7 c.c. is injected. The escape of cerebrospinal fluid is prevented as much as possible, and no attempt is made to extend the area of anesthesia by elevating

the pelvis. Hofmann states that by observing this technique the results obtained were more satisfactory than when smaller amounts of fluid containing larger doses of the anesthetic were used, though he admits that occasional failures still occurred. Although he uses the method not infrequently, he believes that spinal anesthesia is usually more satisfactory to the operator than to the patient, particularly if the peritoneum is attacked, and in this connection he relates the experience of a medical man on whom he performed a hernia operation under spinal anesthesia. The manipulations of the hernial sac and stretching of the parietal peritoneum occasioned severe pain, and the patient, who had already on a previous occasion been subjected to anesthesia by inhalation, stated that he should certainly prefer this method in case another operation should ever become necessary.

Milk as a Hemostatic.

The novel suggestion has been made that as milk contains several constituents which are prescribed as remedies in hemorrhage, the substance itself be used for this purpose. Among these ingredients are iron, phosphoric, citric, and sulphuric acids, the lime salts, and albumin. The calcium salts are an important element in coagulation of the blood and the albuminoids have a tendency to increase the fibrinogen. In a recent article in the *Therapeutische Monatshefte*, 1906, No. 10, Solt states how his attention was attracted to the value of milk in this relation. A young girl flowed very profusely during her first menstrual period, and by none of the usual means was it possible to check the hemorrhage. She became comatose and vomited constantly. A nutrient enema was given consisting of milk with only a little salt added and the bleeding ceased. Some years ago Aronsohn reported good success with milk enemas in hemoptysis, and animated by this and his own success the writer continued the use of the agent in a variety of bleeding cases. In a male patient who suffered from severe gastric hemorrhage as the result of ulcer of the stomach, the bleeding was quickly checked by the rectal injection of a liter of milk which was freely salted. In postpartum uterine hemorrhages Solt also employed these milk injections with good results, as well as during the climacteric when every other remedy had failed. It is recommended that the injections be given with the patient on the side so that the fluid can be easily retained, and its temperature should be that of the body. The effect seems to be favored if a bulb syringe is used, as the interrupted stream, particularly in uterine hemorrhage, produces a kind of vibratory pressure on the organ. Solt's suggestion is certainly interesting, and as it can be readily applied, no harm can come from further trials of it.

The Treatment of Tuberculosis.

The Committee on the Prevention of Tuberculosis of the Charity Organization Society points out the great value of the tuberculosis exhibition as a means of educating the people in regard to the prophylaxis and treatment of this disease. Starting with an exhibition held in New York City by the National Association for the Study and Prevention of Tuberculosis and the local committee, there have been held in New York City and other places fourteen tuberculosis exhibitions, which have been visited by 300,000 persons. These exhibitions have been devised to show in a popular way that tuberculosis is a communicable disease, that it is a curable disease, and that it is a preventable disease. This is demonstrated by lectures, by photographs of sanatoria, hospitals, and dispensaries for the treatment and cure of tuberculosis, by many models of tenement houses, sleeping shacks, and "lean-tos," by diagrams and charts showing the prevalence of the disease in the population at large, and especially in certain sections and in certain occupations, by pathological specimens of infected lungs and other organs of the body. The whole subject is presented in such a way as to carry conviction to the layman, and to lead to a realization that effort to stamp out the disease is worth while. An evidence of the popular interest that has been excited in the subject is the fact that at the exhibition held in the tenement districts of New York City there was an attendance of 94,000 persons.

China's Attempted Reform.

In view of their expected losses on the enormous stocks of opium in bond at Shanghai and Hongkong, British merchants are seeking indemnity from the Chinese Government for losses they may sustain under the operation of the new anti-opium law. It is estimated that the export of opium from India amounts to 75,000 chests annually, valued at $38,950,000, and this business will be entirely lost in a few years if the law is strictly enforced. The regulations issued on November 21, 1906, as the result of a decree of the Emperor of China and the Council of State, contain the following provisions: The cultivation of the poppy and the use of opium must cease in ten years. No new ground can be placed under cultivation, and the ground under cultivation now must be reduced one-tenth every year, under penalty of confiscation. All persons who use opium must be registered, and so must the quantity each uses. Only a registered person can buy opium. No one may begin the use of opium after the issuance of the regulations. Shops that sell opium are to be closed gradually. All opium dens are to be closed within six months. The authorities must set the example of discontinuing the use of the drug. Those who find that they cannot discontinue within six months will be deprived of rank and office. Teachers, scholars, soldiers, and sailors are allowed three months in which to discontinue. We should not regard as unduly sceptical one who might doubt the practicability of the enforcement of such a Draconic law as this. It has been the experience of Western nations that legislative prohibition of the sale of alcoholic beverages may restrict, but does not wholly prevent their use or abuse, and it is not likely that greater success will attend China's effort to overcome a national vice in as short a time.

Medical News in the Daily Press.

In the *Journal of the American Medical Association* of January 5 is a letter with the above heading from Mr. C. S. N. Hallberg, a member of the Council on Pharmacy and Chemistry, calling to account two of the Chicago daily papers for their cabled extract of a symposium on influenza, published in the London *Practitioner* for January, 1907. He takes special exception to the statement that Sir William Broadbent found quinine of service, and that his normal prescription was "one drachm of ammoniated quinine and two drachms of liquor ammoniæ acetatis every hour for three hours, and then every four hours." The newspapers were right, however, for

that is the prescription exactly as Sir William Broadbent wrote it, or at least as the *Practitioner* printed it, and the writer's wrath was misdirected. Indeed the newspapers are deserving of praise in this instance for their extreme accuracy, something which is not usually characteristic of press reports of medical matters, and which, being so rare, is worthy of the prominence given to it by the Councilor's premature reprobation. To an Englishman the statement is perfectly intelligible, for of course Sir William meant the ammoniated tincture of quinine of the British Pharmacopœia, which Mr. Hallberg declares to contain "one grain of quinine sulphate to the fluidrachm in diluted alcohol with a little ammonia water." This is not the exact formula, but it is probably as nearly correct as the newspapers would have got it.

News of the Week.

The Society for the Prevention of Unnecessary Noise was organized on Monday of this week at a meeting attended by a number of prominent physicians, hospital superintendents, and others interested in the welfare of the citizens of this town. Mrs. Isaac L. Rice was unanimously elected president of the society and Mr. John J. Rooney secretary. A constitution was adopted and an appeal to the public, setting forth the objects of the society and the need of its existence, was read and approved. Membership in the society is open to all in sympathy with its object. The annual dues for active members are $2, and there is no initiation fee. Other classes of membership are the founders, who pay $100, patrons $50, and life members $25.

The Sewage Disposal Problem.—The United States Geological Survey has just issued, under the title of "Water Supply and Irrigation Paper No. 185," a valuable contribution to the literature on the disposal and purification of sewage. The investigations described in this publication were made at the Sanitary Research Laboratory and Sewage Experiment Station of the Massachusetts Institute of Technology, under the direction of Prof. William T. Sedgwick. The results of this work, and the practical conclusions that have been drawn, are by no means applicable merely to large cities, but contain lessons of practical value to all communities having to deal with the ever-present sewage disposal problem. The description of the experiments is preceded by a historical review of the whole sewage disposal problem, from its origin up to the present time. The paper may be obtained by application to the Director of the Geological Survey, Washington, D. C.

Typhoid Fever.—The number of new cases of typhoid fever in Scranton and vicinity is diminishing, and in three days recently the total number of new cases reported was twenty-five, which is a great improvement. The total number of cases is given as 1,084, with 168 deaths. Pittsburg is also suffering severely from the disease, and there has been a marked increase in the number of cases of typhoid fever in Philadelphia, the majority occurring in sections not yet supplied with filtered water. Two hundred and fifty-two cases were reported for the week ended January 14. There were more than 9,000 cases during the year 1906, with upward of 1,000 deaths.

Food and Drug Inspectors Needed.—The Civil Service Commission has issued notice of a general examination on February 5 for the purpose of obtaining a list of persons qualified for appointment as inspectors and chemists in the Department of Agriculture. The examinations are limited to men, and the salaries range from $2,000 to $3,000 per annum. These positions are made necessary by the large inspection service required by the enforcement of the Pure Food and Drug Act, which went into effect on January 1.

Leprosy in Russia.—The Russian Government is said to be making active efforts to resist the spread of leprosy in the Baltic provinces, where the disease is very common, especially among the Lettish population. As one means of repressing the disease a society for the cure of leprosy has been formed at Dorpat, and sanatoria have been built. Doctors have been sent out to travel through the country to search out persons suffering from the disease, but they have met with great difficulties, as the people refuse to submit to examination or to avail themselves of the facilities offered for treatment. These official investigations, however, have shown what immense strides the disease has made. The number of lepers in Esthonia alone is reported as 5,000, distributed in various areas.

A Lacteal Fluid from Beans.—A Japanese, Dr. Kalayama, is reported to have devised a method for preparing milk-like fluid from soy beans that can be condensed and produced at a far less cost than cow's milk. The bean juice consists of 92.5 per cent. water, 3.02 protein, 2.16 fat, 0.03 fiber, 1.88 other nonnitrogenous substances, and 0.41 ash. To the juice the inventor adds a little sugar and potassium phosphate, and then condenses the mixture. The milk thus prepared is of a yellowish color, and is pleasant to the palate, tasting somewhat like cow's milk, with a slight flavor of soy beans.

The Army Canteen.—A movement intended to aid in the restoration of the army canteen has been started by a number of Washington, D. C., women. They have formed a society to be known as the Army Canteen Club, and have taken steps to form similar clubs in Chicago, Cincinnati, and several places in New York State. These ladies hold that the restoration of the army canteen will be in the interest of genuine practical temperance, and against what they designate as "the mistaken theory of temperance."

Influenza in Baltimore.—According to the estimates of the Baltimore Health Department over 100,000 persons have been affected by the prevalent epidemic of grip in that city.

Scarlet Fever in Boston.—A mild epidemic of scarlet fever is prevalent in Boston and its environs, and in one day recently fifty new cases of the disease were reported to the Board of Health.

The Fenger Memorial Association was incorporated in Chicago on December 26. It is the plan of the association to establish a fund in memory of the late Dr. Christian Fenger, for the purpose of encouraging original research in bacteriology, surgery, and pathology. Annual cash prizes are to be awarded. The incorporators are Drs. Frank Billings, George W. Webster, John B. Murphy, Wm. T. Belfield, Ludwig Hektoen, Carl Doepfner, and Charles S. Bacon.

An Inquiry into the "Poison Squad" Tests.—A resolution has been introduced into the House of Representatives asking the Secretary of Agriculture to inform the House by what authority the food tests by Dr. Wiley, Chief of the Bureau of Chemistry, and his "poison squad" were held. The resolution also seeks to ascertain whether or not these

tests were responsible for the death of a member of the group of young men who ate the experimental food. The physicians who attended the young man have stated that his death was due to pulmonary tuberculosis, but his mother alleges that the disease was induced by the so-called poisoned food. One of the statements made by the mother in her charge is that on one occasion her son let fall one of the capsules to be added to the food he was to take, and there was so much boric acid in it that "it took the paint off the floor!"

Red Cross Aid to China.—Plans are being made by the Red Cross for the regular shipment to China of supplies for the relief of famine sufferers. Three hundred tons of flour have been ordered through the Commissary-General of the Army, and will be shipped to Shanghai.

Premature Senility.—An unusual instance of the untimely inset of senility is reported from Minneapolis, Minn. A boy of eleven years who has just died in the City Hospital is stated to have had organs corresponding in their condition to those ordinarily seen at an advanced age. It is alleged that when the child was six years old his hair began to turn gray, his eyesight began to fail, and he walked with the deliberate care of a person well advanced in years. As a very young child he was exceptionally bright, but his mental faculties had been failing for the last two years.

Cold Cars.—Health Commissioner Whalen, of Chicago has forced the street car officials to comply with the city ordinance requiring that street cars be heated to a certain temperature.

Flat Car Wheels Removed.—The Health Department has announced that since the investigation of the flat car wheel nuisance was begun a few weeks ago, 1,568 such wheels have been removed by the New York City Railway Company.

Dr. Wm. H. Taylor, for forty years obstetrician to the Cincinnati Hospital, has resigned, and been succeeded by Dr. Wm. D. Porter.

Gifts to Hospitals.—By the will of the late Adam Weber, recently filed in the Surrogate's office, the Isabella Heimath is to receive $1,000, and the German Hospital $500. By the will of Louis C. Vanuexem the sum of $25,000 has been devised to Jefferson Hospital of Philadelphia. In accordance with the terms of the will of Miss Harriet Richards, who died at Philadelphia ten years ago, the sum of $5,000 has been donated to St. Joseph's Hospital and to St. Mary's Hospital, for the endowment of free beds. Mr. Bernard M. Baruch has donated $5,000 for a bed in the J. Hood Wright Memorial Hospital, to commemorate his father's long active service to that institution. Dr. Baruch has resigned as attending physician to the hospital, and has been placed on the consulting staff. Mr. Frederick G. Bourne of New York has presented to the Nassau, L. I., Hospital a dispensary and laboratory building, which it is estimated will cost about $10,000. In connection with Mr. Bourne's donation, a Mr. Bird, who formerly lived at Garden City, has presented as a memorial to his wife, Mabel Thorne Bird, $2,000 for an operating room, to be used in connection with the dispensary. A wing on each side of the hospital is now in course of erection, and will be completed March 1. This addition was the gift of Mrs. William K. Vanderbilt, Jr.

Mt. Sinai Hospital.—At the recent meeting of the managers of this hospital Mr. Isaac Wallach resigned the presidency, after having served three years as director, seventeen years as vice-president, and ten years as president of the institution. The secretary's report showed that during the past year 10,543 applicants had been admitted to the hospital. Of these 4,713 were admitted free, 647 were private patients, 249 were private patients in public wards, 622 were paid patients in public wards, while the consultations in the dispensary numbered 158,295 for the year. The total disbursement for the year for the support of the hospital and dispensary was $356,722.63, against receipts of $347,859.84. The deficit of about $9,000 was paid from cash in hand.

The Sixth International Dermatological Congress will be held in this city September 9 to 14, 1907, at the Academy of Medicine. The meetings will be open to the public, and any member of the medical profession in good standing may become a member of the Congress by registering with the Secretary-General at the time of the meeting or previously. The fee for membership is five dollars, payable to the Secretary-General in New York, or to the foreign secretaries. Papers may be presented in writing in the English, French, German, Spanish, or Italian languages, and may be discussed in the language most familiar to the speaker. The Congress will be held under the presidency of Dr. James C. White of Boston, and Dr. John A. Fordyce of 80 West 40th street, New York City, is the Secretary-General. The first Congress of this kind met in Paris in 1880, and since that time at intervals of about three years it has been held in Vienna, London, Paris, and Berlin.

American International Congress on Tuberculosis.—At the session of this organization recently held in this city the following were elected as officers for 1907: *President*, Dr. Clifford H. Irion, New Orleans, La.; *Vice-Presidents*, Dr. Geo. [illegible], Texas, Dr. Thos. Bassett Keys, Chicago, Ill., Dr. Francis T. B. Fast, Las Vegas, N. M., Dr. W. F. Drewry, Petersburg, Va., Dr. I. W. McDonald, Fairmont, W. Va.; *Secretary* and *Treasurer*, Dr. M. M. Smith, Austin, Texas.

Missoula County (Mont.) Medical Society.—At the recent meeting of this society officers were elected as follows: *President*, Dr. E. W. Spottswood; *Vice-President*, Dr. E. F. Dodds; *Secretary-Treasurer*, Dr. H. B. Farnsworth.

New Britain (Conn.) Medical Society.—The following were elected officers by this society at a meeting held on January 1: *President*, Dr. T. G. Wright; *Vice-President*, Dr. S. W. Irving; *Secretary-Treasurer*, Dr. Arvid Anderson.

Muskegon Oceana Counties (Mich.) Medical Association.—Officers were elected as follows at the meeting of this society, held at Muskegon on January 4: *President*, Dr. John F. Denslow; *Vice-President*, Dr. W. W. L. Griffin of Shelby; *Secretary*, Dr. Vernon A. Chapman; *Treasurer*, Dr. Jacob J. Oosting.

Millers River (Mass.) Medical Society.—At the annual meeting of this society, held on January 1, the following officers were elected: *President*, Dr. E. F. Mullins of Baldwinville; *Vice-President*, Dr. A. C. Leach of Orange; *Secretary-Treasurer*, Dr. George L. Perry of Athol.

Etowah (Ala.) Medical Association.—The annual election of officers of this society, held on January 1, resulted as follows: *President*, Dr. E. T. Camp, Gadsden; *Vice-President*, Dr. J. P. Stewart, Attalla; *Secretary*, Dr. Aker Gadsden.

Obituary Notes.—Dr. EDWARD GILMAN BRYANT of this city died on January 8 at the age of thirty-nine years. He was born in Boston, and was a graduate of Harvard University. After serving for a time as physician to the port of Boston he came to this city, and for some years had been connected with the Willard Parker Hospital.

Dr. EDMUND C. RICKERTS of Brooklyn died on January 9 in his fifty-third year. He was graduated from the College of Physicians and Surgeons about twenty years ago.

Dr. SIMON I. GROOT of Washington, D. C., died on January 8 at the age of eighty-nine years. He was one of the founders of the Homeopathic Hospital in Washington, and was one of the oldest practitioners of the city.

Dr. ALFONS MUELER of this city died on January 9 at the age of forty-five years. A few hours before his death he made two visits on patients suffering from pneumonia, although he was himself the victim of the same disease. He was graduated from the University of Halle in 1886.

Dr. PHILIP E. JOHNSON, recently of this city, died suddenly in Portland, Ore., on January 8. Dr. Johnson was graduated from Columbia University in the class of 1892, and had settled in Portland a few months ago.

Dr. E. O. BENNETT of Detroit, Mich., is dead at the age of seventy years. He had served as a surgeon during the Civil War, and for nineteen years was superintendent of the County Asylum at Eloise. He resigned this position in 1900 to become surgeon of the Michigan Soldiers' Home at Grand Rapids, but was forced by failing health to give up active work in 1903.

Dr. H. C. BERGER of Milwaukee, Wis., died suddenly of heart disease on January 2. He was a native of Milwaukee, and had practised in that city since 1891, when he was graduated from Rush Medical College, Chicago.

Dr. JULIUS CESAR LEHARDY of Savannah, Ga., died on January 7 of nephritis, at the age of seventy-six years. He was born in Belgium, and after receiving a classical and scientific education in Brussels and Paris completed his medical studies in the Jefferson Medical College of Philadelphia, from which he was graduated in 1855. He commenced to practise near Rome, Ga., but soon after accepted the chair of chemistry in the Oglethorpe Medical College, Savannah. Dr. Lehardy served as a volunteer surgeon in the confederate army through the Civil War, and had occupied numerous official positions, including the presidency of the Georgia State Medical Society and the medical directorship of the Citizens's Sanitary Association of Savannah, an organization which did much to place the sanitation of the city on its present footing.

Dr. GILBERT L. ROSE of Decatur, Mich., died on January 5, after an illness of five days. He was born in Lakeport County, Ind., in 1853, and received his medical education in the Cincinnati College of Medicine. He had practised in Decatur for thirty-one years.

Dr. WILLIAM H. MYERS of Fort Wayne, Ind., died on January 5 at the age of eighty years. He was a graduate of the Jefferson Medical College of Philadelphia, in the class of 1855, and had practised in northwestern Indiana ever since. He was said to have been the first to perform cesarean section in that part of the State.

Dr. F. A. WAGGONER of Hamilton, Ill., died on January 1 in Boulder, Col., at the age of thirty-five years. He was a graduate of Keokuk Medical College, and had practised for some years in Hamilton.

Dr. W. MURRAY JOHNSTON of Los Angeles, Cal., died on December 29 at an advanced age. Dr. Johnston was a native of Maine, and a graduate of the University of Michigan. He had practised in Kansas and Arizona before removing to Los Angeles seventeen years ago.

Dr. HERMAN STEIN of Chicago died on December 25, at the age of eighty years. He was born in Germany, and received his education at the University of Heidelberg. He came to this country together with Carl Schurz as a political refugee, and for a time practised medicine in Cincinnati, later on settling in St. Louis. During the Civil War he was a major in General Siegel's regiment. Ten years ago he retired from active practice, and went to Chicago.

Dr. GUSTAVE A. BACHMAN died at Philadelphia on January 8, at the age of sixty-four years. He was graduated from Jefferson Medical College in the class of 1874.

Dr. BENJAMIN PITT JOHNSON, surgeon of the Cunarder *Coronia* died at Liverpool on December 30, of pneumonia, at the age of forty-five years. Dr. Johnson had been in the service of the company for sixteen years, and had been surgeon of the *Umbria*, *Etruria*, and *Coronia*. He was a native of Ludlow, England.

Dr. DANIEL S. ADAMS of Manchester, N. H., died on January 11 at the age of sixty years. He was born in Lockport, N. Y., and had practised in Manchester since 1872. He was at one time president of the New Hampshire Medical Society.

Correspondence.

TRYPSIN FOR THE CURE OF CANCER.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Dr. E. W. Peet, in your last issue, under the above caption, lays stress upon the value of "facts" insofar as relates to a preceding article of mine, also published by you under the same title. Regretfully, I feel forced to make answer to this communication, for I well know that, unanswered, misapprehensions and trivialities grow to larger proportions. It seems to me also that a personal attack of this nature is entirely uncalled for.

As to facts in which I am alleged to have been remiss, the first is that Dr. Peet referred a certain case to me. This statement was indeed an inadvertence on my part. I was misled by the fact that Dr. Peet met the patient twice at my office during her early visits, and I believed, therefore, that she was acting with his approval. Hence, as a matter of professional courtesy, I mentioned his name.

As to Dr. Peet's second fact, namely, that he had closely attended the patient at her home during the seven weeks she had been under treatment by *x*-ray given by me; that he had made "very careful and frequent notes of the case;" that his "notes do not at all agree with the report made by Dr. Morton in his article," which latter as regards the results of *x*-ray reported in Case I. is further termed "optimistic," "beyond comprehension, etc., etc., I submit the following letter, written to me by the patient:

"New York, Jan. 15, 1907. Dear Dr. Morton: In reference to the statement of Dr. E. W. Peet, published in the MEDICAL RECORD of January 12, 1907, where he says, 'I continued to attend the patient at her home and made very careful and frequent notes of the progress of the case while she was under treatment,' and further says 'that at all times during these seven weeks I was able to make out enlarged axillary glands and detect lymphatic infection by palpation.' I think it my duty to say to you that at no time during the seven weeks referred to was I aware that Dr. Peet was in attendance upon me at my home or elsewhere, nor do I know of a single instance during that time when he examined me, except on two occasions when, at his own instance, he came to your office when I first was being treated. As a matter of fact, the late President Harper of Chicago University introduced me to you and advised me to take treatment with you. I left my case with you unreservedly. In justice to you I make this simple statement. Believe me, most cordially yours, K. H." The patient's full name is signed to the above letter with her permission to use it, but I have preferred to use her initials as in Case I. of my report

Under the above circumstances, I can hardly see how Dr. Peet arrived at his third fact, namely, that my report of the progress of the case during the seven weeks of *x*-ray treatment was optimistic or otherwise, since according to the patient's statement, supplemented I may add by her mother's, he did not "attend the patient at her home," and did not examine her during this time, except at my office, and in the early stage of treatment. The opportunity for making these careful notes of the results of the *x* ray treatment would seem to have been wanting. The *x*-ray treatment, by the way, was merely mentioned by me in my original article as a part of the remote history of the case. And, as a matter of fact, what bearing has Dr. Peet's criticism upon "trypsin for the cure of cancer?"

WILLIAM J. MORTON, M.D.

A METHOD OF OPERATION ON THE LIP.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In your issue of November 3, 1906, there is an article with the above title, by C. F. Buckley, M.D., of Brooklyn. Although the author does not distinctly claim this to be a new method, it is rather inferred. I trespass upon your time and space to say that I have used the method to control hemorrhage as well as to increase the effect of local anesthesia.

In operating for the removal of an epithelioma of the lip, at the suggestion of my colleague, Dr. J. Herbert Claiborne, I applied two artery forceps at a suitable distance from the proposed lines of incision, to prevent hemorrhage from the coronary arteries, which it most effectually did. This patient was under general anesthesia, and the method, therefore, only had to do with the use of the forceps as a hemostatic.

Now, as to the application of the clamp before the injection of cocaine—this I myself did long ago in an operation for the removal of an epithelioma of the auricle, which I reported to the New York Medical Society. I, however, never made any claim for originality in this connection. The credit for discovering the method belongs to Dr. J. Leonard Corning (Transactions of the Medical Society of the State of New York, 1887, p. 94).

Dr. Buckley says the necessity under which he once was, "of operating entirely alone on a growth involving the lower lip, was the originator of this idea, which has been used successfully since that time." My object is to show that, although the idea was to him original, practically the same method has been employed before.

THOS. R. POOLEY, M.D.

107 MADISON AVENUE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

CHRISTMAS AT THE HOSPITALS—SURGICAL TREATMENT OF NONMALIGNANT GASTRIC ULCERATION—OBITUARY.

LONDON, December 28, 1906.

CHRISTMAS day this year was, so far as weather goes, the most enjoyable for a long period past. Some hours of sunshine, a very slight touch of frost, and very moderate breeze made getting about a pleasure to healthy people. The next day London woke up to a complete transformation; a mantle of snow four to six inches deep covered the ground and impeded locomotion. There was, in fact, hardly any traffic for the first half of the day. The local authorities had been caught napping, and even such quarters as Westminster and Kensington were unprepared, and the snow enforced a rest on horses and men, and with it a delightful silence, as if far from the maddening noise of traffic.

All the hospitals observe Xmas day. There was extra fare for those able to partake, amusements and visits of friends, and all sorts of efforts to cheer sufferers. The children's wards, like the others, were decorated, but the Christmas trees and bountiful distribution of toys were the chief attractions of the little invalids. The supply was unusually large. In many cases the gifts came from one or two generous benefactors; in others there was a subscription among the supporters of the hospital. The decoration of the wards has become a rather expensive feature of the season, and is often done largely at the cost of students and nurses. In some cases this is becoming oppressive, and attempts to restrain the ardor of contributors have been made. This seems especially desirable considering that the work of decorating is mostly done by the same persons.

The surgical treatment of gastric ulcer has occupied the attention of the profession for some time, and it was therefore deemed desirable to hold a full dress debate on it at the Royal Medical and Chirurgical Society. This was opened in November, and has extended over three meetings. Eminent physicians and surgeons stated their opinions and reviewed their experience, and, on the whole, the debate gives the impression of a symposium rather than a discussion. The subject was wide, perhaps too wide, for it was put as the "operative treatment of non-malignant ulcer of the stomach and its complications." Each speaker could, accordingly, deal with the point he felt most interest in, and there was not much opportunity of coming to close grips with divergent views. Nevertheless, the expression of diverse opinions is of no little interest, and a comparison of them will be made by the general practitioner on whom so much responsibility rests for early treatment. There is a general consensus of opinion that perforation calls for immediate operation. But then the question arises as to whether the surgeon should stay his hand when he has closed the opening, or proceed to a further operation. The danger of a second perforation is diminished by a gastroenterostomy which favors the healing of the ulcer and line of sutures, and diminishes the risk of hematemesis. Then arises the question of the patient's condition. Is he able to bear the additional operation? To this one speaker seemed to think the worse he might be the greater the demand for gastroenterostomy, while it offered the only chance in the presence of some complications, e.g., cicatricial stenosis of the pylorus. As to hemorrhage, there is a general agreement that operation should not be performed during an acute attack, which is rarely fatal, not 5 per cent. dying during the hemorrhage. On the other hand, the fatality rises to 60 or 70 per cent. for operation during such attack. This is doubtless because in so many cases the bleeding comes from erosion of the mucous membrane, which in itself has not a high mortality, though the risk of operation is enormous and the chance of benefit slight. The advance of surgery has so greatly diminished its risks that we have become accustomed to statistics which would formerly have been incredible. Mr. Mayo Robson has achieved a mortality of 2 per cent. in early cases of gastric ulcer, and 3 per cent. is not considered unusual. These figures contrast well with the death rate of former hospital admissions; but statistics as to these are very unequal, showing that the conditions must have been very variable. Dr. Hawkins stated that of 550 consecutive cases admitted to St. Thomas' Hospital, the deaths were 13 per cent. Of these 400 were admitted early, and discharged cured, but about 25 per cent. of them relapsed. It was among relapsed cases that nearly all the deaths occurred. The foregoing figures were submitted at the first adjourned meeting. At the next adjournment another series was brought forward by Dr. H. S. French, which may be compared with them, though the conditions were different. At Guy's Hospital up to 1905 only 47 gastrojejunostomies for nonmalignant gastric disease had been performed, and of these 13 were fatal. Excluding 2 cases in which hematemesis was the cause, the mortality was still very high—over 23 per cent. This was partly due to the fact that all had ulcers or their results, and the health of all was very low at the time of operation. These statistics, Dr. French admitted, overstated the risk of gastrojejunostomy, but he did not agree that it was slight in cases of cicatricial stenosis of the pylorus. Of the cases that recovered, 32 per cent. obtained no lasting relief from the operation. As to the after-history of patients who had recovered after operations in Guy's Hospital for perforated ulcers, he found that 30 had recovered, 18 for periods varying between two and eight years, 15 without the recurrence of any gastric symptoms. The other 3 had done badly. In none of these 18 was the gastrojejunostomy done at the time of suturing the ulcer. Mr. Mayo Robson thought these statistics quite dreadful, for there was a failure to relieve symptoms of 32 per cent., with a mortality of 27 per cent. If we had no other statistics we should all leave the meeting saying that patients should no longer be submitted to operation.

The difficulty of drawing conclusions from so prolonged a discussion, ranging over so wide an area, will be understood by every reader, and the general practitioner will perhaps be inclined to fall back on his previous routine, modified by whatever he finds to be an advance distinctly shown. He will say that many cases recover under prolonged rest in bed and strict diet, so that grave operations are not to be risked in most cases, or by other than highly-skilled surgeons, time being in favor of medical treatment. Rectal feeding may give absolute rest to the stomach for a short time, but is admitted to be an inadequate diet for long, and even hematemesis need not prevent nutriment being given by mouth. Six weeks' absolute rest on milk diet, followed by a like period of comparative rest, and that by a further three months careful dieting, was recommended by Mr. Paterson in his Hunterian lectures. If then the patient were not free from definite symptoms, or after an apparent cure had a relapse, he considered an operation was in the best interest of the patients. Out of 143 gastrojejunostomies he found the after-history showed

complete [illegible] 82 per cent. [illegible] operation had been so successful that there was danger of its becoming a fashionable panacea for vague stomach disorders, and so bringing discredit on a most successful treatment in suitable cases. This is an important lesson from the discussion. Another was emphasized by Dr White's warning that when there seemed great danger of death from hemorrhage it should not be said something must be done, for operation might further shorten the short time the patient might survive if left alone.

The death of Dr. William Travers removes a prominent physician from Kensington, in which he had practised since 1866. At first he was a general practitioner, but he attained the position of a consultant among his colleagues of the district. He was physician to the Chelsea Hospital from 1883 to 1894. His health had been failing for some time, but his death was unexpected. He was F.R.C.S., 1864, and M.D. Dub., 1879, and a member of several societies.

Dr. Alfred Sheen, consulting surgeon to the Cardiff Infirmary, died on the 16th inst., in his sixty-eighth year. He studied at Madras College and then at Guy's Hospital, took M. D. Hand., 1862, and M.R.C.S., 1863, D.P.H. Camb., 1888. He wrote "The Workhouse and Its Medical Officer," and was widely known as the author of the "Handy Visiting List and Medical Bookkeeping." In 1880 he contributed to the *Lancet* "Five Years' Surgical Work in Cardiff Infirmary." He leaves a wife and eleven children. His eldest son is a consulting surgeon at Cardiff.

Dr. James Gray, A.M., M.B., etc., of Dundee was found dead in his bed on the 7th inst. He was in his usual health on retiring at night and had visited his patients during the previous day, on which also he had been reappointed assistant surgeon to the Dundee Infirmary. He was assistant professor of surgery at the college and only thirty-four years old.

Deputy Inspector General of Hospitals and Flects R. W. Beaumont died on the 21st inst., aged seventy-eight. He had seen much service and received official recognition of his valuable work with regard to epidemics and disease. He also had the medal for duty well done in the Kaffir war, 1850-2. In 1878 he was senior medical officer in the flagship at the occupation of Cyprus.

OUR LETTER FROM PERU

From Our Special Correspondent.

THE PLAGUE—INFLUENZA—DYSENTERY AND ABSCESS OF THE LIVER—A POISONOUS LIZARD.

AREQUIPA, PERU, November 17, 1906.

There has been no case of bubonic plague in our part of Mollendo for at least six months. Last year it reappeared in the hot months of December, January, and February. In Lima, during the whole year, there have been cases, but, strange to say, the disease has never become epidemic.

August and September may be said to be the months when there is most sickness, especially pneumonia. This year the unhealthy season has been prolonged into October. There have been many cases of influenza, some longer than usual, and a few accompanied by pains in one or more bony prominences of a joint or joints, these pains disappearing slowly.

In one of your Philippine letters your correspondent says that the doctors there find that all cases of abscess of the liver have been preceded by dysentery. That is not our experience, and I see that Dr. Advrozola, a prominent physician of Lima, in a short lecture published in the *Crónica Médica* of that town, says that he has not found that to be invariably the case.

There is a small lizard here and on the coast which is popularly looked upon with great dread. They call it "salamanqueja" (corruption of salamandra?), length, 12 centimeters. So far as I can see, in a preserved specimen, the only difference between it and the common lizards is that the "salamanqueja" has clubbed digits. On the coast it gets the credit of being able to cause death. Here I have never seen such a result. True, most venomous animals are more venomous on the coast than in colder regions. My experience of the effects attributed to the bite is confined to a few cases; but they were all similar. The patient feels as if stung by a wasp. He rubs the part a little and the feeling passes off. I have never seen a case where the animal was caught in the act; it has been found (or not found) later—perhaps next day—in the room. Supposing the bite to have been received in the middle of the day, at night the patient feels an itchy and then a painful burning. There generally are shivering and then fever. I have even seen urticaria. The constitutional symptoms pass off in a few days, but the local affection extends, with itchy, burning, swelling and dusky redness, to about the size of the palm of an ordinary hand. At last a line of demarcation appears. The whole sphacelates, skin, subcutaneous, and adipose tissue exposing the muscles. The wound heals kindly.

Progress of Medical Science.

New York Medical Journal, January 5, 1907.

The Treatment of Tuberculous Glands of the Neck by the X-ray.—Histories of two cases are given by G. S. Leidstein whose conclusions on the general subject are as follows: (1) Such glands should be subjected to x-ray therapy when no softening or caseation has taken place; (2) softening or cascous glands should be referred to the surgeon, and ought not to have x-ray treatment; (3) postoperative x-ray treatment is important if there is any doubt of remaining glands which might be infected; (4) for cosmetic reasons; (5) the size of the gland or glands does not influence the successful result of the treatment.

Formaldehyde in the Disinfection of Rooms.—The paper of M. J. Rosenau is an affirmation of the validity of the work done in this direction by one of the government services. Experiments were conducted in a zinc-lined room. The general conclusion is that considerable volumes of formaldehyde gas are not sufficient to destroy bacteria unless the proper conditions of moisture and temperature are present. The author declares that much of the work upon the germicidal action of formaldehyde gas is contradictory. We know that the usual source of error is that the cultures exposed are sometimes moist and sometimes dry. Moist cultures may be killed with dry formaldehyde gas. But the dry gas does not kill dry cultures. In a general way it may be said that the most serious limitations to the use of formaldehyde gas as a disinfectant are temperature and moisture. The gas cannot be depended on in cold or dry weather. When the temperature is below 60° F., and the relative humidity of the atmosphere is below 65 per cent., the gas frequently fails to kill nonspore bearing organisms.

Albuminuria of Prostatic and Seminal Origin with Reports of Two Cases.—W. G. Young reports two cases. This form of albuminuria seems to occur in cases of prostatic congestion, and mild inflammation in both continent men and men of irregular sexual life. Habitual sexual excitement without gratification is an important factor in bringing about the prostatic and vesicular condition responsible for the albuminuria. Constipation is also a factor in causing and keeping up the condition. The prostates in these cases are found to be tender, slightly enlarged, soft, and edematous. The vesicles are usually tender, often distended, and the posterior urethra very sensitive. An interesting feature in these cases is the fact that the albuminuria is intermittent. It was noted in the author's cases that it was sometimes absent in the morning, but present the same afternoon. The prostate and vesicles are in a relaxed and atonic condition, and the exercise of the day's going about may act like massage, squeezing out their contents into the posterior urethra and bladder. The patient passes his urine in two glasses, but not entirely emptying the bladder. The first two specimens may be clear, or they may show a slight cloudiness, not referable to phosphates or to pus. The prostate and vesicles are then palpated per rectum, and their contents expressed. In these cases the expressed fluid is often sufficient to appear at the meatus. The remainder of the urine is then passed, and is found to be turbid, and often to contain bluish white, translucent, tapioca-like bodies. This urine will be found to give a much more marked reaction for albumin than that passed before massage. The source of the albumin may be the semen or prostatic fluid altered by a transudation into it of serum from the blood, possibly both. The author does not believe that normal prostatic fluid alone when mixed with the urine would give the reaction for albumin. The albumin usually found in the urine after massaging the prostate and vesicles is probably due to the semen expressed during the massage. There is no question but that semen, even in small quantities, mixed with absolutely normal urine, will give positive reactions for albumin.

Journal of the American Medical Association, January 12, 1907.

Endothelioma of the Skin.—W. S. Gottheil, says that it is now the general opinion of pathologists that to the class of endotheliomata belong many of the atypical or mixed new growths called endothelial carcinoma, endothelial sarcoma, angiosarcoma, etc. Their differentiation from cancer and sarcoma is important, as these endotheliomata are essentially benign, slow in growth, without tendency to metastasis or to lymphatic gland involvement, and are not prone to recur after removal. Recorded cases of endotheliomata of the skin are rare,

and their clinical characteristics are not well defined. As yet a positive diagnosis can be made only with the aid of the microscope. Most of the cases have appeared on the scalp as single or multiple, flat or pedunculated tumors. They are not likely to break down, but are very liable to undergo degeneration, more especially of the fatty type, and so to show a more or less marked yellow color; their growth is slow, and they show no evidence of malignancy.

Trypanosomes.—F. G. Novy describes the trypanosomes, gives what is known of their life history, and transmission through insects, etc., and describes the diseases they produce. He does not accept Koch's views of the specific unity of many of the pathogenic trypanosomes, but recognizes eight pathogenic species for mammals, including the kala azar organism, the generic relations of which seem to be somewhat in doubt. Only two of these are pathogenic for human species, the *Tr. gambiensis*, which causes the African sleeping sickness, and the *Tr.? (Piroplasma) donovani*, responsible for the kala azar disease of India, but these are formidable enough. The most formidable trypanosome infection of the domestic animals, the tsetse fly disease of South Africa, has become a much less serious matter since the extermination of most of the wild game of that region that harbored the parasite, the fly itself being only the passive carrier of germs. It is probable also, in Novy's opinion, that the same is true of the *Glossina palpalis*, the biting fly that transmits the germ of sleeping sickness which has lately depopulated whole regions of Eastern Africa. The treatment of the severer forms of trypanosome disease, including those affecting man, is very unsatisfactory. Encouraging results, however, have been obtained with aniline dyes and arsenic in monkeys affected with sleeping sickness, though, save in one case reported by Dutton and Todd, treatment has been ineffectual so far in the human species.

Fractures of the Neck and Shaft of the Femur.—F. E. Peckham describes at length the method of using a modified Thomas splint for treatment of fractures of the shaft of the femur according to the method devised by Ridlon. He makes a special point of frequent measurements under the straps in order to insure the proper length of the leg throughout the treatment, and also of properly supporting the lower end of the leg between the end of the splint and the ankle by a smooth pad. He has used this method in a number of cases with excellent results. In some cases, however, it became necessary to take additional measures to render the limb immovable when constant daily attention could not be given, and he describes a method adopted by him of fitting a plaster cast and windlass attachment during etherization, and illustrates it with cuts. It has, of course, the disadvantage of rendering the surface of the leg inaccessible in part, and therefore some excoriations cannot be avoided, whereas with the Thomas-Ridlon splint every part of the skin can be reached. In fracture of the upper third of the shaft, shortening is almost unavoidable except with children with whom it is also the rule. He treats these cases also with the plaster frame and windlass attachment described. He summarizes as follows: (1) Find out as accurately as may be and with *x*-ray, if possible, exactly what the condition is. Portable *x*-ray outfits now permit radiographs at the bedside, so that fractured necks and shafts may be accurately studied in this way; (2) reduce the fracture under ether and apply the Thomas splint in fractures of the neck and plaster-of-Paris in case of fractured shaft; (3) practise eternal vigilance all through the bed treatment to prevent pressure sores or any other trouble from arising; (4) operate immediately in all cases of nonunion.

The Quinine Treatment of Pneumonia.—M. A. B. Smith testifies to the value of quinine in the treatment of pneumonia, reporting four cases in which it was successfully employed. He believes that in the large doses advocated by Galbraith quinine acts as a specific, as much so as antitoxin in diphtheria. He found that large doses of the drug were better borne by pneumonia patients than small ones, and thinks he might safely have given still larger ones than those of from thirty to fifty grains, which he employed. There were more symptoms of quininism with from six to ten-gram doses than with the larger ones.

X-ray and Radium Treatment of Deep-Seated Cancer.—J. Rudis-Jicinsky reports three cases of inoperable abdominal cancer treated with the *x*-ray, and *x*-ray and radium, with apparent benefit. One patient was apparently well three years after first being seen, and in another the disease seems arrested after a year's treatment. The other patient, though temporarily benefited, died from a recurrence and auto-intoxication over three years after being first seen. Two other cases are mentioned in which the growth disappeared under the treatment, but the patients died later from recurrences. He thinks the facts show that in these cases we must not delay our operative procedures, but, if possible, should make an exploratory incision to ascertain the state of things in every inoperable and deep-seated case, and then ray the growth as soon as possible to prevent suffering and local or general recurrence. In primary operable malignant tumors it is well perhaps to ray the field about ten days before operation, and after operating, ray it again at once to prevent recurrence or infiltration into the glandular tissue, especially in carcinoma and sarcoma. An area three or four inches larger than that of the original tumor is exposed by him to a hard tube; in fact, the harder and deeper the lesion the harder should be the tube.

The Lancet, December 29, 1906.

The Treatment of General Peritonitis.—A. W. Mayo Robson gives a general review of the attitude taken by surgeons relative to the proper treatment of this condition, tracing the question from the time of merely expectant measures up to its present day operative status. He refers to various papers by different men on both sides of the Atlantic and presents some suggestive statistics. The cases thus collated he divides into four groups, as follows: Group 1. Acute appendicitis without perforation, 20 cases with immediate operation and a mortality rate of two and one half per cent., 55 cases with delay in operation, no mortality. Group 2. Acute appendicitis perforated or gangrenous without abscess, 21 immediate, no mortality; 34 with delay, no mortality. Group 3. Acute appendicitis with peritonitis and abscess, 38 immediate, mortality two and one half per cent., 78 with delay, and the same mortality. Group 4. Acute appendicitis with diffuse peritonitis, 33, all with delay in operating, and a mortality of thirty per cent. Concerning the position taken by Ochsner, he states that if we compare the figures here given with the results of the extensive operation involving manipulation of the abdominal contents or evisceration, we cannot but pronounce in favor of Ochsner's treatment, as carried out by himself, which is, moreover, undoubtedly the best treatment in the absence of the possibility of skilled surgery, if it can be carried out thoroughly in every detail as advocated and practised by its author. If, however, we compare the results of *delay*, even in Ochsner's hands in this class of cases, with those of less severe operations, the author thinks we shall be driven to the conclusion that where efficient surgical help and nursing are available immediate operation in spreading or general peritonitis due to appendicitis is likely to yield better results than can be obtained by delay. Moreover, Robson notes the difficulty in making a diagnosis as to the cause of the peritonitis. No one counsels delay in a case of undoubted gastrointestinal perforation or bowel strangulation, but in 52 cases, shown at operation to be due to perforated duodenal ulcer, a correct diagnosis had been made in only 2. Acute pancreatitis may also simulate perforative appendicitis, and delay in such cases certainly would be disastrous. A similar observation applies to perforated gastric ulcer and typhoid perforations. As to the latter Robson declares that it is quite clear that an extensive operation can never be borne and that a rapid repair of the cause and drainage will yield the best results. In the after-treatment the administration per rectum of large quantities of saline fluid with which liquid peptonoids and some diffusible stimulants are mixed is most useful, and if needful it may be supplemented by subcutaneous or intravenous saline infusion. Feeding by the bowel may be supplemented by the subcutaneous administration of a five per cent. glucose solution or by the administration of sterile olive oil subcutaneously until the stomach is capable of retaining nourishment. Liquor strychninæ in five-minim doses subcutaneously every four hours is most useful in combating shock and strengthening the heart. After removal or repair of the cause of the peritonitis one-eighth of a grain of calomel given every hour or two by the mouth until a grain has been administered not only helps the passage onwards of flatus, but by its antiseptic effect tends to prevent decomposition in the gastrointestinal contents and so to arrest the formation of gas; if necessary a turpentine enema is given to assist the expulsion of flatus from the large intestine. If there is distention of the upper abdomen with inefficient vomiting, or if vomiting is persisting, gastric lavage is resorted to and, if needful, repeated from time to time, a method of treatment that often gives great relief.

Cyanosis, General and Local.—Under this heading T. Oliver discusses enteric cyanosis, that of intestinal

Raynaud's workers and really gangrenous, or Raynaud's disease. The first variety frequently occurs in those who regularly take, on their own responsibility, the various modern headache and other powders containing acetanilid and similar compounds. Some cases have been found due to intestinal organisms which possess the power of influencing blood composition. Workers in marble become markedly cyanosed and pass dark colored urine. In man the poison may enter by the skin, by the alimentary canal, or by the respiratory organs, and the symptoms are always the same—viz., nausea, vertigo, oppressive sleepiness, muscular pains, and a sense of weakness with tremors and anesthesia. The skin becomes blue, the cyanosis being often very pronounced. The buccal mucous membrane, the gums, the conjunctivæ, the lobes of the ears, the face, the hands, and the feet show the discoloration best. The cyanosis is not due to venous stasis, but depends upon a colored substance in the blood, probably methemoglobin. The men recover if they cease work for a time. The pathology of Raynaud's disease is unknown. No special lesion has yet been noted in either the cardiovascular or nervous systems, central or peripheral. Yet there must be some nervous causes, since the attacks come on after emotional states. The causes of tissue death are: (1) obstructed arterial circulation; (2) impeded venous flow; (3) obstructed capillary circulation owing to diseased walls of vessels; and (4) death of the cells by poisons due to microbes. Excepting in those cases where gangrene has occurred and where the structural alterations in the blood vessels and nerves have been the consequences rather than the cause of gangrene, no constant changes have been found in the peripheral nerves and blood-vessels. It would seem as if some peculiar local change occurred in the tissues of the part affected in Raynaud's disease, whereby either in consequence of the contraction of arteries and veins due to some central nervous condition influencing the vasomotor center, or in consequence of altered chemical states of the blood or pathological changes in the walls of the minute vessels, that either of these conditions singly or combined, but accompanied by poisoning of the cells of the part either through their own toxins or by poisons brought to them, is capable of causing death of the tissues and the formation of a gangrenous slough.

Origin and Differentiation of the Red Blood Cells in Mammals.—At a recent meeting of the London Pathological Society Dr. C. E. Walker presented a paper on this subject, stating that he used the word leucocyte in his paper to cover all the wandering nucleated cells of the body. From a certain class of leucocyte found in the bone marrow of mammals he traced a gradual series of stages of degeneration in the nuclei, and the gradual appearance of hemoglobin in the cytoplasm to cells with a relatively large, round, and almost homogeneous nucleus. During this process the nuclear membrane generally showed some small breaches through which some of the nuclear contents exuded into the cytoplasm. After this Dr. Walker described a large breach as occurring in the nuclear membrane of some of the cells, by which the nucleus was completely disintegrated. In other cells the nucleus apparently disintegrated by exudation through smaller breaches. The centrosomes were retained throughout in a certain proportion of the red corpuscles which had cast rid of their nuclei in this manner. In the bone marrow a very large proportion of the red corpuscles contained remnants of the nucleus. A very small proportion retained these remnants after they had been thrown into the blood stream. Dr. Walker had observed the bodily ejection of the nucleus in these hemoglobin-bearing cells, but only as a post mortem phenomenon. He based his interpretation of the sequence of the changes which he described upon comparison with what happened in degenerating cells in the test of various animals, and upon the changes which he had observed in the nucleated red corpuscles of fœtal ox, reptiles, and birds after removal from the body of the animal. In all these cases the exact sequence of events could be followed with the greatest certainty. He incidentally recorded the presence of two or more centrosomes, often hypertrophied, in practically all the red corpuscles of fœtal and other amphibia.

British Medical Journal, December 29, 1906.

Tenotomy of Inferior Oblique and Consideration of the Conditions that May Call for the Operation.—After describing the technique of the operation, which consists in a division of the tendon of origin through a cutaneous incision, A. Duane discusses the conditions which may call for the operation, namely: (1) Conditions simulating spasms of the inferior oblique. (*a*) Complete stationary paralysis of the superior rectus of one eye. Fixation with the other eye. No true spasm. (2) True secondary spasm of the inferior oblique. (*b*) Partial paralysis or insufficiency of the superior rectus, causing pronounced secondary deviation of the other eye, due to spasm of its inferior oblique. (*c*) Paralysis of a superior oblique or some other muscle, causing secondary spasm of the inferior oblique in the same eye. (3) Primary spasm of the inferior oblique. We must be sure before operating (1) that the condition is permanent and stationary, and (2) that the symptoms are so marked as to call for interference.

Treatment of Unripe Cataract.—W. M. Kulen extols the utility of the McKeown apparatus for intraocular irrigation in cases of unripe cataract. The fluid used is saline solution, 4 gr. to the oz., boiled in a glass flask before use and rapidly cooled to blood heat. The eye tolerates this solution well, and very free intraocular irrigation can be kept up without for a long time where sticky cortex has to be removed without any serious reaction. The absolutely essential conditions are that the solution is sterile, at blood heat, and that the vitreous chamber is not opened. Most a pint should be in the flask for an operation. Irrigation may be done in two stages. The first is injection of fluid under the capsule of the lens immediately after the corneal section and before the usual capsulotomy. The blunt flow needle is much like a fine hypodermic needle, and it should be introduced about half way between the section and the center of the pupil, so as to avoid perforation of the edge of the lens or suspensory ligament. It must also be kept well in front of the nucleus. The use of the needle at this stage is a valuable means of diagnosis of the consistence of the lens. If it penetrates the capsule easily, without moving the lens, the fluid will spread usually and help to opacify the unripe cortex, and irrigation will be useful both now and after delivery of the nucleus. On the other hand, if it does not penetrate the capsule or if it commences to push the lens before it, we have probably to deal with a sclerosed cataract, which will not require irrigation. The section of the capsule is now made, and the body of the lens extracted, after which further irrigation through the nozzle, combined with massage, serves to soften and remove masses of cortex still remaining. In many cases the nozzle irrigation is quite sufficient, the needle not being used.

Eyesight in Relation to Compensation.—T. Fergus refers to the attempts which have been made to derive formulæ by which to assess the damages due for the loss or partial impairment of one eye. He has gathered some data about men possessed of only one eye who were not entitled to compensation owing to their loss of vision from disease, etc. He gives the results obtained in a series of such cases. A great deal depends on what might be called the patient's resource. It seems to the author that it is hopelessly futile to establish a definite relation between a person's wage-earning capacity and his eyesight. Some men with only one eye seem practically helpless, while others get on without difficulty. Another element equally impossible of evaluation is the injured man's truthfulness. The only means which we have of measuring a person's visual acuteness is by letters, or by other objects of known size. But when a patient is placed in front of letters which gradually diminish in size we have no means of testing whether the smallest letters which he reads are the smallest which he sees. He may only read 6/36, while all the time his vision is 6/6. There is obviously a great temptation placed before frail humanity if the worse the vision the greater the compensation. Frequently a witness goes into the box and states on oath that the vision of the injured man is, say, 6/36. What he really should say is that at the examination the patient read letters of 6/36, but as to whether that is his best or not he (the witness) is entirely ignorant—unless, indeed, when he has during the examination found something which would account for such a diminution of the acuteness. Here, therefore, we have another factor which must justify any formula which attempts to express a relation between wage-earning capacity and the form sense. Lastly, and most important of all, there are many kinds of employment in which the form sense does not seem to play any appreciable part. To this category may be added, e.g., all persons who have an expressively high degree of myopia. A young man had worked for several years in a coal pit. He thought he would try to get employment above ground, and accordingly applied to a railway company, but was rejected on account of his sight. He came to the hospital, and it was found that he had a myopia of 15 D in one eye and of 15 D in the other. The acuteness of the better eye was only 1/30 Snellen. Yet this lad had no idea that there was anything wrong with his eyes.

Berliner klinische Wochenschrift, December 24, 1906.

The Spirochete Question.—Schulze considers that by means of his experiments on the inoculation of the rabbit's cornea with syphilitic material he has been able to prove

that syphilis can be transmitted to these animals and also that he has been able to demonstrate the presence in the lesions of the *Cytorrhyctes luis* of Siegel. He is furthermore of the opinion that the structures to be seen in syphilitic material after treatment by the modified Golgi method of Levaditi are only artefacts composed of some tissue element, usually nerve terminals. He points out that these structures are demonstrated most successfully in tissues, such as those of syphilitic fetuses, that have undergone more or less maceration. He has been able to demonstrate them in the cornea of a nonsyphilitic fetus, although only in small numbers, and explains their fewness in this case on the assumption that chemical conditions existing in syphilitic tissues facilitate the staining by the silver method. He gives as a strong argument against those who believe that the silver-stained structures really are spirochetes the fact that in this case the so called spirochetes should also be susceptible of demonstration by the Giemsa method, but states that this is not so. Against the argument, of those who contend that the silver stained structures cannot be artefacts because they are sometimes seen in the lumen of blood-vessels he brings forward the possibility that portions of the macerated wall of the blood vessel, such as the intercellular cement substance, may become detached and take the stain.

Blood Pressure Determination in Man.—Bing gives the theoretical and practical considerations which lead him to conclude that the blood pressure determinations obtained by the ordinary methods in clinical use represent not the end pressure in the brachial artery, but the lateral pressure. Comparative observations made on the two arms, one of which was subjected to either cold or heat, showed that the results obtained by the sphygmomanometer were dependent on the condition of contraction of the vessels below the point of measurement so that changes in the lumen of these vessels produced alterations in pressure without necessarily being attended by any corresponding fluctuations in the aortic pressure.

Münchener medicinische Wochenschrift. December 25, 1906.

Perforation of the Duodenum by a Hairpin.—Mennacher describes a case of fatal peritonitis following perforation of the duodenum caused by a hairpin swallowed about five months previously. The patient was a girl of six years, and for four weeks after the foreign body had been swallowed constipating diet and observation of the stools was kept up. Although the hairpin did not appear, as the child suffered from no inconvenience these precautions were gradually relaxed, and during the following four months the little patient gave no evidence of anything being wrong. She then suddenly developed acute abdominal symptoms, and the possibility of appendicitis or intestinal perforation was considered. In the next few hours no remarkable an improvement in the patient's condition occurred, however, that the operation was postponed. About twelve hours later the peritoneal symptoms had returned with full violence, and on opening the abdomen a diffuse suppurative peritonitis was revealed and it was discovered that the blunt end of the hairpin had pierced the duodenum at the junction of the descending and ascending parts, most of the pin still remaining inside the intestine. Death occurred in the night following. The author calls attention to the length of time that the hairpin must have remained in the stomach, as he concludes that the onset of the acute symptoms must have occurred shortly after its passage into the duodenum, and also to the very striking period of remission of symptoms, which is not an unusual feature in cases of perforation of duodenal ulcers.

The Technique of Staining for Spirochetes. Krauss describes an improvement in the methods for staining spirochetes in syphilitic lesions. The preparations are fixed in osmic acid fumes and stained with Giemsa's solution in the manner indicated by Hoffman-Halle. The chief objection to preparations made in this way consists in the precipitates of dye that always somewhat obscure the field. These may be removed, according to Krauss, by immersing the preparation for about half a minute in a 30 per cent. aqueous solution of tannin, by means of which very sharp differentiation is produced. The spirochetes have a bright red color which is in strong contrast to the colorless or pale pink background. It is stated that the tannin solution never decolorizes the spirochetes.

French and Italian Journals.

Amputation of the Cervix for Hypertrophic Elongation at the Fourth Month of Pregnancy; Labor at Term.—Potocki describes a circular amputation of the cervix which he performed at the fourth month of pregnancy. The elongated cervix protruded the width of a finger below the labia minora and could not be pushed back into the vagina. The cervix in its entire length was hard; the cervical canal was not dilated, the fundus of the uterus was at the umbilicus. After amputation the intracervical mucosa was carefully sutured with catgut to the vaginal membrane. The section amputated measured seven centimeters and showed signs of sclerotic lesions. A natural and rapid labor occurred at term. The child is now six years old. In a previous case of the same kind which Potocki observed the cervix had not been amputated; it did not disappear during labor; the membranes broke and the child died. In this case the fetus had to be extracted by basiotripsy and the patient recovered after suffering many complications. In the operation of amputation the danger of abortion arises, but this danger can be greatly lessened by injections of morphine during the first few days after the operation; besides this the danger of abortion from operations in the genital region during pregnancy appears only in a small proportion of cases.—*Le Bulletin Médical*, October 24, 1906.

Surgical Treatment of Renal Calculi.—During the proceedings of the Association Française d'Urologie, H. Pousson stated that in aseptic renal lithiasis the treatment of choice is nephrotomy. When treating a suppurative calculous kidney the surgeon must take into consideration conditions such as infectious changes destructive of the renal tissue with perinephritis, with or without suppuration, as well as the general condition, before deciding to proceed by nephrotomy or nephrectomy. The present methods of judging the actual condition of the kidneys have greatly reduced the uncertainties of nephrectomy. In using this method fistula and septicemic accidents are avoided and the convalescent period is shortened when the disease is not too deep seated. In discussing the statements of Pousson, Rafin said that the danger of nephrectomy lay in the fact that renal lithiasis often affects both kidneys. The diagnosis could be made by radiography. He showed five calculi which had been diagnosed by radiography, four being extracted by nephrotomy and one by pyelolithotomy. In suppurative lithiasis great care is necessary to prevent infection where catheterization of the ureter of the healthy kidney is employed.—*La Presse Médicale*, October 17, 1906.

Sudden Death from Acute Pulmonary Edema During the Course of Phlegmonous Periamygdalitis.—Louis Albert Ambard describes a patient under his care who, for the symptoms of a mild attack of phlegmonous periamygdalitis had subsided, suddenly died from an acute general edema of both lungs. He considers this case an interesting actual proof of the theories which attribute extremely acute edema of the lungs to trouble of the nervous system. It seems especially to uphold the theory of pulmonary vasodilator inflammation, on account of the irritation of the pneumogastric caused by the compression of this nerve against the cervical region by an inflamed lymphatic ganglion. Careful macroscopic and microscopic examination proved the integrity of the organs usually involved. There was no nephritis, the heart was healthy, the aorta showed no trace of atheroma, nor were there any signs of those valvular lesions, such as mitral stenosis and aortic insufficiency of rheumatic origin, which have, at times, been considered the cause of acute edema of the lungs.—*Comptes des Hebdomadaires des Séances et Mémoires*, August 21, 1906.

Changes in Gastric Chemism Following Gastroenterostomy.—Katzenstein describes the results of experiments on a number of dogs. Gastric fistulas were produced in the dogs and the gastric juice obtained from the fistula was examined both before and after a gastroenterostomy. The results were found to be as follows: After the formation of a gastroenterostomosis large quantities of bile and pancreatic juice enter the stomach; the flow is at first continuous, but varies later with the stage of digestion. The presence of these alkaline intestinal juices diminishes the acidity of the gastric juice both by chemical action and by reducing the secretion. Pepsin does not act in a neutral medium, the pancreatic trypsin acts in a medium which has a temporary acid reaction, but its action is easily weakened. The diastase and the emulsifying ferment act in slightly acid media, but not as strongly as in media which are neutral or alkaline. Secretions of bile and pancreatic juice can be excited reflexly when fats are introduced into the stomach. The author in fact offers a method of diminishing the acidity of the gastric juice after gastroenterostomy.—*La Presse Médicale*, October 20, 1906.

Diffuse Neurofibromatosis.—Christofoletti describes an interesting case of neurofibromatosis in which many nerves, especially among the cranial nerves, were involved. The tumors were in this case all on the left side, whereas they are usually scattered rather symmetrically on both sides of the body. The patient was sixty-seven years old, an age more advanced than usual in such cases. He first

noticed severe neuralgic pains of the left upper arm and discovered a tumor of small size in the same region. Following this he had symptoms which indicated the involvement of many nerves. He had vertigo, myasthenia, uncertain gait, severe occipital headache, somnolence, apathy, and melancholia, while all his mental faculties were intact. All these symptoms indicate a tumor of the cerebellum. The neuralgia extended to the left side of the neck, indicating involvement of the cervical plexus as well as the brachial. The pulse was absent in the whole left arm, from pressure of a tumor on the subclavian artery. The disease involved all three branches of the trigeminus, the lesion being intracranial. There was a total left facial paralysis, from a lesion of the trunk of the nerve in its intracranial portion. The hearing on the left was lost. There was great difficulty in swallowing and paralysis of the velum of the palate from lesions of the hypoglossus, accessorius, vagus, and glossopharyngeus. There was paralysis of the left vocal cord. The chief interest of the case is due to the large number of nerves involved as indicated by the symptoms, while only the one small tumor of the arm could be felt.—*La Riforma Medica*, September 22 and 29, 1906.

Struma the Result of the Diplococcus of Fraenkel.—D. Buttino and F. Cattanea tell us that it is well known that various infections may affect the thyroid gland, especially when the gland is in a pathological condition to begin with. The thyroid may suppurate in typhoid, puerperal fever, pyemia, rheumatism, and malaria. They record a case in which the infective agent was the diplococcus of Fraenkel. This germ becomes a pus producer and localizes itself in other regions besides the lungs. But it is exceedingly rare to find suppuration of the thyroid from this germ, only ten cases being recorded. The patient came into the hospital for a mild pneumonic affection, having a chronic enlargement of the thyroid gland at the beginning of the disease. No pneumococci were found in the blood. There occurred suppuration of both lobes of the thyroid, and in the pus removed the pneumococcus was found.—*Rivista Critica di Clinica Medica*, October 6, 1906.

Differential Diagnosis Between Poisoning with Charcoal Vapors and with Illuminating Gas.—A. Cevidalli and A. Chistoni have endeavored to find a means of diagnosis between poisoning by charcoal vapor and that produced by illuminating gas. This is sometimes of great medicolegal importance in fixing the responsibility for accidental poisoning. The symptoms and post-mortem appearances are very much the same. Poisoning with illuminating gas is more dangerous than that with carbon monoxide, inasmuch as when a gas jet has been left open the flow goes on constantly as long as the pressure in the pipes continues, while in the use of charcoal for heating the flow stops when the fuel is consumed. In poisoning by charcoal there is a deposit of soot about the nostrils and in the respiratory tubes. In cases in which illuminating gas has filtered through the earth the hydrocarbons which give it its odor are removed, and it becomes odorless, and this far more dangerous. The authors experimented on the action of the two gases with methemoglobin as a method of diagnosis. Their results are thus given: illuminating gas transforms a solution of methemoglobin so as to produce a clear, red color, and there is a wide band of absorption in the green of the spectroscope. The blood of man and the ox methemoglobinized behave in the same way with illuminating gas. Co pure, or air, passed through a solution of methemoglobin produces no change in the solution.—*Lo Sperimentale*, Vol. III, Anno LX.

The Cerebellar Syndrome in Malaria.—G. Pecori finds that dysarthria is a rather common symptom in severe cases of malaria, especially of the cerebrospinal variety. It often goes with symptoms of incoordination that are attributable to a localized lesion in the cerebellum. In a case under his care there was complete inability to speak, although cries and moans were continual. It was impossible for the patient to sit or stand erect; there was midriasis, nistagmus, difficulty of muscular movements, and in swallowing. A general muscular relaxation, with normal sensibility and normal reflexes; retention of urine and feces were followed by incontinence. Vision was the last of the symptoms disappeared, but dysarthria remained and defect in the pronunciation of the dentals and lingivals. After six years there was still some dysarthria. The author considers that there was a lesion of the cerebellum due to a polyencephalitis of infective origin. In a case that came to autopsy, in which there was a similar syndrome, punctiform hemorrhages were found in the white substance of the frontal lobes and the gray substance of the cerebellum. —*Il Policlinico*, November, 1906.

Symptomatology of Cancer of the Pylorus.—Leon Vorters reviews this subject in an interesting paper. The stomach is often considered as the organ most frequently invaded by cancer. It can hardly be deemed that the pylorus is the region where gastric cancer is most often found. Statistics show that among 100,000 people there are about fifteen deaths each year from this cause. Pyloric cancer is rare before the age of thirty and after the age of seventy. Following certain dyspeptic disturbances which are rather vague, pyloric cancer may be considered to pass through two stages. The first or initial period is marked by characteristic dyspeptic symptoms, gastric dilatation with retention due to pyloric stenosis. The second or terminal period is that in which the tumor is perceptible and cachexia develops. As has already been indicated, the beginning of this trouble reveals itself by obscure symptoms. Cancer, when it has its seat in the pylorus, almost invariably give rise to pain. In spite of this, however, pain is variable and may be lacking entirely. Vomiting is frequent in all forms of gastric cancer. In cases of pyloric cancer vomiting is almost constant. Hemorrhage in these cases is frequent and varies in the different patients in its appearance, in its quantity, and in its frequency. Pyloric cancer is an affection which has a continuous and progressive course. In the terminal period metastases are looked for. Propagation may take place by the blood-vessels or by the lymphatic route.—*Gazette des Hôpitaux Civils et Militaires*, November 17, 1906.

Three Cases of Gastric Wounds Treated by Laparatomy.—Vavray presents three new observations of gastric injury which were treated surgically. He has now operated on seven patients with gastric injury, with four recoveries and three deaths. He insists upon the necessity of making a large opening in the anterior colic omentum for the exploration of the posterior surface of the stomach in order to see if this part has been injured. An opening which is too narrow renders exploration very difficult, and he has discovered that a large transverse incision can be made without compromising the vitality of the intestinal walls. Even then the opening is often insufficient for proper exploration. In such cases this operator advises exploratory gastrotomy. This increases the danger to the patient. However, its advisability depends upon the indications observed. The writer believes that it is especially useful in injuries by bullets and when the stomach is empty at the time of the accident.—*Revue de Chirurgie*, November 10, 1906.

Tetanus Neonatorum Treated by Baccelli's Method.—Lavinio Miserocchi gives us the history of a case of tetanus neonatorum treated successfully by injections of phenic acid after the method of Bacelli. The child was six years old when it was attacked by trismus, which went on rapidly to opisthotonos and tetanic seizures, with high temperature. Injections of phenic acid were at once begun, with antiseptic treatment of the navel, which secreted some pus. Four or five injections were given daily in sterilized oil. The seizure diminished and the temperature went down. After thirty-four days of treatment the child was cured without having shown any symptoms of carbolic acid poisoning. The type of the disease was severe, with very high temperature, and in general such cases end fatally. This seems to be a good case for a test of the treatment, and its happy ending appears to show that this treatment will be curative when undertaken early. *Rivista Critica di Clinica Pediatrica*, November, 1906.

Decapsulation and Capsulotomy in Nephritis.—Tommaso Costa tells us that we may regard decapsulation of the kidneys as of the greatest value in most varieties of kidney diseases, acute as well as chronic. It is contraindicated in old age, cardiac disease, and albuminuric neuroretinitis, which is the precursor of a fatal ending. The author believes that the benefit is due to a new formation of the capsule which allows the tissue of the kidney, before bound down by the constricted capsule, to expand. New blood-vessels are formed in the new capsule. The epithelial elements are regenerated, but the better nutrition makes them change within themselves so as to better perform their functions. The hyperemia and polyuria which follow the operation aid in the absorption of morbid products within the kidneys, and render the urinary tubules permeable. The author has produced an artificial nephritis in dogs by the injection of a solution of chlorohydrate of hydroxylamine, which produces a nephritis very similar to that seen in the human race. Fifteen dogs were treated in this way; a part were then submitted to decapsulation or capsulotomy, while others were left untreated. Eight of those operated on were cured of the nephritis, while those not operated on died. The author concludes that the decapsulation of one or both kidneys will cure an artificially produced nephritis. Cure is more rapid and progressive in capsulectomy than in capsulotomy. After forty days the capsule is found reformed and thicker and more vascular than before. A unilateral operation, by means of the renal reflex, results in a cure of bilateral nephritis.—*Giornale Internazionale delle Scienze Mediche*, November 15, 1906.

Book Reviews.

Diseases of the Digestive System. Edited by Frank Billings, M.D., Professor of Medicine, University of Chicago, and Professor of Medicine and Dean of Faculty, Rush Medical College. An authorized translation from "Die Deutsche Klinik" under the general Editorial Supervision of Julius L. Salinger, M.D. With Forty-five Illustrations in the Text. New York and London: D. Appleton & Co., 1906.

The best method of giving some idea of the scope of this volume of eight hundred odd pages, which is composed of a series of articles on various diseases of the digestive system by German authors, is to enumerate the subjects discussed, together with the names of the writers to whom they have been allotted. The list is as follows: Stenosis of the Esophagus, by Th. Rosenheim; The History and Clinical Indications of Gastric Lavage, by W. Fleiner; Functional Diseases of the Stomach, by H. Leo; The Diagnostic and Therapeutic Significance of Secretory Disturbances of the Stomach, by H. Strauss; Diagnosis and Treatment of Gastric Dilatation, by F. Riegel; Gastric Ulcer and Gastric Hemorrhage, by C. A. Ewald; Gastric and Intestinal Carcinomata, by J. Boas; Displacement of the Abdominal Viscera and of the Heart, by F. Hirschfeld; Symptomatology of the Diseases of the Pancreas, by L. Oser; Jaundice and Hepatic Insufficiency, by O. Minkowski; Chronic Inflammation of the Liver, by E. Stadelmann; Neoplasms of the Liver and Biliary Passages, by Fr. Kraus; Echinococcus of the Liver, by E. Stadelmann; Gallstones, by E. Neusser; Acute Diffuse Peritonitis, Appendicitis, and Perityphlitis, by O. Vierordt and J. Boas; Examination of the Feces, by J. Strasburger; Diarrhœa, Intestinal Catarrh, and Intestinal Tuberculosis, by W. Fleiner; Constipation and Hemorrhoids, by J. Boas; Mucous Colic and Membranous Intestinal Catarrh, by G. Hoppe-Seyler; Intestinal Constriction and Intestinal Occlusion, by H. Nothnagel. From the foregoing it is evident that the volume is composed of essays by some of the most eminent German-speaking clinicians on a well-selected series of topics concerning the disorders of the alimentary tract, but that the work does not and is not intended to cover the entire subject in a systematic way. As is usual in such compilations, some of the sections are much better than others, but the general average is high and the articles are written in a way to prove interesting and directly useful to the practitioner. The book, therefore, is of a sort to serve as a highly desirable acquisition to any medical man's reference library, but it should not be the first treatise on diseases of the digestive system purchased by the student or young practitioner.

The Ear and Its Diseases. A Textbook for Students and Physicians. By Seth Scott Bishop, B.S., M.D., LL.D., Surgeon to the Post-Graduate Hospital and to the Illinois Hospital, etc. Illustrated with Twenty-seven Colored Lithographs and 200 Additional Illustrations. Four Hundred and Forty Pages. Bound in Extra Cloth. Price, $4.00, net. Philadelphia: F. A. Davis Company, 1906.

Probably no textbook on diseases of the ear, nose, and throat has been used in more American medical schools than that of Dr. Bishop, which has passed through several editions. Objection having been made that the portion devoted to otology was too abridged, the author has prepared a special treatise on this special subject, not only elaborating the ideas expressed in the original work but also introducing much new material. This is especially noticeable in the opening chapters devoted to anatomy of the ear, which, says the author, "has heretofore been a field both dreaded and unconquered by the average student." Many of the illustrations in these chapters are from preparations and sections made by the writer, who has drawn freely on his extensive clinical experience rather than slavishly following the usual beaten tracks so strongly in evidence in many textbooks. Two interesting chapters discuss the ill-effects of various diseases and drugs on the ear, and reference is also made to the relation of ear diseases to life insurance risks.

The Health-Care of the Baby. A Handbook for Mothers and Nurses. By Louis Fischer, M.D., Author of "Infant Feeding in Health and Disease," "A Textbook on Diseases of Infancy and Childhood"; Attending Physician to the Willard Parker and Riverside Hospitals; Former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital, etc., etc. New York and London: Funk & Wagnalls Company, 1906.

In this condensed manual the writer gives many details in relation to ventilation, clothing, and bathing which should be familiar to every mother and nurse. The most important part of the book consists in the suggestions and advice pertaining to infant feeding in health and in conditions of stomach and bowel disorder. The management of rashes and fever is considered. Many hints are given as a guide to the mother during attacks in her children of measles, skin diseases, croup, and like affections. First aid suggestions in cases of accidents and poisoning, and bad habits are discussed. The last chapter treats of external applications and the medicine chest. The young mother and nurse will find this little volume very helpful.

Conferences on the Moral Philosophy of Medicine, prepared by an American Physician. New York: Rebman & Co., 1906.

This modest volume treats of many subjects essential to the well-being and success of every medical man, be he student or physician. The following excerpt from the introduction is a peculiarly illuminating syllabus of the subjects treated of. The author says "that the systematic teaching of medical morals should constitute the early part of the student's education is evinced by the frequently expressed desire of young men to obtain the right kind of information for guidance in their professional relations and obligations. The moral philosophy of medicine, comprising as it does the science of the physician's duty in all his acts and concerns, the thorough knowledge of the law of medicine, and of the relations of the student as well as the graduate with his associates and other members of the community seems a suitable title for these colloquies which consist of an exposition of some of the general and special principles of conduct of the aspirant to medical studentship, of the matriculated student, of the hospital interne, and of the young practising physician, and include considerations on physicians of the past and present, on medical teachers, schools, and students, on the early cultivation of the senses as essential to the proper conduct of the study and practice of medicine, on the evolution of medical morals, on the special relations of the physician and patient, of the physician and colleagues, and of the profession and public, besides a discourse on the language of medicine; another on young writers and speakers, and a third on the length of life of physicians."

We commend to young men the chapters on the "Aspirant to Medical Studentship," on "Physicians of the Past," and on "Teachers, Schools, and Students of Medicine," since they contain much necessary information which will aid a man so materially in his conduct and conceptions of medical life, and tend to equip him for successful effort. In like manner the directions to the "Matriculated Student," to the "Graduate as Hospital Interne" are most impressive. One of the best chapters in the book is upon "The Young Practising Physician." The chapter on "The Evolution of Medical Morals," which treats of the earliest principles of conduct and shows how the obligations of physicians have gradually been formulated and crystallized into practical demonstration is most valuable and commands close attention. The question of the relation of the physician and his patient is handled in a masterly manner, and the duties of each one to the other are brought out with the greatest clearness and simplicity. These chapters, together with that on the "Physician, Profession, and Public," embody an epitome of character, conduct, and endeavor which should be generally studied. The whole book is a *vade mecum*, which should be in the hands of all medical men. In reviewing a work such as this, with its lofty sentiments and aspirations and its pure, practical, Christian teachings, one would fain wish that its author had not clothed himself with anonymity.

Photoscopy (Skiascopy or Retinoscopy). By Mark D. Stevenson, M.D., Ophthalmic Surgeon to the Akron City Hospital; Oculist to the Children's Home, Akron, Ohio. Philadelphia and London: W. B. Saunders Company, 1906.

This new competitor for favor with those who determine the refraction of the eye is written by one who has studied the subject profoundly and who is familiar with the wants of those pursuing this branch of medical practice. The term "photoscopy," which is employed as the title of the work, is somewhat unfortunate, since it is not sufficiently specific to indicate the method to which it is applied. The volume, which includes 126 pages, is well written, well printed, and well illustrated. The text is divided into five chapters. Chapter I. contains suggestions for beginners and describes the instruments necessary for the work. Chapter II. deals with the underlying principles of the method, considers the intensity and kind of light desirable, and describes the various phenomena observed. Chapter III. takes up the practical application of the method. Chapter IV. is devoted to general considerations, cycloplegics, aids to accuracy, etc. Chapter V. is historical. A bibliography and index follow. The work ranks well with others of its kind.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Held at Baltimore, Md., December 11, 12, and 13, 1906.

THE PRESIDENT, DR. GEORGE H. NOBLE OF ATLANTA, GA., IN THE CHAIR.

Sulphate of Sparteine in Surgical Practice.—Dr. STUART MCGUIRE of Richmond, Va., said he believed he had accidentally discovered in this drug a valuable remedy for the prevention and treatment of postoperative suppression of urine. In the last five years he had lost more cases from postoperative suppression of urine than from all other causes combined, and this, despite the almost routine use of chloroform as an anesthetic. The cases had usually been those with preexisting nephritis from sepsis or cholemia. Shock had not apparently been a factor, as the condition would not develop for twenty-four or thirty six hours. A patient operated on for retention of urine or for jaundice due to obstruction of the common duct would do well for one or two days, and just as the patient was thought to be out of danger there would come the news that he was passing no urine. He would become restless, then listless, would develop a stupor which would rapidly deepen into coma, and would die with all the symptoms characteristic of uremia. In the treatment of this condition he had tried water by mouth, under the skin, and in the rectum; hot packs and vapor baths; cups and counter-irritants; strychnine, digitalis, and nitroglycerin; calomel and saline purgatives, and in one case stripping the kidney capsules, with uniformly bad results. Two years ago he began empirically the use of sulphate of sparteine, and he now had a record of six cases in which he was sure the drug was the means of saving the patient's life. Its therapeutic effect was to increase the blood pressure, make the pulse slower and stronger, and act as a powerful diuretic. Its action was manifest in thirty minutes after administration and lasted for four or six hours. To get results sulphate of sparteine must be given hypodermically in from one to two grains, repeated every three to six hours. Its use should not be delayed until suppression of urine existed, but it should be prescribed as prophylactic as well as a curative agent. He did not claim it was a specific, but it should be employed to the exclusion of other measures such as purgatives, transfusions, and hot packs. He did believe, however, from actual experience, that it was preferable to the drugs of the digitalis type in rapidity of action, ease of administration, and efficiency of results.

Dr. WILLIAM PERRIN NICOLSON of Atlanta, Ga., had used sulphate of sparteine in a similar way. He preferred it as a heart tonic to digitalis. Therapeutically, it combined the virtues of being a powerful heart tonic and of dilating the capillaries. An important point was to give it in large doses—say two grains. Usually it was put up by drug manufacturers in doses of one tenth of a grain. Its value depended on large doses. He recalled one case in which suppression of urine lasted for forty-seven hours, but the patient finally recovered.

The Comparative Advantages and Disadvantages of Hysterectomy and Removal of the Body of the Uterus.—Dr. J. WESLEY BOVEE of Washington, D. C., said it was found that an important proportion of cases of tumors thought to be simple fibromata or myomata had in reality taken on malignant degeneration or were complicated by a malignant degeneration of the corporeal endometrium. Carcinoma of the cervix had been detected within a few days after the removal of the body of the uterus, showing clearly it existed at the time of the supravaginal amputation. In innumerable instances removal of the cervical stump had been done at the same sitting, prompted by discovery of malignancy in the uterine body just removed. Not a few observers had seen cases in which fibromata had existed for years, the patients declining operation, and cancer of the cervix developing subsequently, with a fatal result. He had seen two such cases. One of them he saw first in consultation in 1880, and again a few months before her death in 1902. That cancer of the cervix occurred more frequently with uterine fibroids than without them had not been proven. The same could not be said of cancer of the body of the uterus. Admitting that the presence of fibroids in the uterine body had no influence with the development of cancer of the cervix, valuable information from statistical tables on the complications of fibroids is available to demonstrate the remarkable increase in the frequency of cancer of the body of the uterus as compared to its existence in the cervix as such complications. The percentage of cases of cancer located in the body and the cervix was generally estimated by many competent observers as 10 per cent. and 90 per cent. It was likewise conceded that the ratio was markedly changed in the presence of uterine fibroids. C. P. Noble found, in a study of 2,274 cases of uterine fibromata, that cancer in the body was found in 45, and of the cervix in 10 of them. This changed the percentages to 74 in the body and 26 in the cervix. The proportion of cases of cancer of the body of the uterus to those of cancer of the cervix was thus shown to be increased twenty six times in the presence of fibroids. Williams had found but four cases of cancer of the body of the uterus to 156 involving the cervix in 160 consecutive cases of uterine cancer coming under his observation. Winter, in studying 2,331 cases occurring in Germany, found the proportion was one to fifteen. Noble suggested the proportion of cases of cancer of the uterus to those of cervical cancer was about one to ten. Sutton had in 500 cases of fibroids of the uterus 63 that were more than fifty years of age. In eight of the 63 cancer of the body of the uterus was microscopically proven, and in two primary cancer of the Fallopian tube was noted. He had had 23 cases of cancer of the body of the uterus, in eight of which fibroids were present as a complication. Piquand had collected 179 cases of cancer of the body of the uterus complicated by fibroids, and had had in 1,000 cases of fibroids cancer of the body of the uterus as a complication in 15 cases. Robb had found that of 42 cases of cancer of the uterus six of them were of the corporeal variety, a proportion of one to six. Complete extirpation of the uterus was not an operation, even by the abdominal route, that necessarily taxed the patient's vitality to an extent appreciatively greater than did the removal of the body alone. The vaginal route was a much easier and more commonly practised operation than the removal of the body and not the cervix. Objections to the removal of the cervix with the body because of weakening of the vaginal roof and shortening the vagina were practically nullified by suturing the round and broad ligaments to the vaginal walls, and the fact that in employing the vaginal route these objections were forgotten. As against the removal of the cervix, when the body of the uterus was removed, the abdominal route was the only one to be considered. The comparative ease of the amputation was of moment only in critical cases. The cosmetic effect to young women deserved more consideration. Oftentimes retention of the portio vaginalis was deemed by them to be of great value. It would seem that in the young woman without a family history of malignant disease and in the absence of uterine growths the cervix should not be removed if the body was to be taken out by the abdominal route. In very critical cases in which the body of the uterus was to be removed by that route, even in the presence of tumors, it would occasionally be advisable not to remove the cervix. In practically all other cases the cervix should not be saved, and this injunction would seem to be the stronger in old women, particularly if evidence of uterine growths be present.

Dr. Isaac S. Stone of Washington, D. C., had never regretted having left the cervix. So far as malignant disease was concerned, it had been his good fortune to save two patients by subsequent operations, who had what was called subtotal hysterectomy done, with stump remaining, which was subsequently found to be malignant and operation was done. Both of these patients were still alive. However, one was a case of sarcoma. He thought a large number of surgeons were well satisfied with the mortality of the Baer operation of leaving the stump.

Dr. Henry T. Byford of Chicago said that no cut-and-dried rule could be laid down to take out the cervix in the class of cases under discussion. One would not think of removing the cervix in a young woman unless there was demonstrable malignant disease. Even in an old woman it was a dangerous procedure, and one attended with great difficulty. The cervix should not be removed unless there were good reasons for so doing.

Dr. Maurice H. Richardson of Boston recalled but one instance in which cancer of the cervix developed after supravaginal amputation for fibroids. While he had not looked up his records, he should say that cancer of the cervix was very rare after such operations.

Dr. Herman J. Boldt of New York said that so far as the occurrence of malignant disease in the cervix after supravaginal hysterectomy was concerned, it must be admitted that it did occur. He did not believe, however, that if the cervix was left it was a causal factor in the production of malignant disease. So far as the relative risk between supravaginal amputation and panhysterectomy was concerned, he did not consider that it cut any figure. One who was accustomed to doing pelvic surgery could do one operation as quickly as the other. The main question was, What was the condition of the vaginal vault subsequently? In the majority of instances it made no difference whether there was a good vaginal vault following supravaginal amputation, or whether there was a vaginal vault with more or less cicatricial tissue in it, but it did occasionally make a difference, for he had seen patients become markedly neurasthenic as the result of scar tissue in the vaginal vault, and he did not consider it desirable to do a panhysterectomy when the cervix was in a fairly normal position. When the vaginal portion of the cervix was diseased, the vagina torn, and the cervix eroded, the cervix ought to be removed; but otherwise he thought it was just as well to leave it because it made a better pelvic floor.

Dr. Robert S. Hill of Montgomery, Ala., said there were as potent reasons for leaving the cervix in some cases as there were in others for removing it. If we considered the anatomy of the pelvic floor we must conclude that the removal of the cervix weakened the pelvic diaphragm, and therefore postoperative vaginal hernia was more likely to occur. The verdict of the majority of the profession was that panhysterectomy was an operation of greater magnitude than supravaginal amputation of the uterus, when we considered the increased traumatism to the parts, the increased liability to injury of the rectum and bladder, and the increased chance of interfering with the ureters through cicatricial tissue, as well as the increased chance of infection by entering the vagina. He could not agree with the statement that panhysterectomy as an operation was of no greater magnitude than was supravaginal amputation of the uterus. This might be true in the hands of the most expert hysterectomists. But we must consider what could be done by the average surgeon, and not by the men of superior skill in the performance of hysterectomy. When the subject was considered from this standpoint, then it would seem to the speaker that supravaginal amputation of the uterus still had a place in the category of legitimate surgical procedures. As to the amputation of the body of the uterus increasing the chances of cancer of the cervix, he was not aware of any evidence which supported that position.

Extrauterine Pregnancy.—Dr. O. L. Shivers of Marion, Ala., reported two cases of extrauterine pregnancy.

An Improved and Accurate Method of Locating Foreign Bodies with the X-Ray.—Dr. Robert Carothers of Cincinnati, O., said the most important step in foreign body surgery was some definite idea of the location of the foreign body. The *x*-ray had been of untold value in developing this step. Stereoscopy as applied to radiography, called stereoskiagraphy, was the most improved method, and would seem to give the most accurate location of a foreign body. This idea had been worked up by many radiographers in different parts of the country independently of each other. The ordinary *x* ray plate looked flat. The stereoscope gave a perspective view very much as if the parts (bone and bullet) were before one in nature. Two separate plates were made of the same part without changing in the least the position of the part skiagraphed, which was placed on the compression diaphragm table, the compression diaphragm itself being discarded, on a hollow board or plate-holder, with a metallic bottom, so that the rays might be partially obstructed, and in this way one plate could be removed and a second supplied. The tube was held in the tube-holder, and with the use of a plumb-bob it was carefully centered through the center of the part to be skiagraphed onto the center of the plate. The plates were made with the tube placed one and three-eighths inches to either side of this central point, so that they were made from points two and three-quarter inches separated from each other, corresponding to the distance between the human eyes. The developed plates were placed in highly illumined boxes facing each other, and were from them reflected into two small looking-glasses which were placed at a right angle to each other with the apex of the angle placed between the eyes of the observer in the stereoscope. One now looked into the two looking-glasses, each eye in a separate glass, saw a separate plate; then by adjusting the plates and the stereoscope to get an exact focus, the two plates were made to look as one, and it would appear that there was one looking-glass behind which the observer looked, reflecting the object back onto the retina, producing a perspective view. This method was of especial value in locating foreign bodies in the spine, thorax, or abdomen, where it was almost impossible to get a plate which was not flat by any other method.

The Surgical Treatment of Thyroid Disease Based on Three Hundred Personal Observations.—Dr. Chas. H. Mayo of Rochester, Minn., said the medical profession of America was taking a progressive position in recommending operation as a cure for goiter, including also exophthalmic goiter. The simple goiters in girls at puberty were not included in this class. Excepting operations for malignancy and Graves' disease, the great majority of operations were those of expediency and not of necessity. Therefore, a low operative risk was imperative. In uncomplicated cases the mortality following operations was almost an accidental one. There were 110 cases of Graves' disease, with nine deaths, and but two of these were in the last sixty-four operations. In two sarcomas and six carcinomas there was one operative death, which occurred on the third day. Aside from those recorded, there was one death from pneumonia on the eighth day. Pathologically, there was a change in the gland which was essential to Graves' disease or hyperthyroidism. This was in the greater number, size, and shape of the cells, and in the lack of normal colloid. Patients were prepared as to lung complications, and the rhythm and tension of the pulse, which should be carefully investigated, as they were the danger signals. Very rarely was local anesthesia employed, the preference being for the open drop method of giving ether. The patients received from 1/120 to 1/150 grain of atropine and one-sixth of a grain of morphine, twenty to thirty minutes before the administration of the anesthetic. The position of the patient was head up (reverse Trendelenburg), with a roll of gauze under the

neck to cl[illegible] small tumor. A transverse curvilinear incision was made through the skin and platysma muscle, the sternohyoid muscles being separated at the midline. In exophthalmic goiter and complicated cases the anterior muscles on one side at least were severed as high as possible over the thyroid to preserve the nerve supply and break the scar effect. Cysts and encapsulated growths were enucleated. Other goiters were extirpated, care being exercised in preserving the parathyroids to prevent tetany and in protecting the recurrent laryngeal nerve. In this one was aided by leaving the posterior capsule of the gland in the extirpation. Sufficient gland substance should be preserved to prevent myxedema, and, as it depended upon the character of the gland, no definite rule could be given as to what constituted the proper amount.

Dr. George W. Crile of Cleveland, O., said that in a series of 114 operations upon the thyroid gland, his smaller experience had compared very well with the conclusions reached by Dr. Mayo, with the exception that he had been unable thus far to get as low a mortality as was reported by Dr. Mayo from operations in the presence of hyperthyroidism. In the late cases of colloid goiter of long-standing, if symptoms of Graves' disease appeared, he had found that operations on this class were comparatively simple and safe. Young persons with acute Graves' disease, coming on without previous goiter apparently, appearing with other symptoms, he had found to be great risks from an operative standpoint. Of the 114 operations upon the gland, there were five cases of carcinoma and five of sarcoma. In one of the cases of carcinoma the author noticed unmistakable symptoms of Graves's disease. He had not had a fatality in any case of Graves' disease engrafted upon a chronic goiter, but he had had three deaths in twenty cases of acute Graves' disease following operations.

Dr. Randolph Winslow of Baltimore said he had had the opportunity of seeing some surgical work on the thyroid gland done abroad this summer at the Kocher clinic and elsewhere, and had been particularly interested in the anesthetic employed in these cases. Personally, he had been using scopolamine-morphine anesthesia by injection as a means of general anesthesia, and the infiltration of the skin with the Schleich solution for strictly local anesthesia, and found that it worked well, and that, as a rule, the patients did not complain.

Toxemia of Pregnancy.—Dr. W. M. Jordan of Birmingham, Ala., called attention to the nonspecific nature of the liver lesions in cases of toxemia of pregnancy, and said that much the same character of changes occurred in toxemias from other causes. There was a decided tendency for toxemia cases to get worse after the uterus was emptied, except in the case of eclampsia, which for special reasons was not considered in the paper. The cause of this behavior of toxemia cases was attributed to a probable increase in the preexisting toxemia through the addition of toxins resulting from the process of involution of the uterus. For this reason pregnancy should be terminated at an earlier date than would otherwise seem necessary, as this probable post-partum increase in the toxemia must be allowed for. Attention was called to the probable unfavorable influence of anesthesia, as most of the inhalation anesthetics were to some extent liver poisons. Speaking of the treatment, the writer expressed himself as being a firm believer in radicalism. He advised that labor may be terminated as soon as it became evident that the symptoms were of toxemic origin. The reasons given by him were the impracticability of influencing the antitoxic function of the liver, and the unreliability of treatment directed against the toxemia itself.

Dr. D. F. Talley of Birmingham, Ala., read a paper in which he reported eight cases of toxemia of pregnancy.

Cholecystectomy, when Indicated; Some Operative Sequelæ.—Dr. I. S. Stone of Washington, D. C., said that cholecystectomy had become popular because cholecystotomy, or rather cholecystotomy, had frequently failed to cure patients with gallstone disease. He preferred the designation as just stated because the mere finding and removal of gallstones frequently failed to cure many of the invalids who had pain, jaundice, or other symptoms of some mischief about or within the biliary passages. Some operators spoke of dilatation of the common and hepatic ducts as a result of cholecystectomy, and Robson was convinced that this dilatation was a compensatory and perhaps a conservatory action, although he had found that stones developed in such dilated duct as they did in the gall-bladder. Cholecystectomy sometimes failed to prevent a recurrence of colics and of other symptoms which necessitated operation. An important question, therefore, naturally arose, Under what circumstances should the gall-bladder be removed? This question could not be answered until the possibility of definite knowledge of the hepatic and common ducts was considered, especially their patency and contents, and if they were the seat of an infection. A careful review of the recent literature convinced the author that however popular this operation had become, the bad results had not as yet been reported as generally as would appear desirable. Nearly all of those who favored cholecystectomy as an operation of choice agreed to operate when the gall-bladder had, by reason of trauma, infection, or malignant disease, become either useless or dangerous. They say, however, that the operation should add very little to the risk involved in a cholecystotomy. The Mayos removed two out of every five gall-bladders they inspected. They performed a cholecystectomy under the following conditions: When stones were lodged in the cystic duct, the removal of which would leave permanent interference with drainage; when the disease was confined to the gall-bladder, and when it was filled with pus or any fluid or bile which had undergone septic change; when the gall-bladder had become greatly thickened or had lost its function, or was the seat of inflammation without stone in which the liver ducts were not involved, or in malignant disease. The mortality of cholecystectomy had been compared to that of cholecystotomy. The writer thought, however, that very few would succeed in obtaining the low rate reported by the Mayos, who had a record of 1.37 per cent. for cholecystotomy and 1.64 per cent. in cholecystectomy. The author thought the two operations could not be compared for safety in the hands of most operators. Cholecystectomy would be performed by all surgeons for conditions which were a result of severe, long-standing disease which had caused any complications, besides the changes in the gall-bladder itself. On the other hand, cholecystotomy was one of the least dangerous operations in abdominal surgery when the patient had only gall-bladder disease, or possibly a stone with healthy bile. Therefore, the author thought that Robson's figures, 57 operations, 33 of which were for gallstones complicated by various morbid states, with a recovery in 32, and 13 of which were for fistula, were without signification, unless compared with precisely similar cases in the hands of others. The same might be said of 72 cholecystectomies collected by Klieber, with a mortality of 16, 7 of which were due to the operation. The contraindications to cholecystectomy were not numerous, but were of great importance. All the authors agreed upon one point, namely, the propriety of leaving the gall-bladder for drainage purposes in pancreatitis, especially the chronic interstitial variety. The same opinion was expressed by most authors regarding the propriety of leaving a gall-bladder when a cholecystenterostomy might be needed, as in certain common duct obstructions. The writer's experience with cholecystectomy had been satisfactory in some particulars and he found it especially useful in those cases where the gall-bladder had been out of use for a long time. In contracted bladder with an open choledochus, in obstructions of the cystic duct, whether due to stone or other cause, which have resulted in permanent alterations of either bladder or duct, he found the very best indications which would assure perfect cure. In cholelith-

iasis he had had two unfortunate results, because stones continued to pass at intervals after the removal of the gall-bladder. He knew of a third case in the practice of another surgeon where the same difficulty occurred. Cholecystectomy necessitated a better and clearer knowledge of the hepatic ducts than we had hitherto possessed, or the operation would fall into ill favor. The demand at the present time was for a safe and practical method of insuring patients against subsequent attacks of pain, jaundice, or any kind of distress after gallstone operations.

Dr. Robert T. Morris of New York said that in the past surgeons groped over the abdominal wall in the dark, and it was only recently that they had touched the button and turned on the light. He thought that surgeons could turn on the light on this subject if they included all gallstone and cholecystitis cases under one heading, and called them cholecystitis cases and adhesion cases. Adhesions in the region of the gall-bladder and bile ducts would produce the same symptoms as gallstones, whether gallstones were present or not. He cited a case in point on which he had operated. Proper selection of cases was everything in surgery. With increased experience and further observation, he inclined more and more toward the complete removal of the gall-bladder, for the reason that there was a chronic infection going on all the while in many patients.

Dr. W. P. Carr of Washington, D. C., thought surgeons should consider these cases more as instances of cholecystitis and the gallstones as incidental, when it was remembered that gallstones did not cause any symptoms until they produced cholecystitis or obstruction of the common bile duct. It was really a cholecystitis or an obstruction of the bile ducts that led to the diagnosis of gallstones. The gall-bladder should be left unless there were positive indications for its removal.

Dr. Samuel Lloyd of New York said the possibility of an occlusion of the duodenal opening in gallstone cases was not infrequent. He had operated once for congenital closure of the opening from the ampulla of Vater into the duodenum. In a number of gallstone cases surgeons found a very much distended common duct, that is, the duct was distinctly larger than usual, and one should suspect occlusion at the ampulla of Vater, the stone coming down and acting as a ball-valve, pushing against the duodenal opening, producing an inflammatory condition, and finally contraction. The only hope of possible recovery of patients with this type of trouble was to do a choledochoduodenostomy. He spoke of inspissation of the bile throughout the ducts in some cases.

Dr. Henry O. Marcy of Boston referred to the early history of surgery of the gall-bladder and gall-ducts, and said he had written a good deal on this subject. If anyone would take the time to look up the early literature he would find that Marion Sims in his time went over the ground as thoughtfully and carefully as anyone could do it to-day. Eighteen years ago Dr. Marcy operated on a woman for the removal of a gallstone in the common duct. A few weeks ago he operated on the same patient for the purpose of releasing adhesions which had caused biliary obstruction. The woman recovered from the operation.

Dr. J. Montgomery Baldy of Philadelphia said that in many cases a diagnosis of gallstones or of gall-bladder disease was made, yet at the operation no gallstones or disease was found. No adhesions, no cancer, and no occlusion were found; yet the patient had undoubted symptoms, so far as one could tell, of long-standing gallstone trouble. On the other hand, in other cases operations had disclosed disease of a gross character of the gall-bladder; the patient had been relieved apparently, but after leaving the hospital there was a return of the symptoms, even after a secondary operation or cholecystectomy. He recalled one case of long-standing of that character. He admitted that this entire field was as yet very largely unsolved, and so far as his own practice was concerned, there were still elements of doubt both diagnostically and pathologically.

Dr. Joseph Price of Philadelphia reported four recent cases, and said that in two, when he opened the abdomen, he had to side-step to get out of the way of the gallstones. The patients were dying, and he was called to see and operate on them because they were dying. They were not suitable for the removal of the gall-bladder. He thought if he had attempted to remove the gall-bladder in these cases he would have lost the patients on the table. He made toilets, drained, put in coffer-dams, and the patients were now well.

Dr. Frank Martin of Baltimore called attention to two cases of cholecystectomy which he reported in 1895. Since that time he had not changed his opinion, although he had not operated on many cases since. He had resorted to cholecystectomy in fourteen cases out of sixty. In most of the fourteen cases there was a chronic cholecystitis, with disorganized gall-bladder, and acute gangrenous infection. In two or three of them there was an acute gangrenous inflammation of the gall bladder. In these cholecystectomy was followed by excellent results. He had had no deaths or serious shock following the operation.

Dr. Howard A. Kelly of Baltimore said that when he operated for any intraabdominal pathological condition it was now his practice to examine the gall-bladder, among other organs, to determine whether it was diseased or whether gallstones were present or not. He believed in cholecystectomy where the gall-bladder was grossly diseased, although one could not always do an ideal operation. He recalled two cases in which an ideal operation could not be done on account of the great density of the adhesions.

Dr. Charles H. Mayo of Rochester, Minn., said that in their clinic they occasionally operated, after having made a thorough examination, and thinking they had a case of gallstones to deal with, and found no stones. It was rare, however, for them to diagnose gallstones or disease of the bile ducts, even though no stones were found, without finding some abdominal condition which would have made it necessary to operate. He did not think a patient cared whether he had gallstones, duodenal ulcer, or ulcer of the pylorus, if he could be relieved. In other words, the patient had no special preference, although he might think it nice to have the gallstones in a bottle to show to his relatives and friends, proving that he had had that trouble. Some years ago they operated and found a blue gall-bladder, which was ordinarily considered a healthy gall-bladder, but covered with adhesions. They drained such gall-bladders and tried to relieve the adhesions. Two of these cases, however, were recperated, one a year afterward, the other two years thereafter, for the same condition, and at that time they found that a duodenal ulcer was the cause, which had been overlooked at the first operation.

The Treatment of Hemorrhage by Direct Transfusion of Similar Blood.—Dr. George W. Crile of Cleveland, O., said the basis for the clinical use of transfusion of blood in the treatment of hemorrhage was as follows: That normal blood of an individual of one species was physiologically equivalent to that of any other individual of the same species, and was therefore interchangeable; that the vascular systems of two individuals might by an end-to-end anastomosis of vessels be united, that such union might be accomplished so as to approximate intima to intima; that the blood that was transformed across this artificial continuity did not come in contact with any foreign body or any tissue but the intima; that under these conditions blood would not clot and the rate of flow and the amount transferred were under immediate control. Only the gravest and apparently hopeless cases had thus far been transfused. Altogether fourteen clinical cases had been observed. All were done painlessly under morphine and cocaine anesthesia. No unfavorable symptoms of importance had been noted. The donors had regained their lost blood in from five to six days. Every donee had felt immediate improvement. Striking evidence of this had

been shown in the facies, the improved circulation, and the feeling of well-being and even buoyancy. The technique was by no means simple, and must be carried out with absolute precision to prevent clotting. In no instance was there observed nephritis, hemoglobinuria, agglutination, hemolysis, or laking of blood. The transfused blood apparently exercised no unfavorable influence on its new host, and the latter none upon the new blood. The blood of individuals of the same species, therefore, seemed to be physiologically interchangeable. Certain cases of pathological hemorrhage had been cured by the addition of fresh normal coagulable blood. Transfusion in a case of pernicious anemia was tried with totally negative results. Partly on the basis of Wright's work on opsonins and partly on other grounds, two cases of transfusion after bleeding in tuberculosis had been done. In every instance in the research and in the clinic the effect of hemorrhage had been overcome by the replacement of the lost blood by means of transfusion. He was not yet ready, however, to reach conclusions or to make deductions or predictions. This was but a report of progress.

The Management of Laparotomy Patients and Their Modified After-Treatment.—Dr. HERMAN J. BOLDT of New York, in a paper on this subject, said that no particular preparatory treatment was necessary for patients upon whom it was intended to do an abdominal operation, unless the operation involved the opening of the stomach or the bowels. Stomach lavage was of benefit at the conclusion of the operation. Patients should not be kept unnecessarily under an anesthetic. The application of a tight bandage around the upper part of the thighs to keep a blood reservoir in the lower extremities in exsanguinated and very weak patients, was excellent. The same might in exceptional cases be done with one of the upper extremities. These bandages were taken off as soon as the operation had been completed, and thus more blood was thrown into the trunk. The administration of strychnine during and after an operation should be used with more care than was usually done. The intravenous infusion of a 0.9 per cent. saline solution should not be too long delayed when the condition of the patient made it evident that its employment might be of benefit. In instances of large myomata, where the patient had been much exsanguinated by hemorrhage, it was desirable that the infusion be begun as soon as the patient was fully under an anesthetic, so that by the time the operation had been completed about one thousand to fifteen hundred c.c. might have been infused. The application of a very simple dressing over the wound, and the adjustment of a snugly-fitting Scultetus bandage made of oxide of zinc plaster were made. The administration of a dose of morphine was desirable if there was restlessness or pain, the medication acting clinically as a heart stimulant. The author allowed regular diet and unrestricted mobility within twenty-four hours after the operation, unless specially contraindicated. Patients were allowed to get out of bed as soon as possible after an operation. The author avoided forced catharsis before the first four or five days after an operation, unless there was a special indication for it. In cases where resort to vaginal drainage was had, or where it was evident that there would be some secretions intraperitoneally after an operation—as in purulent cases and oozing from torn adhesions—trunk elevation was employed as soon as the patient was put into bed. For this the employment of a bed lifter, which the author exhibited and described, or the placing of high blocks or chairs under the head of the bed, was preferable to back-rests.

The Treatment of Senile Gangrene.—Dr. EDWARD H. OCHSNER of Chicago called attention to the fact that there were two distinct types of senile gangrene, the first occurring in cases with only moderately generalized arteriosclerosis, but in which there was a distinct mural thrombus. In this class of cases there was an early formation of a distinct line of demarcation, and it was best to delay operation until this line of demarcation had become well established, and then to amputate directly through the line of demarcation. In the second class of cases there was a marked generalized arteriosclerosis, the whole affected extremity was markedly involved, there was no tendency to the formation of a line of demarcation, and an early high amputation was indicated.

(To be concluded.)

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held September 18, 1906.

DR. W. F. CAMPBELL IN THE CHAIR.

The Water Supply of New York.—Mr. CHAS. N. CHADWICK, Commissioner of Water Supply of New York, read this paper. He referred to the fact that five years before the same subject. His object now, as then, was to describe the work that was being done to increase the water supply of New York. Ten years ago the Merchants' Association and other civic bodies began the agitation, which resulted in the appointment of a committee composed of delegates from the Chamber of Commerce, the Manufacturers' Association, and the Board of Fire Underwriters. In 1900 a board of eminent engineers was appointed. This selected the Catskill region as the place best adapted to furnish the increased water supply. The Adirondacks had been considered. The Housatonic watershed and the Ten Mile Creek had been rejected on account of interstate complications. The Hudson River as a source of water supply was rejected on account of its pollution and the necessity of building a filter for its water. If the Adirondacks region had been accepted it would have been necessary to build a reservoir at great expense in this remote locality. The Catskill watershed appeared to be the one best fitted to furnish the water most economically. It was, of course, necessary to divert the water from the Esopus, Rondout, and Schoharie. For the prosecution of the work the New York Board of Estimate appropriated $161,000,000. A State commission had to be appointed to adjust the claims of towns whose supply of water might be diminished by the utilization of the Catskill watershed. The enormity of the task that confronted the engineers was illustrated by the fact that 230 miles of territory had to be surveyed in order to find the best eighty miles for the aqueduct. In addition to the complex organization of the various corps of engineers, there was established a laboratory in which analytical chemists determined the nature of the various soils, the tensile strength of cements, the strength of concrete, etc. The peculiar geology of the Hudson River presented a difficult problem for solution. It was decided to tunnel under the Hudson River at Stony Point. One of the most difficult problems was that of running an aqueduct under the Rondout Valley. The plans included the building of a reservoir in the Catskills, having a length of fifteen miles and a width of one and a third miles. The enormity of this undertaking was to be appreciated by considering the fact that in building the reservoir eleven villages were to be wiped out, and a portion of the Ulster and Delaware Railway had to be removed. An additional reservoir was to be built at Kensico, having a fifty days' supply, and at Scarsdale, a filtration plant. It was estimated that at the cost of $161,000,000 the completed improvements would yield a supply of 500,000,000 gallons of water per day. The plans included an aqueduct to Long Island which would yield 52,000,000 gallons per day. For speedy relief it was intended to construct first the aqueduct from Stony Point to Eshoken reservoir, a distance of fifty-eight miles, to empty into the Croton watershed. This was to be accomplished in eight years.

The Underground Water Resources of Long Island.—Prof. ISAIAH BOWMAN of the Department of Geology, Yale University, read this paper. He said that the demand for water was always a serious one in the life of municipalities. Hydrology was consequently reduced to a science.

As a member of the Government Geological Survey, the speaker had made an investigation of the underground water resources of Long Island, which formed part of a special government report. He had found extensive water sources on the south side of the island. The deep-ground water was practically unlimited, the bedrock of Long Island being a continuation of that of the mainland. There was a continuous flow of ground water toward the sea. This flow was carefully measured. Natural underground reservoirs were furnished by impenetrable beds of clay overlaid by fairly coarse gravel, so that wells driven to the clay would serve to tap these reservoirs. Most of the wells would yield permanent and abundant supplies of water. The sand and gravel through which the water had to travel in order to reach the lower levels furnished an efficient filter for all organic impurities. Whatever part of this supply was not available immediately for drinking purposes could be made so by storage in reservoirs either exposed to the sun or possibly supplied with cultures of opposing organisms.

Stated Meeting, Held October 16, 1906.

Dr. W. F. Campbell in the Chair.

Presentation of the Medical Library of the Late Dr. Willard Parker.—Dr. James Peter Warbasse, Directing Librarian, made the address of presentation of this library of 400 volumes, a gift to the Library of the Medical Society of the County of Kings from Dr. Willard Parker of New York City.

The Treatment of Certain Chronic Infectious Processes.—Dr. Lewellys F. Barker, Professor of Medicine, Johns Hopkins University, read this paper. He alluded to the fact that the bacteriologists taught a great deal about the nature of infection and that it was the duty of clinicians to apply this teaching in diagnosis and treatment. The process of infection had been made clear; also how the body entered into competition with lowly organisms in the struggle for existence. This teaching included the mechanisms of defense, the ways in which they were overcome, and the mode of entry of bacteria and protozoa into the body. It was shown that some bacteria entered the body by one door only—the cholera vibrio entering only through the intestinal epithelium; likewise the typhoid bacillus. Other parasites entered by various paths, *e.g.* the staphylococci and streptococci. The period of incubation was the time during which the organisms multiplied until they were numerous enough to have an appreciable effect on the host. This was produced either by the toxins or by the bodies of the microorganisms. Sometimes the invasion was merely local, as in an ordinary boil. Sometimes the bacteria spread by direct continuity, as the extension of the gonococci from the urethra through the prostate, bladder, ureter, to the pelvis of the kidney. Another form of extension was by metastasis, *e.g.* the arthritis and endocarditis secondary to tonsillar infection with streptococci. The rose spots in typhoid were metastatic infections of the skin, containing typhoid bacilli. True septicemia was an expression of a general blood extension of microbic infection, *e.g.* general streptococcus and staphylococcus infections, and quartan malaria. It was remarkable that a certain organism, like the gonococcus, might have a varying behavior, in one case being confined to the urethra, in another extending to the prostate, in another, spreading by metastasis to the heart and joints, or even giving rise to a true gonococcus septicemia. Different bacteria also had different predilections; leprosy had an affinity for the nerve trunks and multiplied in them; the cholera vibrios thrived only in the intestinal epithelium, even when injected into the blood. The gonococci, when inoculated into the blood, chose the susceptible joints. Other bacteria, like the staphylococci, streptococci, and pneumococci, had less limited predilections. The bacteria overcame the mechanisms of defense in various ways by means of toxins, endotoxins, lysins, aggressins, antigens, and the like. The general phenomena of infection were leucocytosis or leucopenia, fever or subnormal temperature, hemorrhagic diathesis, splenic tumor, anemia, general disturbances of nutrition in the organs, parenchymatous degeneration of the kidney, and changes in the nerve-cells. Rather than symptoms of infection, these were to be regarded as biological reactions, taking place in the body during infection. The biological reaction was frequently associated with a subsequent more or less complete immunity. One had to differentiate between the acute and the chronic infections. Typhoid, cholera, plague, pneumonia, and influenza ran usually a very acute course; the patient was either killed or soon recovered. In chronic infections, like tuberculosis, leprosy, and actinomycosis, there was little tendency to spontaneous cure. But the distinction between acute and chronic infections was not a hard-and-fast one. As regards the varieties of biological reactions, it was noted that in antitoxic immunity the body manufactured a substance to neutralize the soluble bacterial poison, as in diphtheria and tetanus. In the majority of infections there was instead an antibacterial immunity, as, in typhoid fever or cholera, the body elaborated substances which prevented the further growth and life of these bacteria. The antibacterial substances were either agglutinins, as evidenced by the Grüber-Durham-Widal reaction, or the bactericidal substances, which actually killed the bacteria, or the bacteriolytic substances which in addition dissolved them. Finally there were the substances recently discovered by Wright of London, which neither killed, clumped, or dissolved the bacteria, but acted upon them in some mysterious way, modifying them in such a manner as to make them suitable food for the leucocytes. They sensitized the bacteria for the leucocytes, and acting as substances that catered to the leucocytes, they were called by Wright "Opsonins." Some infectious processes yielded a permanent immunity after a simple attack had run its course, while others apparently yielded no immunity at all. In diseases like tuberculosis and leprosy, it was hard to find evidences of immunity. Such diseases were apt to last the entire lifetime of an individual. The speaker commended Dr. Rickett's book on "Infection, Immunity, and Serum Therapy" as a valuable exposition of these subjects, giving a clear and succinct account of the newer work. The speaker next discussed the therapeutic measures employed in combating chronic infections and the principles underlying the former. Ever since Hippocrates physicians had been trying to help nature. Gradually a whole series of measures had been found. In all times the principal object was to keep up the strength of the patient, to maintain the natural resources of defense. Bacteriologists had proven that with good food, sufficient sleep, and relief from strain, the mechanical defenses were better, the opsonic index higher, and the bactericidal power of the blood greater. The first therapeutic measure discussed was that of the use of chemical disinfectants. The object was to open up the infected part of the body and wash it out with antiseptics. This method had its uses, but its vogue was getting less and less. Surgeons were relying more on opening up a part and washing it out with substances not chemical disinfectants. This was a fortunate change, for substances, powerful enough to kill bacteria, would also succeed in killing the cells. This was especially true in pyogenic infection. Some chemical disinfectants also destroyed this substances in the blood which had the special function of fighting the bacteria. A minute quantity of lysol in the blood was capable of doing this. The method of surgical extirpation of the infective focus was also not without its dangers. In the presence of a tuberculous joint this was fully realized, and surgeons succeeded best by leaving it alone. Efforts at excision led to diffuse miliary tuberculosis. Moreover, the incision stirred up the infective agent and interfered with nature's powers of resistance. As the result of massage of such a joint the opsonins were diminished in amount. Massage of a tuberculous joint

caused inoculation of the patient, which might poison his body and interfere with its native powers of dealing with the infection. Simple percussion of the chest or having twelve students percuss it might likewise cause a diminution in the amount of opsonins and in the natural resistance. The next therapeutic method alluded to was that of increasing the flow of blood to a part by means of hot fomentations, hot ovens, acute hyperemia, counterirritation, cautery, or sinapisms. The rationale of these procedures was now understood more than formerly. They increased the amount of lymph, blood, and phagocytes in the part, and also the amounts of antitoxic and antibacterial substances. They increased also those sensitizing substances known as opsonins which prepared the bacteria for the phagocytes. In the presence of suppuration poultices were often used. Why did not the infection cure itself? The reason was that the lymph, blood, and leucocytes accumulated to so great an amount that they could not get out. The bacteria used up the antibacterial substances, and no new ones could get in. So the rational procedure was to open up the part, let out the waste, and allow fresh blood and phagocytes to come in and complete the cure. In localized chronic infections massage served to increase the flow of blood, and had the same effect as passive hyperemia. The Bier method of producing the latter consisted in compression. If the wrist joint was involved the veins of the forearm were compressed, allowing the arterial blood to flow to the joint, but preventing the venous blood from getting out. The joint was thus flooded with blood-serum, phagocytes, bacteriolysins, bactericidal substances, and opsonins. In Bier's method there was no easy outflow of the serum until the obstruction was removed. To enhance the value of this method Klapp made an incision into the affected part, after which passive hyperemia was produced. This insured the venous engorgement and increased the lymph formation of Bier's method, and at the same time effected an exit of lymph through the incision, exposing the part to a continuous flow of fresh serum, and its contained protective substances. The next therapeutic method discussed was that of serum therapy. Only two or three sera proved their usefulness; they were the antitoxins for diphtheria, tetanus, and perhaps that of snake-poisoning. The antipneumonic, antistreptococcic, and antityphoid sera, although bactericidal, had practically no antitoxic value. The products of the living activity of these germs were practically harmless, these germs owed their virulence to the endotoxins which were set free when the bacteria died and were broken down. The streptococci, staphylococci, gonococci, typhoid, and cholera germs did not produce soluble toxins in any appreciable quantity, and the symptoms of infection were to be accounted for only by the endotoxins set free when the bacteria died. According to Pfeiffer, the organism did not build antibodies to these endotoxins; there could not be antiendotoxins comparable to the antitoxin of diphtheria. Bactericidal substances might be of value, but if injected into the system they would kill the bacteria, set free the endotoxins, and actually make the patient worse. It had not yet been found possible to produce a serum containing so rich a content in opsonins as to be available for human inoculation. It was found possible to increase the opsonins in horse's serum, but not in sufficient concentration as to make this form of treatment efficacious. There was as yet no knowledge about the other possible antibacterial substances that might help in the production of immunity. Antibacterial sera were as yet disappointing. A method of treatment recently urged by Wright was that of inoculation with the bacteria themselves. The symptoms of tuberculosis were due to the endotoxins set free by the death of the bacilli. It was found that in various forms of tuberculosis, as in tuberculous cervical adenitis and in tuberculous arthritis, there was a lowering of the opsonic power of the blood. Bacterial inoculation produced an increase in the opsonic power. Wright had devised a method of measuring the opsonic index. In cases of tuberculosis in which the opsonic index was high, the body was doing well in the battle and inoculation was unnecessary. The injection of minute quantities of dead tubercle bacilli served to increase the opsonic index in cases in which it was low. It seemed as if in certain chronic tuberculous infections the body was not destroying enough tubercle bacilli to cause the biological reactions which gave rise to the opsonins. By artificially introducing dead tubercle bacilli, the production of opsonins was stimulated so that the body could fight the living tubercle bacilli to better advantage. This was the principle underlying the tuberculin treatment of tuberculosis, as still practised with apparent success at Saranac Lake by Trudeau. The bacterial inoculations were found by Wright to be helpful in the treatment of tuberculous glands and lupus, and in the cure of tuberculous sinuses after operation. The speaker described the method of determining the opsonic index. It consisted in drawing from the patient's finger a little blood, which was diluted with sodium citrate and centrifugalized so as to obtain the white blood corpuscles in a layer. Some of these were mixed with a suspension of tubercle bacilli and the patient's serum. A smear taken from this mixture after it had been kept for half an hour in the thermostat was stained and the number of bacilli ingested by fifty leucocytes was counted. On dividing by fifty this gave the average number of bacteria ingested by each leucocyte. The normal number of bacteria taken up by each leucocyte would represent the index 1.00. Twice that number would give an opsonic index of 2.00. The work of Wright was confirmed by Hektoen of Chicago, by Simon of Baltimore, and Potter of New York. Among the cures effected by Wright's method were tuberculous cystitis and furunculosis. Large doses of bacterial vaccines were harmful in producing a marked diminution in opsonic power. The speaker next alluded to various recurrent metastatic infections having a chronic course, particularly polyarthritis and endocarditis. The majority of the so-called acute and subacute rheumatisms, many of the chronic forms and some of the cases of arthritis deformans were instances of infectious arthritis. The joint infections were due to local foci situated elsewhere. The persistence of the primary focus led to recurrent exacerbations in the joints. In a large percentage of the cases this primary focus was in the palatine tonsils, even though the latter were atrophic. Such local focus might be in the pharyngeal tonsil, or in the gums, as in pyorrhea alveolaris (Rigg's disease). In women the uterine canal or the Fallopian tubes might be the seat of the local infection. Gonorrheal rheumatism was the first of the metastatic arthritides to be recognized. Other local sources of metastatic joint disease were otitis media, or disease of the accessory sinuses of the nose, or even bronchitis, pneumonia, or enteritis. The obvious treatment of these metastatic infections was removal of the local cause. The common endocarditis in young people was strongly suggestive of a primary focus of infection. This view was supported by the analogical rheumatic endocarditis. In many cases the endocarditis was secondary to a tonsillitis. An excision of an hypertrophied tonsil might be the sole means of preventing a recurrence of an endocarditis. In very young children there might be some protective function in the physiological activity of the tonsils connected with an internal secretion. This might make one hesitate to remove the tonsils in them. But in later life this was not to be considered. Even in very young children the removal of the palatine tonsils would leave the lingual tonsil to carry on the function of internal secretion. Acute tonsillitis was to be regarded as a very serious infection on account of its metastatic possibilities, and therefore rest in bed, together with very active therapeutic measures, were to be enforced in order to combat the disease and overcome it in time to prevent metastases. The responsibility for a great deal of polyarthritis, endocarditis, and perhaps acute and chronic nephritis rested upon the shoulders of the general practitioner who failed to remove the local exciting cause.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

MEDICAL EXAMINERS STATE OF FLORIDA; REGULAR BOARD.

October 17 and 18, 1906.

ANATOMY.

1. Name the bones and ligaments of the ankle joint.
2. What bones form the shoulder?
3. Facial artery—origin, course, and distribution.
4. Define and describe capillary circulation.
5. Mention the salivary glands and their ducts. State where these ducts open.
6. Give the gross anatomy of the stomach.
7. Into what and how far from the pyloric orifice of the stomach does the ductus communis choledochus normally open?
8. Describe the appendix vermiform. Locate McBurney's point for performing appendectomy.
9. What is the pons Varolii, and where situated?
10. Give origin, course, and distribution of median nerve.

PHYSIOLOGY.

1. Describe the normal pulse; state the factors active in its maintenance, and give the rate during infancy, youth, and adult life.
2. Describe a complete physiological revolution of the heart.
3. Give the principal characteristics of gastric juice in man.
4. Describe the phenomena of (a) asphyxia, (b) syncope, (c) sleep.
5. What changes are produced in the air and in the blood by respiration?
6. Define (a) tonic muscular contraction; (b) clonic muscular contraction. Give an example of each.
7. State the function of the anterior spinal nerve roots. How is the function proved?
8. Describe the fetal circulation.
9. What is (a) an efferent nerve, (b) an afferent nerve? Give an example of each.
10. What is the composition of human milk?

SURGERY.

1. Name five forms of bacteria and the surgical disease produced by each.
2. Describe thrombosis and embolism. Give the cause of each.
3. What causes gangrene? Name two varieties. Give treatment.
4. Define suppuration and give the cause. What is an abscess?
5. Define inflammation and name three varieties. Give five cardinal symptoms of inflammation.
6. Give etiology, symptoms, and treatment of iritis.
7. Give the diagnosis and treatment of fracture of the clavicle.
8. What important structures would be divided in an amputation four inches below the knee joint?
9. Give the symptoms of a dislocation of the wrist joint. Method of reduction and treatment.
10. Describe the method of sterilizing the field of operation, the hands of the operator and his assistants, and the instruments for a major surgical operation.

GYNECOLOGY.

1. What is the normal size and position of the uterus?
2. What do you ascertain from a digital examination and what constitutes a complete gynecological examination?
3. Give symptoms and treatment of acute vaginitis.
4. What pathological conditions and symptoms usually follow laceration of the cervix uteri?
5. Give symptoms and treatment of retroversion of the uterus.
6. What is oophoritis, and how could you diagnose it?
7. Give etiology and treatment of salpingitis.
8. Enumerate symptoms of sarcoma of the mammary gland.
9. What are the nervous manifestations of amenorrhea?
10. What is a vesicovaginal fistula, and explain the operation for same.

THERAPEUTICS.

1. Define what you understand to be the therapeutic limit of a drug, taking digitalis for an example.
2. Give the medicinal uses of belladonna, and state from what source it is obtained.
3. Write a prescription for intertrigo in infants.
4. Name the indications for the use of morphia, sulphate, atropia and aconite, and give the physiological doses of each.
5. What remedies would you prescribe to obtain intestinal antisepsis in typhoid fever?
6. Give the physiological action and therapeutic uses of the officinal digestive ferments.
7. Give the officinal name, composition, and therapeutical uses of Lugol's solution.
8. Litharge. Officinal name and medicinal uses.
9. Manganese. Division into groups. The officinal salt most used, and doses of same.
10. Sedatives. Divide into classes, and state upon what conditions may a sedative become a stimulant.

OBSTETRICS.

1. What are the three stages of normal labor?
2. Signs of pregnancy at end of first three months?
3. Define menstruation.
4. Symptoms of extrauterine pregnancy.
5. Mechanism of labor in R. O. A.
6. Management of breasts after delivery.
7. Treatment of puerperal sepsis.
8. Treatment of pregnancy complicated by nephritis.
9. Treatment of eyes of new-born.
10. Give methods of preventing tears of perineum.

CHEMISTRY.

1. Define the terms matter, solids, liquids, gases, and water of crystallization.
2. Name the five gaseous elements.
3. Give the chemical formula of nitric acid, and mention its properties.
4. What metals belong to the arsenic group?
5. Give the usual tests for sugar and albumin in the urine.
6. Describe the method of making tests for the diazo reaction in suspected urine.
7. Give antidote for arsenic poisoning, and how to prepare same.
8. Give antidotes for caustic potash poisoning.
9. Give tests for salts of sodium and potassium.
10. Name the element found in greatest abundance on our earth and mention its properties.

It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

MEDICAL EXAMINERS, STATE OF FLORIDA; REGULAR BOARD.

October 17 and 18, 1906.

PHYSIOLOGY.

1. The pulse is the impulse conveyed to the column of blood in the arteries by the contraction of the ventricles and the propulsion of more blood into the already full arterial system. The characters of the pulse which are of most importance are its force, frequency, length, rhythm, and tension. It is maintained by the ventricular systole, the elasticity of the arterial walls, and the volume of the blood in the vessels. In infancy the rate is about one hundred and twenty a minute; in youth about eighty-five, and in adult life about seventy.

3. It is a thin, colorless, acid fluid, with specific gravity of about 1.002, and containing from one-half to one per cent. of solids. The average daily amount has been placed anywhere between six and twelve pints. It contains (besides water) hydrochloric acid, pepsin, rennin, mucin, and salts of sodium, potassium, calcium, and magnesium. The pepsin is a proteolytic enzyme which will only act in an acid medium; the rennin coagulates caseinogen.

5. The changes produced in the *air* by respiration are:

	Inspired Air.	Expired Air.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	0.4 per cent.	4.4 per cent.
Other gases	Rare.	Often present.
Watery vapor	Variable.	Saturated.
Temperature	Variable.	That of body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

In the *blood* the changes take place in the capillaries of the lungs, and are: (1) the giving up of the CO_2 by the venous blood, (2) the absorption of oxygen during inspiration, (3) the blood is cooled, and (4) it also loses a small amount of watery vapor.

6. In tonic muscular contraction the muscle remains for some time in a state of rigid contraction. In clonic contraction the muscle alternately contracts and relaxes. Tonic muscular contraction occurs in tetanus; clonic, in an ordinary convulsion.

9. Efferent nerves carry impulses away from the nerve centers. Afferent nerves carry impulses to the nerve centers. The motor nerves are efferent; the sensory nerves are afferent.

SURGERY.

1. (1) Streptococcus pyogenes, producing abscess; (2) bacillus tetani, producing tetanus; (3) bacillus anthracis, producing malignant pustule; (4) bacillus tuberculosis, producing tuberculous disease of bones or joints; (5) streptococcus erysipelatis, producing erysipelas.

2. *Cause of thrombosis*: (1) changes in the walls of the blood-vessels, due to the presence of infection or foreign bodies; (2) changes in the blood, whereby its tendency to coagulate is increased; (3) diminished rate of the blood flow, due to weak heart action or obstruction. *Embolism* is generally due to thrombi, but is also caused by fragments of vegetations or atheromatous or calcareous masses from the cardiac valves or the intima of the arteries; other causes are parasites, pieces of new growths, pigment granules, fluid fat, or air.

4. Suppuration is a special form of inflammation, in which the exudate is unusually prolific in cells, and in which pus is found. The cause of suppuration is the invasion of the tissues by pus-producing bacteria, when the said tissues are in a state of lowered vitality or are not capable of withstanding and disposing of the bacteria and their products. An abscess is a circumscribed collection of pus in a newly formed cavity.

8. Skin; fascia; bones, tibia, and fibula; interosseous membrane; muscles, tibialis anticus, tibialis posticus, extensor longus digitorum, extensor proprius hallucis, flexor longus hallucis, flexor longus digitorum, peroneus longus, peroneus brevis, soleus, gastrocnemius, and the tendon of the plantaris; arteries, anterior tibial, posterior tibial, peroneal; veins, the venæ comites of the arteries, external saphenous, internal saphenous; nerves, anterior tibial, posterior tibial, external saphenous, communicans peronei, musculocutaneous.

GYNECOLOGY.

1. In the nulliparous adult the uterus is about three inches long, about two inches wide at the upper part, and about one inch thick. The uterus lies between the rectum behind and the bladder in front; it is below the abdominal cavity and above the vagina. Its position is one of slight anteflexion, with its long axis at right angles to the long axis of the vagina. The anterior surface of its body rests on the bladder, and the cervix points backward toward the coccyx. The uterus is not fixed, but moves freely within certain limits.

2. From a digital examination can be learned the presence or absence of vaginismus; the size, position, temperature, sensitiveness, moisture, and laxity of the vagina; the presence of foreign bodies, hernia, fissures, or caruncles; the position, form, and consistency of the cervix uteri; lacerations (including position, number, extent, and direction), erosions, growths, or cysts on the cervix; prolapse, displacements, and size and position of the uterus.

A complete gynecological examination would include (1) anamnesis, including family history; personal history, with special reference to menstruation, labors, and miscarriages; and present illness. (2) Examination of the abdomen (and breasts), including inspection, palpation, percussion, auscultation, and mensuration. (3) Inspection of the external genitals. (4) Vaginal examination, digital, bimanual, and with speculum. (5) Bimanual examination of uterus and appendages. (6) Sometimes the sound, or curette, may be required. (7) Chemical and microscopical examination of the urine. (8) Microscopical examination of discharges or uterine scrapings. (9) Rectal examination. (10) Cystoscopic examination and perhaps ureteral catheterization. (11) In case of phantom tumor or pseudocyesis, anesthetization would be required.

4. Hemorrhage, sepsis, hypertrophy, and erosion of cervix, prolapse of uterus, subinvolution, endometritis, cancer, and discase of the tubes and ovaries.

8. According to Gross "a tumor of soft, elastic, apparently fluctuating consistence, which attains the volume of an adult head in a few months, can scarcely be anything else than a small-celled sarcoma. On the whole, the diagnosis is based upon their indolent origin, lobulated outline, rapid increase, large dimensions for the period of their existence, freedom from lympathic involvements, and marked tendency to ulcerate; upon the not infrequent discoloration of skin, enlargement of the subcutaneous veins, and possibly elevation of temperature; upon the suffering which they awaken late in the disease, and upon their greatest frequency after the thirty-fifth year."

9. Hysteria, paresis, tinnitus aurium, perspiration, defective vision, acne, herpes, urticaria, headache, and flashes of heat.

THERAPEUTICS.

3. R. Amyli
Acidi borici.....āā ℥j. Misce.
Signa: Apply as a dusting powder.

5. Guaiacol carbonate, salol, betanaphthol, naphthalin, thymol, carbolic acid, calomel, and corrosive sublimate.

6. Note that only two—pepsin and pancreatin—are officinal.

7. Liquor iodi compositus. Iodine, 5 parts; potassium iodide, 10 parts; and water up to one hundred parts. It is used as a counterirritant and as an alterative; on bruises and sprains, also for pleurisy, synovitis, chronic rheumatism, intercostal neuralgia. It is also used internally, in doses of from one to ten minims, well diluted, for the vomiting of pregnancy, or after anesthetics. It is used, too, as an injection, for goiter, also into the various serous cavities in cases of chronic inflammations.

8. Plumbi oxidum. Used in the manufacture of lead plasters, and of some of the other lead salts, also as the basis of other plasters. It is further used as a protective agent against chafing from splints and other appliances, and to prevent bedsores.

9. Mangani dioxidum præcipitatum, dose four grains; mangani sulphas, dose four grains; mangani hypophosphis, dose three grains; and potassii permanganas, dose one grain.

CHEMISTRY.

1. *Matter* is anything which occupies space. A *solid* is a form of matter in which the relative positions of the molecules are fixed and constant. In a *liquid* the molecules glide past each other and the substance assumes the form of its container. In a *gas* the molecules tend to get away from each other and to occupy a greater space. In a *solid* both volume and form are definite; in a *gas* both volume and form are indefinite; and in a *liquid* the volume is definite but the form is indefinite.

2. Hydrogen, oxygen, nitrogen, fluorine, and chlorine.

3. HNO_3. It is a colorless liquid, with a strong acid taste and reaction. It is a strong oxidizing agent, and dissolves most metals, with the formation of nitrates. With hydrochloric acid, it forms aqua regia, which is capable of dissolving the so-called "noble metals." In damp air it gives off white fumes. When strongly heated it is decomposed into H_2O, N_2O_4 and oxygen.

4. The answer to this question will depend upon the textbook used by the student (or examiner). Witthaus puts arsenic in the same group with nitrogen, phosphorus, and antimony; Remsen, in the same group with nitrogen, phosphorus, antimony, and bismuth; Simon, in the same group with antimony, tin, gold, platinum, and molybdenum; Holland, in the same group with antimony and tin.

6. The reagent is made of two solutions, which should be kept in separate bottles. One is a saturated solution of sulphanilic acid in a mixture of 50 c.c. of hydrochloric acid and 950 c.c. of water. The other is a 0.5 per cent. solution of sodium nitrite. To make the test: 40 c.c. of the sulphanilic acid solution are mixed with 1 c.c. of the sodium nitrite solution, and the mixture is well shaken. Equal quantities of the urine and reagent are then shaken together in a test tube, and upon the surface of this mixture from 1 to 2 c.c. of ammonia are floated. A red band formed at the junction of the liquids implies an affirmative result.

7. Freshly prepared ferric hydroxide, $Fe_2O_6H_6$. The

two following solutions should be kept in separate bottles, and when required should be mixed and administered:

(1) ℞. Liquoris ferri tersulphatis... ℥ij
Aquæ destillatæ ..... ℥vj. M.

(2) ℞. Magnesiæ..... ℥iij
Aquæ destillatæ ..... ℥viij. M.

8. Dilute vinegar, vegetable acids, milk, and neutral oils.

9. *Sodium* colors the Bunsen flame yellow. With periodic acid (HIO_4) in excess, it gives a white precipitate in not too dilute solution. *Potassium* colors the Bunsen flame violet. With periodic acid it gives a white precipitate, sparingly soluble in water, and insoluble in alcohol.

10. Oxygen. A colorless, odorless, tasteless gas, slightly soluble in water. It has a strong tendency to combine with other elements, and forms binary compounds with all elements except fluorine and bromine. Oxygen is necessary to the processes of life and combustion.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery	Montgomery	Feb.	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	April	1
Arkansas*	F. T. Murphy, Brinkley	Brinkley	April	9
California	Chas. L. Tisdale, Alameda	San Francisco	April	16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	March	12
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W.C. Woodward, Washington	Washington	April	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago		
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. P. Kennedy, Des Moines	Des Moines	March	19
Kansas	T. E. Raines, Concordia	Topeka	Feb.	12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm J. Maybury, Saco	Portland	March	5
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linier, 24 South Fourth Street, Minneapolis	St. Paul	April	2
Mississippi	J. P. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	Kansas City		
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln	February	13
Nevada	S. L. Lee, Carson City	Carson City	February	4
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	January	—
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C.F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	January	29
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	March	26
Oregon*	B. E. Miller, Portland	Portland	April	—
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia Pittsburg,	June	—
Rhode Island	G. T. Swarts, Providence	Providence	April	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	1
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.		
Vermont	W. Scott Nay, Underhill	Montpelier		
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Spokane	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States.
†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

A Case of Frozen Feet Treated by Thermaerotherapy.—Francis S. Skiff had under his care a patient whose toes had been frozen. The toes of both feet were lifeless and in half of each foot when pricked with a needle there was little sensation. After treating the feet for three days with hot bichloride packs, the writer turned to local, dry, hot air applications. The patient was made to place his feet in the apparatus at a temperature of 140-150° F., three or four times a day, for from an hour to an hour and a half each time, during a period of two weeks. After two treatments the patient felt better. The feet were finally saved with the exception of a part of the two great toes and the second toe. The after-treatment consisted of antiseptic dressings and irrigations with lysol or carbolic acid solution.—*Archives of Physiological Therapy.*

Surgical Suggestions.

Intussusception.—In discussing this condition Cole says that the records of large numbers of cases show that spontaneous cure occurs in less than 2 per cent. of the cases. The diagnosis is rarely doubtful in infants. Tumor exists in almost all cases. Search for it should be made under anesthesia, and by the conjoined bimanual examination of rectum and abdomen. Sudden onset, paroxysmal pain, vomiting, bloody discharges, absence of fecal matter, and the presence of tumor, leave no doubt for diagnosis even in cases in which the baby is suffering from enterocolitis. Purgatives aggravate the symptoms, and are inadmissible. Attempts at reduction of the invagination by distension of the colon under water pressure should be used only in cases that are of not more than six hours' duration. Irrigation should be performed slowly, thoroughly, and with the greatest care, the baby being anesthetised. The dangers of this treatment are: (*a*) Shock, (*b*) loss of time, (*c*) increase of the constriction, (*d*) rupture of the colon. In every case in which the complete disappearance of the tumor is in doubt, abdominal section should be at once performed.—*Intercolonial Medical Journal.*

Narcosis in Diabetes.—The question of administering anesthetics to diabetic patients is discussed by Kausch, who summarizes his opinions as follows: General anesthesia should be used as seldom as possible in dealing with diabetics, and the various methods of local anesthesia should be resorted to when feasible. Anesthesia for diagnostic purposes alone is to be avoided, as well as repetition of the anesthesia. Ether is always to be preferred to chloroform. The amount of the anesthetic agent and the duration of the anesthesia should be reduced as much as possible, and in order to avoid the production of acetonuria through long fasting it is advisable to operate early in the morning. In order to prevent acidosis every diabetic who is about to be operated on should be given bicarbonate of soda until the urine becomes alkaline. If coma is threatened sodium bicarbonate should be administered vigorously by mouth, by rectum, and intravenously.—*Archiv für klinische Medizin.*

Sterilization of the Hands.—Apropos of the various procedures in use for sterilizing the hands Leedham-Green says that unless the hands are in an exemplary cosmetic condition good results cannot be obtained by any method. A roughened or chapped hand does not admit of disinfection. Even after the most prolonged and energetic washing of the hands in soap and hot water, it is not possible materially to diminish the number of microbes on them, and there is no advantage to be gained by unduly prolonging this washing process, as the hands never become sterile, and, owing to the loosening of the epidermis, generally appear more infected after than before the washing. The use of turpentine, benzoline, or xylol during or after the washing with soap and hot water, or of soaps to which antiseptics had been added, does not appreciably improve the results. The aqueous solutions of carbolic acid, lysol, perchloride, or biniodide of mercury are practically powerless to affect the microorganisms situated on the hands, and the use of these antiseptics after a thorough preliminary washing of the hands utterly fails to render them sterile. The use of a saturated solution of permanganate of potash followed by the application of strong oxalic acid gives wholly inadequate results. Alcohol, owing to its property of hardening and fixing the superficial cells of the epidermis and its marked bactericidal action, possesses a remarkable power of sterilizing the hands, far surpassing that of all other agents. Of all the methods tested, the best results were obtained by the following modification of Fürbringer's process: (*a*) The hands are first scrubbed for five minutes with soap and very hot water (about 50° C.), the water to be frequently changed. The use of sterile sea sand as an addition to the nail-brush is an advantage. (*b*) The hands are then rubbed with methylated spirit for three minutes. (*c*) Afterwards scrubbed for a minute or two with 70 per cent. sublimate-alcohol (1 in 1,000). (*d*) And finally rubbed until dry, and polished with a sterile cloth.—*Birmingham Medical Review.*

A Simple Truss for Children.—An efficient, cheap, and cleanly truss for use in cases of inguinal hernia in infants is described by Fiedler. It consists of an ordinary skein of zephyr wool which is provided at one end with two tapes. The skein is passed about the child's body, and the end having the tapes is slipped through the loop and across the inguinal region between the legs. It is then secured in this position by tying the tapes around the legs. A number of such skeins are kept on hand and washed as often as necessary. The efficiency of the device is increased by placing a small pad over the hernia.—*Zentralblatt für Chirurgie.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 12, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	446	162
Diphtheria	291	51
Measles	204	6
Scarlet Fever	234	8
Smallpox	3	—
Varicella	154	—
Typhoid Fever	43	8
Whooping Cough	60	4
Cerebrospinal Meningitis	21	9
Malarial Fever	... ..	.....
Totals	1456	248

Origin of Urinary Casts.—Alessandro Amato states that hyaline casts arise from fibrinous fibrillary cylinders by the action on them of a special pathological secretion of the cells of the convoluted tubes, which shows itself in the form of droplets which have a strong affinity with basic coloring matters. He believes that this is not the explanation of the genesis of all homogeneous cylinders. They may also be derived from a pathological secretion of the epithelium of the convoluted tubules, which appears in large drops in the tubes. These may be slightly granular, and may be found in the ascending and descending limb of Henle's tube, and in the straight tubules. Granular cylinders arise from protoplasmic detritus derived from changes in the internal border of the epithelial lining of the canaliculi, which gradually empty the cell contents into the lumen of the tubule, leaving the nucleus and the wall of the cell behind. Epithelial casts represent the desquamation of the straight tubes. Waxy casts are derived from the fusion of droplets of a yellow color found in the lumen of the canals, and in the epithelial cells of the convoluted tubules. They may be interpreted as hemoglobin separated from the blood.—*Rivista Critica di Clinica Medica.*

Favorable Effects of the Use of Extract of the Suprarenal Capsules in a Case of Addison's Disease.—P. Spillman and M. Perrin have given careful study to the treatment of Addison's disease. They refer to the results of various authorities who have been interested in this same subject. Adrenalin has been employed sometimes with success. This success, however, has been far more rare than in cases in which the total extract of the suprarenal capsules has been used. Adrenalin is only one part of the suprarenal capsules, and does not offer a complete substitute when the destruction of these organs is excessive. In certain cases even when the entire extract has been used no result has been obtained. It must be accepted that the alteration of the suprarenal capsules is only one part of the disorder; there are lesions of the solar plexus, and there is also tuberculosis of other organs, the course of which must be considered a most important element in the prognosis. The writers then refer to a patient, a man forty-two years old, whom they have treated with suprarenal extract by means of injections with excellent results. It is necessary to repeat the treatment from time to time. But even with these limitations these investigators are satisfied with the effect of the drug as employed in this case.—*Revue Française de Médecine et de Chirurgie.*

Acidification of the Viscera as a Certain Sign of Death.—Brissemoret and Ambard have made researches in this subject. In the living animal the liver and the spleen have an alkaline reaction, but some time after death these same organs show a progressively increasing acid reaction. The acidification of the viscera may be a valuable sign of death, because the acid reaction occurs rapidly after death, because it is an absolutely constant phenomenon, and because it is easy to prove. In order to make the experiment one makes use of litmus paper and a fine needle mounted on a syringe. As the liver and spleen both become very rapidly acid after death, one may puncture either of these organs. A little of the visceral pulp and a little blood are extracted in the lumen of the needle. The conclusions of these investigators have been confirmed by the work of Ascarelli, who has conducted his researches in relation to both man and the lower animals. Acidification is more or less rapid, according to the cause of death, and it is more rapid after death from hemorrhage (7 to 12 minutes) than after death from asphyxia (18 to 28 minutes). This condition does not appear at the same time in the different organs. The spleen is the first to show evidence of it; the liver, the lungs, the kidney, and the heart follow in order. In the muscles the development of the acid reaction is tardy and is related to rigor mortis. Nevertheless, in certain cases, muscular fatigue and strychnine poisoning, the acidity of the muscular tissues may exist before death. The determination of visceral acidity constitutes the first certain sign of death, a sign which is simple and easy to determine in routine practice. —*La Tribune Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 11, 1907:

SMALLPOX—UNITED STATES.

			CASES.	DEAIHS.
California, Los Angeles	Dec.	22–29	1	..
San Francisco	Dec.	8–15	1	..
Georgia, Augusta	Dec.	25–Jan. 1	10	..
Illinois, Abingdon	Nov.	16	1	..
Chicago	Dec.	22–29	1	..
Galesburg	Dec.	22–Jan. 5	18	..
Moline	Sept.	27–Nov. 9	5	..
Victoria and Vicinity	Jan.	7	..	Present.
Indiana, South Bend	Dec.	22–Jan. 5	5	..
Kansas, General	Nov.	30	41	..
Louisiana, New Orleans	Dec.	29–Jan. 5	2	..
New York, New York	Dec.	22–Jan. 5	6	..
Texas, Houston	Dec.	29–Jan. 5	2	..
Virginia, Louisa County	Nov.	11–Jan. 5	6	..
Washington, Spokane	Dec.	22–29	9	..
Wisconsin, Milwaukee	Dec.	15–Jan. 5	23	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Nov.	10–24	4	..
Brazil, Bahia	Nov.	24–Dec. 8	7	..
Pernambuco	Nov.	1–15	..	16
Rio de Janeiro	Nov.	11–Dec. 3	5	2
Chile, Coquimbo	Nov.	15–30	28	2
Iquique	Nov.	24–Dec. 15	..	Present
France, Paris	Dec.	1–8	12	..
Gibraltar	Dec.	2–9	3	Imported
Great Britain, Manchester	Dec.	15–22	1	..
India, Calcutta	Nov.	23–Dec. 1	..	3
Madras	Dec.	1–7	..	3
Italy, General	Nov.	22–Dec. 13	14	..
Russia, Odessa	Dec.	1–8	17	2
St. Petersburg	Nov.	23–Dec. 1	6	..
Spain, Barcelona	Nov.	1–10	..	5
Cadiz	Nov.	1–30	..	3
Seville	Nov.	1–30	..	33
Syria, Beirut	Dec.	8–15	..	Present

YELLOW FEVER.

Cuba, Habana	Dec.	26	1	..
Santa Clara	Jan.	8	1	..

CHOLERA.

India, Bombay	Nov.	24–Dec. 8	..	13
Rangoon	Nov.	24–Dec. 1	..	11

PLAGUE.

Chile, Antofagasta	Nov.	26–Dec. 9	4	3
Egypt, Alexandria	Dec.	4–18	4	1
Garbeih	Dec.	11	1	1
Guerga	Dec.	11	1	1
Keneh	Dec.	7–20	26	22
Henaffith	Dec.	10–18	11	7
India, General	Nov.	17–24	6,941	5,300
Bombay	Nov.	28–Dec. 8	..	18
Calcutta	Nov.	24–Dec. 1	..	14
Rangoon	Nov.	24–Dec. 1	..	18
Japan, Kube	Nov.	24–Dec. 8	2	1
Mauritius	Oct.	4–Nov. 8	112	81

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Original Articles.

REMINISCENCES OF MEDICAL PRACTITIONERS IN NEW YORK DURING THE PERIOD OF THE EARLY HISTORY OF THE ACADEMY.*

By A. JACOBI, M.D., LL.D.,

NEW YORK.

The New York Academy of Medicine was founded in 1847, sixty years ago, by one hundred and eighty-four physicians. Two of those are still alive; one, is Nicholas Lafayette Campbell; he resigned 1849. I. C. Hepburn, a graduate of the University of Pennsylvania, has continued his membership since April 1, 1863, as a nonresident. He lives at 71 Glenwood avenue, East Orange, N. J.

These sixty years correspond with the existence of modern medicine established on two solid pillars, viz., sound and repeated clinical observation, and anatomical, local, histo- and bacteriological, and biochemical diagnosis. The rapid progress of medicine during this time in the United States is best explained by the unprejudiced blending of cool Anglo-Saxon empiricism with the readily adopted anatomical, pathological, and general laboratory work. You understand that I speak of that privileged part of the profession which is no longer where we stood sixty or more years ago, when the words: paralysis, spinal irritation, dropsy, hydrocephalus, lung fever, continued fever, cyanosis, idiocy, convulsion, were taken or offered as full-fledged diagnoses, or when the principal etiological factors were colds, worms, and teeth, and the therapeutic refuge calomel.

The study of the discourses before the stated meetings of the New York Academy of Medicine and the gatherings of the best men of the profession will pay you. That is why I want you to look at least over the two first volumes of our Transactions and the two first volumes of the Bulletin. They were published nearly half a century ago. By so doing you will learn that many of the men who participated at a mature age in whatever came up for general consideration were those who will uphold our American fame for all times. It appears when they grew older they became more impressed with their responsibility to the profession. John Watson, Alonzo Clark, Fordyce Barker, J. Marion Sims, Gurdon Buck, James M. Minor, Ernst Krackowizer, John H. Griscom, and many more were always present, and gave their best. They discussed diphtheria, tracheotomy, sudden death during labor, albuminuria, fracture of the thigh, moral insanity, epilepsy, hip joint disease, the eternal milk question, public health, pulmonary tuberculosis, human monstrosities, cyanosis, alcoholic stimulants, anesthetics, cerebrospinal meningitis, hematocele, lunacy legislation. Some of you may find, when perusing these papers and discussions, that several things which had to be discovered and rediscovered by persons ignorant of our medical history, may be read with ease and profit in those old volumes. I may also assure you that in those distant times only very advanced age and sickliness were reasons for staying away. The interest in the Academy and the profession exhibited by our old colleagues did not die out with the termination of presidential and other offices. To us, the young men of that time, many of them seemed like gods and demigods, but not, like them, invisible. They remained with us. White hair and bald heads were always seen in our meetings, and we young men were gladdened by their presence and the instruction gathered from their lips.

My memory recalls, however, some proofs that they were not all angels. Some of them knew it all, like, in our days, a hospital junior, and could not be converted, though it is true that the majority were anxious for any supply of learning or information near at hand or from afar. I may have to speak of the ignominious treatment dealt out to Horace Green, within my hearing, though before my membership, by the majority of a committee appointed for the purpose of looking into his local treatment of the larynx and trachea. Nor was it possible to keep the hatred and jealousy of the Civil War out of this Academy. T. G. Thomas, a Southerner, was charged with harboring Southern proclivities within his bosom and giving expression to them. He was the recording secretary, and the first year of the war was the last of his secretaryship. I think I am quite correct—for it is only forty-six years ago that it happened—when I state that he had only two votes in his favor, those of two abolitionists of foreign extraction. It is surely true that there are no blinder tyrants, nor greater enemies of public welfare, than the prejudices of race, religion, and politics.

Of my own time there are but few survivors. Stephen Smith joined 1855, Thomas Addis Emmet 1856; he writes history, and is happy in such, as he made himself; Dr. Mark Blumenthal, who at present enjoys his honeymoon, in 1857; Ellsworth Eliot in 1858. Him I should be tempted to call venerable if he had not succeeded in remaining young through the aid of his eternally youthful enthusiasm, fired by the study of the history of American medical, municipal, and social lore.

Having been permitted to indulge in personal reminiscences, I thought I could not entertain you better than by refreshing your memory through call-

*Read in part at the annual meeting of the New York Academy of Medicine, January 3, 1907. Not all of these sketches could be read in this meeting for want of time. They are here printed at the suggestion of the Editor. Many more memories should be revived from time to time, for the number of great and good and warm-hearted men who once were fellows of the New York Academy of Medicine cannot easily be exhausted. They are still active, like the light and warmth of the sun after it has descended below the horizon. Of the biographical notes many are taken from old numbers of the *Medical Register*.

ing up names that should be dear to every American medical man. What warmth and enlightenment there are in history are best represented by biographies. The first president under whom I served was Valentine Mott, the excellent sketch of whose life has just been read by Dr. Smith. His name is familiar to everyone. He was president in 1849 and in 1857, when I joined the Academy. The history of his life may be studied to advantage by every medical man who is desirous of learning about and of appreciating the difficulties of medical study and teaching in bygone times. He died on April 26, 1865, nearly eighty years old. My personal intercourse with him was not exactly intimate, but he was prominent among the old and grand men that took kindly to the young foreigner who, if nothing else, was willing to learn and anxious to work. That is why I could not understand the cruel treatment Horace Green experienced at his hands. Mott was always active, always interested. Such vanity as he had I never had reason to feel to any disagreeable extent. He did not object to speaking of his surgical triumphs, but was more proud of his labors in the dissecting room. Once he asked me on the sidewalk in Fourth avenue: "Have you ever seen a double cremaster?" I looked puzzled. He laughed merrily and said: "I think nobody has," took me by the collar to his house in Gramercy Park, and there in a jar, lo and behold, there was "his" double cremaster.

His successor in the presidency was John Putnam Batchelder, born in New Hampshire, August 6, 1784. He died in New York, April 7, 1868. After having practised medicine on a license he took his degree in Harvard 1815. The last twenty-five years of his life he practised in New York, where he was the president of the Academy of Medicine in 1858. In 1817 he took the chair of anatomy in Castleton, Vt., afterwards that of surgical anatomy in Pittsfield, Mass. Of those early times he would often tell me of the scarcity of bodies, of the expeditions undertaken on the worst moonless nights to distant cemeteries, quite frequently armed, always prepared for traps and scuffles, and hairbreadth escapes. Smilingly he would say, with a twinkle in his eyes: "I was young then, and not at all stiff as you see me to-day." He became widely known by his operations on tumors, on stone in the bladder 1818, ligature of the carotid 1825, for sarcoma of the maxilla, which operation had to be followed by the removal of the maxilla (the first after Valentine Mott), 1832 removal of the upper jaw. If not the first, he was one of the first to remove the head of the femur. He wrote on inflammation, compressed sponge, cholera, and "thoughts on the connection of life, mind and matter in respect to education." That shows the variety of his interests. He never ceased to work and keep his eyes open. He tried to learn from his peers and his inferiors. When I was in Amity street after 1858, I had the good luck to live in his neighborhood. Very often he would come in with a specimen in whose histological structure he was interested. I never met with a man who was more enthusiastic over Virchow's cellular pathology, which he studied in Chance's translation of 1861.

John Hoskins Griscom was born on August 13, 1809, in New York, and died April 28, 1874. He studied medicine in Rutgers College and the University of Pennsylvania, took his degree 1832, was professor of chemistry in the College of Pharmacy from 1836 to 1838, 1842 city inspector, and as such the head of the Health Department, and later attending physician to New York Hospital. City inspector he was a single year only, for the stepfathers of the town wanted a pliable and ignorant political tool. When in the Health Department he ruled that no burial could take place without a permit, the permit depending on a medical certificate. If you consider that New York had at that time nearly half a million of inhabitants—that meant a very large city—you will estimate the low state of our civilization only sixty years ago. Griscom's labors in favor of executing principles of sanitation remained inefficient before the legislature passed the first health laws suggested by him. In the three years following January, 1848, when he was Commissioner of Emigration, 700,000 emigrants landed on our shore. Twenty thousand had ship fever, and Dr. Griscom caught it. His memorial, exposing the hardships of emigrants due to the lack of food and accommodations, overcrowding in steerage, absence of medical care, cruelty of captains, brutality of sailors toward men, and still more toward women, and the indolence of our laws and lawgivers, was a State paper of great value, and certainly contributed to open the eyes of the public, if not the hearts of the legislature. Fifteen years he was a member of the prison association, and ten years the chairman of its executive committee. Many laws ameliorating the fate of the prison inmates are due to his initiative. In this Academy he was seen very often, never without a contribution, never without exerting a great influence, both on account of the value of his words and of his impressive presence, and often passionate bearing. He spoke best when his warm heart was full, and warm and full it always was. If every generation had many men of his stamp, with complete mastery of the subjects he was interested in, a clear understanding of what was wanting in our public affairs, a generous heart which made him offer his labor unstintedly in the public service, the community would be better off, and the profession stand as high in the estimation of the thinking part of the public, as in that of many of the sages of antiquity and modern times.

William Currie Roberts, born in London, 1810, emigrated to New York 1820, graduated at the College of Physicians and Surgeons 1832, founded 1835 the first infirmary for the diseases of women and children (in 361 Broome street), which had soon to be closed on account of lack of funds, started a class for women and children, and nervous diseases in the Northern Dispensary in 1844, was afterwards physician to the city prison and to the Park police. In the third year of the Civil War, 1864, he was an enrollment officer. Much money was made at that time—not by him; the cowards, the tradesmen, the sympathizers with the rebellion paid heavily for being permitted to stay at home, or for not furnishing a substitute—not to him; the love of country came second to that of the bargain counter or of the shoddy factory; graft was the shibboleth—not to Roberts. He died poor, and the well-to-do persons called him "a fool." In the profession he was highly esteemed for his scientific attainments, his frequent contributions to the discussions of the Academy, his probity, aye for his occasional ebullitions of temper always, however, exhibited in the cause of right and justice.

Dr. John W. Francis was born 1789, when Washington was inaugurated in the city of New York as our first President, and died on the 8th of February, 1861, a few weeks before the attack on Fort Sumter. Perhaps some of my readers who were born before yesterday may remember when and what that was. So his life is of exactly

the duration of the first great period of our national existence. In the history of the nation in its social and political development, in its incipient literature, not only medical, he took the warmest interest. He was a keen-eyed, warm-hearted, plain-spoken, and generous-minded man, a practitioner of wide repute, and the consultant of the greatest authority, not only in obstetrics, to which he gave special attention; and for a number of years a teacher of the institutes of medicine, or of materia medica, of medical jurisprudence, and of obstetrics and forensic medicine in the Rutgers Medical College and in the College of Physicians and Surgeons, of which he had been the first graduate. You must not smile at the multiplicity of chairs he filled in a dozen years and of things he taught. You must not forget that this took place nearly a hundred years ago, that the limits of knowledge were narrower than to-day, that the great men in the profession had spent all their lives studying classics, history, and medicine, and its adjuvants, and that there was no specialism of nowadays. Not a half a hundred years before Francis it was considered natural that a profound mind and studious worker could be both a great medical man and a thorough philologist; not thirty years before Francis, Albrecht von Haller taught anatomy, physiology, botany, and the practice of medicine, and was the examiner in surgery, though he never performed an operation. Nor should we, in the America of the twentieth century, be too generous with our ridiculing smiles. Many of us know that within our own time, within a score of years, men would teach in our own colleges, willingly or unwillingly, physiology, materia medica, and surgery, or materia medica, physiology, and obstetrics. Let us fervently hope that medicine will, for the future, get the better of politics and money, or social influences in our schools, and that this future may arrive soon, while some of us may still enjoy that felicity.

Dr. Francis' sojourn in Paris, London, and Edinburgh brought him into connection with eminent men, such as Cuvier, Gall, Gregory, Playfair, Brewster, and many others. His library and artistic tastes kept him in constant contact with professional men of all kinds. That is why very few men whom I knew in the profession of New York could at any time compare with him in mental breadth and vigor. He was very social when you knew him more intimately, and inclined to be jocose. I had seen him a few times only, when one day he stopped me at the corner of Broadway and Bond street, near where he lived. "They speak well of you," he said, "and you will get on; only people want sometimes some outward show. Now, I am an old man, and you will not mind it when I say you ought to have another tailor." I replied: "You see, Dr. Francis, you are an old doctor, and famous, and you can afford to wear the old-fashioned clothing of the eighteenth of Brumaire and of the century of William Penn, but I cannot afford yet a better tailor." He laughed, took me to his office, and we had a pleasant half hour, at least I, for he tried to make me believe that I taught him something of medical doings in Germany, with which he said he was not so well acquainted as with the affairs of Great Britain and France. My remarks on his clothing appeared rather to please than to shock him. He was somewhat inclined to be a little pompous, and the cut of his clothing was fashionable when he was a boy. Otherwise his mental outfit and the breadth of his knowledge, and manifoldness of interests, and wide general horizon have often reminded me in after years of our friend, William H. Draper, who had all the accomplishments of Francis, perhaps some more, but without vanity, and with an undisturbed temper and unruffled, kind-hearted geniality, all of which outlasted his health. Draper was to the end of his days, with the exception of Ernst Krackowizer*, who was his equal, the finest specimen of a thoroughly cultured medical gentleman of his generation.

Under Dr. Hosack he took part in the editing of the *American Medical and Philosophical Register*, and with Beck and Dyckman, of the *New York Medical and Surgical Journal*. "On the Use of Mercury" was published 1811, "Some Morbid Anatomy Descriptions" 1814, his edition of "Denman's Practice of Midwifery" 1825, "Letter on Cholera Asphyxia" 1832. The history of New York was published 1866.

At the age of sixty-five years, there died in 1864 James Stewart. In him I was very much interested, on account of his exertions in the interest of sick children. In 1839 he translated Billard's diseases of children, in 1841 he published a "Practical Treatise," in 1852 "A Few Remarks About Sick Children in New York, and the Necessity of a Hospital for Them, By Philopoedes, an ex-Dispensary Doctor," in 1857 the Academy of Medicine prize "Essay on Cholera Infantum," and was busy in collecting a fund to establish Christ's Hospital for Sick Children. In an obituary he was called "retiring and thoughtful, yet humorous." The first was certainly true; the latter he may have been when I once left his house in Abingdon Square. It happened this way. I was very anxious to make his acquaintance, and told him so when I called upon him without any other introduction than my assertion that I was interested in diseases of children, and desired very much to have him cooperate, or rather lead in the establishment of a children's section in the Academy. Indeed he was "retiring;" my visit was a very brief one; I was chilled all through. I see myself still sitting down on one of the stoops in his block pondering over my misdeeds and what sin I might have committed. I must have risen after a while, but I am pondering yet.

In regard to my pediatric efforts, I was more fortunate when I approached a younger man, Mortimer G. Porter, who died November 24, 1863, of typhoid fever, at the age of thirty-seven years. He aided me in the attempt at establishing a section for the diseases of children in the New York Academy of Medicine. Either the time, or we, were not matured for that achievement. It took twenty-five more years to consummate what we then planned. Meanwhile a similar section was established in the A. M. A. Its first meeting was held at Richmond with the cooperation of Samuel Busey of Washington, whose interest in all subjects connected with medicine and the welfare of the medical profession should always be remembered. I cannot sufficiently extol the interest and labor bestowed on the perfection of our plans by Dr. T. M. Rotch, at that time not so famous, but quite as active as to-day.

Another young man who died much too soon was William Rice Donaghe. He was born in New Haven, Conn., 1830, and died in the Bloomingdale Asylum after a long illness. I knew him well. A year after I tried my feeble strength in the spring course of 1857 of the College of Physicians and Surgeons, he and T. Gaillard Thomas arranged private courses in anatomy and obstetrics at 104 Third avenue. They insisted at that, for us, early time on practical work; dissection and the applica-

*Unfortunately, to the eternal detriment of the profession and the community, Krackowizer died as early as 1875.

tion of the forceps were taught, and their school was successful. He was a manly, tall, blond, long-haired man, with a pale, fearless face, and upright and outspoken, sometimes, as a few thought, too much so. When he was taken sick, some said "I told you so." But it need not be insanity that makes a manly man outspoken, fearless, and pounding away when he is right.

Dr. George Thomson Elliott was born May 11, 1827, and died on the 28th day of January, 1871. After graduating in the University Medical College in 1849 he spent three years in Edinburgh, Dublin, London, and Paris, worked in the lying-in-hospital from 1852 to 1854, and was one of the founders of the Nursery and Child's Hospital. With the Infant Hospital on Randall's Island and the New York Woman's State Hospital he was connected at an early time. He taught anatomy at Woodstock in 1856, and was one of the founders of the Bellevue Hospital Medical College in 1861. He missed a great chance, when the new school was established, in not daring to insist upon at least a three years' course and a shorter vacation. I had for some time been connected with the New York Medical College in East Thirteenth street, and knew the shortcomings of our college methods from my own observation. Perhaps he was too much bent on pleasing, for he was genial, amiable, and sociable, to exhibit the courage of a reformer, or even a revolutionist. In a large general practice, which was promoted by his social connections, his general achievements, and his knowledge of French and Spanish, and by extensive obstetrical and gynecological work, he exhausted himself and fell an early victim to apoplexy. He was the first to be in possession of the hypodermic syringe invented in Paris by Pravaz, 1831, for the purpose of injecting chloride of iron into aneurysms, and introduced into Edinburgh, 1858, by Alexander Wood through a pamphlet entitled: "On a New Method of Introducing Medicine Into the System More Especially Applicable to Painful Local Nervous Affections." In the summer of 1858 Elliott visited that city, and carried with him to America some of the valuable instruments. He gave me of his bounty. I need not say that after they once entered America they were soon generally known among us. You may wonder why it took years before one of the most useful inventions crossed the ocean. Still, fifty years ago it was big and vast. Elliott's "Obstetric Clinic" was published in 1868; it proved a vast improvement on similar previous works, and spread his reputation over the States. The book was preceded and followed by a number of magazine articles. He was always diligent, studious, zealous, and withal gracious. He should be remembered as a man of taste, a refined scholar, an amiable colleague, and should not be forgotten in this, our fast-living time. His linguistic advantages, as I said, were many, but not quite so varied as he thought. Once he returned from Germany and France, and hailed me with the exclamation: "I know German." I requested him to tell me something in German. He posed and said: "Kellner, eine Flasche Markobrunner." I laughed, and asked him to say something else. "Don't ask me too much," he replied. "I had only a few weeks and a great deal of practical work to do, but I do know something else." "What is it?" "Kellner, noch eine Flasche Markobrunner."

James Livingston Brown was born April 2, 1831. He furnishes an example of a typical American career, cut short by death. He attended the public school, was a pupil in a private school in Canal street, and paid his fee by serving as janitor. He began early to teach Latin, Greek, and the rudiments of music. He had a scholarship in Columbia College, received his B.A. in 1852, and A.M. in 1868. In his vacations he would peddle thermometers, pens, and what not in New York, Albany, Boston, and Philadelphia. Add to this indefatigability and ambition, amiable manners, and great personal charm and modesty, together with the idealistic tendency not only to become prominent but also useful, and you have the picture of what makes a great doctor and a good citizen. After his graduation in 1856 in the University Medical College, Dr. Brown soon rose in the opinion of the profession, if not in riches—for it was not his love of music alone that made him retain his place as organist in St. Luke's Church fully seventeen years. He was long connected with Demilt Dispensary, with the Health Department as a sanitary inspector, and with Professor G. T. Thomas as his chief of clinic. His practical work turned more and more to be gynecological, and his contributions to literature belonged mostly to that specialty. Few may have known that the case of diabetes in a baby of less than two years, described in the first volume of the *Journal of Obstetrics and Diseases of Women and Children*, 1869, occurred in his own child. That was one of the accidents occurring in a life full of hardships, exertions, and incipient successes only, which promised so much and was cut off too soon.

David Meredith Reese died March 13, 1861, after having occupied the chair of the Practice of Medicine in the New York Medical College for several years. Born 1800 in Maryland, he graduated from the Medical University of Maryland 1819, and became a vaccinating physician in Baltimore 1824. He was professor in Castleton 1841-42, in the Washington University of Baltimore 1842-45, then in Albany, N. Y. Afterwards he became resident physician of Bellevue, New York, and one of the founders of this Academy in 1847. Cordell, in the medical annals of Maryland, speaks of him as an extensive writer on yellow fever. In 1844 he published an American edition of Cooper's dictionary of practical surgery, and edited until his death, which occurred in New York, May 13, 1861, the *American Medical Gazette*. Being his colleague in the New York Medical College, I knew him well. He was a queer mixture of Southern humor and dyspeptic grimness, a hard worker, and open to scientific suggestions, no matter whence they came. He was older than most of his colleagues, but the small hours of the night never frightened him homewards from the northwest corner of University place and Eleventh street. His anxious life companion blamed us for his early death.

Dr. Richard J. O'Sullivan was born in Ireland, 1833, and died in New York May 16, 1896. He read a paper on school hygiene before the New York Academy of Medicine June 19, 1873. He was sanitary superintendent of the Board of Health, and for some years sanitary school inspector, until the office was abolished. One of the results accomplished by him was this: that of 40,000 children vaccinated by him not one was taken with smallpox during an epidemic of that superfluous, preventable, nasty disease of medieval semicivilization, the pet of antivaccinationists. That is what he did, and many more things. In appreciation of his merits, the Board of Education rewarded him by abolishing the office of sanitary school inspector. In his paper, which was discussed by C. R. Agnew, A. Jacobi, and John C. Peters, he claimed equal rights for physical and mental culture, censured the iniquitous

habit of sending children to school prematurely—he found children of four years in the public classes—and claimed that "seven years is an early enough age for a child to be sent to school." That is the same conclusion I arrived at in my contributions to Gerhardt's "Handbuch," 1876, and to Buck's "Hygiene," and which, fortified by further studies, I am prepared to uphold at the present time. He insisted upon a proper division of time in schools, short lessons, and long recesses, mainly for the very young. Perhaps you are aware of the circumstance that, within a few months this last year, when the question of the shortening of the school hours was discussed by the authorities, it was proposed to insist upon an uninterrupted instruction of the unfortunate young victims through three full hours in succession. If there is a more direct method of raising a nation of invalids and idiots, I am not acquainted with it. O'Sullivan rejected the drill-sergeant exercises and demanded spontaneous sports and amusements during the recesses, objected to insensate cramming, recommended measures for the protection of the eyes, and for ventilation of the classrooms and against the dissemination of contagious diseases. What happened? Dr. Ellsworth Eliot, president of the County Society; Dr. Austin Flint, president of the New York Academy of Medicine; Dr. John C. Peters of the Journal Association, and a number of others, memorialized the Board of Education in behalf of the reappointment of Dr. O'Sullivan as sanitary school inspector on April 12, 1873, the MEDICAL RECORD of September 15, 1873, and the *Evening Post* took an able part in the discussion, all to no purpose. Thus the office created on January 1, 1871, was on April 30, 1873, abolished by the Board of Uneducation. Please to remember that Dr. O'Sullivan worked and wrote for medical school inspection more than one-third of a century ago, both as a member of the Academy and of the medical society of the county, and as a conscientious citizen of the Commonwealth.

John C. Peters was born on the 6th day of July, 1819, in Long Island, and died on the 21st day of October, 1893. As a child he lived in Varick street, as a boy in Bethlehem, Pa. He studied medicine in Berlin, Vienna, and Leipzig. In the minutes of the stated meeting of November 14, 1842, his name appears for the first time in connection with the Medical Society of the County of New York. It was resolved that his examination before the Comitia Minora be sustained, and that he receive a license entitling him to practise physic and surgery. Of the same society he was president in 1866 and 1867, after Henry B. Sands and before Freeman T. Bumstead, George T. Elliott, and myself. The example of a relative who was an influential homeopathic physician in the city of New York, prevailed upon the young, inexperienced doctor to join homeopathy. His social connections with many of the prominent families of the city who partook of the sectarian infection which had spread rapidly on account of the persecution from which the homeopaths had to suffer at the hands of the regulars—a shortsighted and suicidal policy—secured for the cultured, witty, and refined newcomer an extensive and lucrative practice. During that period of his life he began his literary career. Between 1853 and 1856 he published books and pamphlets on apoplexy, headache, diseases of the eye, on married females, on the brain and nerves. They were in part original, in part adaptations of the writings of Rückert, a German homeopathist, and every one of them homeopathic. His paper on "Materia Medica" written from 1856-1860 bore the same stamp. For years he was the chief editor of the *North American Journal of Homeopathy*, the author of several works on homeopathic practice, and the leader, or surely one of the leaders, of what at that time was called a school. You may be able to appreciate the surprise both of friends and foes, when, on August 17, 1861, he published in the *American Medical Times*, then the most influential weekly of the United States, his renunciation of homeopathy. Many hands were raised against him, many armed with clubs. One of the most ethical of our brethren, fed on the dogmatic rule of the code of ethics of the American Medical Association which prohibits newspaper advertising, declared he would not be satisfied until Dr. Peters would publish his renunciation in the daily papers. But he himself remained anonymous, like other cowards. That no friend was left to John C. Peters among his homeopathic colleagues is self-understood. But such was the character of that staunch and steadfast man that neither the suspicion of what was the regular profession, nor the enmity of his associates, nor the loss of a lucrative practice, swerved him from what to him was the plain duty of a scholar, a man, and a gentleman. He survived enmity, however, jealousy, and pecuniary injury, and enjoyed to his last days the profound respect of the profession. He was, 1844, one of the founders of, and an earnest worker in the New York Pathological Society, and for years the editor of its proceedings, but was forced to resign on account of his homeopathic connections. He was one of the founders and presidents of the Medical Library and Journal Association, which contributed so much to the greatness of the library of the New York Academy of Medicine by the donation of all its books and journals. He exhibited a great and important interest in infectious diseases, mostly in Asiatic cholera, on which he began to write in 1860. Almost every year thereafter he added to its literature up to 1873, and again in 1885. His main work, of a thousand pages, was published by Congress in 1873. For the Health Board of New York he studied and wrote on yellow fever in 1878. As he was a believer in the filth origin of infectious fevers, it came natural to him to adopt, when the time matured, the bacteric etiology. I knew him well; that is why I want you to know him, and to remember his name and doings. He was learned, had a general broad, classical, and modern education, and extensive reading. To the last hours an earnest student, a facile and fluent writer, witty and sarcastic, but mostly of a kind humor, and respectful. His temper would sometimes get the better of him, but, as a rule, he controlled it, for he was just to everybody and loyal to his friends. Best of all, he was fearless, as is shown by his renegation of what then was called homeopathy, and a good citizen, ever active in medical affairs, and devoted to the interests of the profession. One side of his character and doings is well illustrated by the following letter, which appeared in the *Evening Post* many years ago. It reads as follows:

"TO THE EDITOR OF THE EVENING POST:

"SIR:—It is interesting (and not least so to those who worked in the Sanitary Commission towards the assuagement of the inevitable horrors of civil conflict) to hear anything authentic in illustration of what Miss Wormeley calls 'the other side of the war;' and such reminiscences are still more worthy of record if they tend to harmonize, for current uses, the feelings of those who, though once in deadly array against each other, ought now, for

their mutual good and for the advance of general civilization, to meet in purely fraternal relations.

"I repeated last night to a sister of Dr. Peters what I had read an hour or two before in your issue of yesterday evening about his refusing a fee from a Union soldier for professional services rendered during the war, whereupon she told me this: Dr. Peters was in the habit of attending, without charge, those soldiers needing medical attendance who were quartered during the conflict at Camp Scott, on Staten Island. When Mobile was taken by the Union forces, the house belonging to one of Dr. Peters' friends—deserted by all its residents but one negro—was entered, as lawful prey, according to the ethics of warfare in an enemy's country, by the bluecoats, consisting mainly, in this instance, of a contingent from Camp Scott, and the faithful servant was, of course, powerless to stop the looting they immediately began.

"But among the decorations of the walls was a portrait of Dr. Peters. This discovery changed the situation. 'Boys!' cried the leader of the Camp Scott men, after some explanations from the old negro, 'here's the doctor's portrait. We can't touch this house. It belongs to one of his kin. Let's skip, and try somewhere else.' And undespoiled it was accordingly left to the old caretaker, his friends reaping where Dr. Peters had sown.

"A. J. Bloor."

The two last named men died within a dozen years ago. Very few of you, however, remember their labors, even their names, for what Sir Thomas Browne said three hundred years ago is surely true: "The iniquity of oblivion blindly scattereth her poppy, and deals with the memory of men without distinction to merit of perpetuity." Thus it happens that otherwise good and true men forget the benefactors within their own ranks, that the men, who by accident or push, are able to arrogate high places, are remembered, and the memory of the modest, consistent, warm-hearted, far-seeing, and altruistic is buried with their caskets.

I wish I could contribute to changing all that.

THE HOUSE FLY AND ITS CONNECTION WITH DISEASE DISSEMINATION.

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The channels by which disease germs are carried is a matter much discussed by the profession and the laity. This question has been answered by superstition and plausible ignorance for ages. Agents, at one time believed noxious, have become practically ignored. It behooves the physician and the sanitarian to investigate carefully and scientifically such means of dissemination as seem potent. The mental attitude of the profession towards flies as an important agent in the spread of disease has been one of credulity and indifference. The object of this paper is to present this question in its several aspects, quoting only those authorities whose statements are the result of careful observation and experimental investigation.

Seven different varieties of flies are found in our houses, 98 per cent. of which is the common house fly (*Musca domestica*). Born in manure, generally that of the horse, or in decomposing matter of any kind, vegetable as well as animal, they enter our homes to alight on foods there stored. Their tastes are indelicate and omnivorous; they subsist on sputum, fecal juices, and the slime and dirt that sticks to exposed surfaces.

House flies are without stings, and are unable to penetrate the skin. Their proboscides, through which they feed, are connected with an extremely active salivary gland, capable of pouring out a large quantity of saliva, which the fly projects against a dry surface, swallowing the subsequent solution. Naturally, solid particles, living organisms, parasites, and eggs, small enough, may pass into this digestive tube. Bacilli of different types and eggs of the nematodes have been observed in the proboscides, stomach, intestinal tract, and defecations. The time that particles remain in the digestive tract of the fly is from 12 hours to 23 days. Evidently the digestive secretions are not active for harm, as organisms will not only pass through alive, but increase in number while in transit. There must be some absorption of the toxins of bacilli, for flies die in large numbers which have had the fortune to imbibe such bacilli as those of the plague and anthrax. Flies are large breeders, lay their eggs by preference in horse manure, but also in decaying meat, meat broth, cut melons, dead animals, and even in cuspidors. On these substances their larvæ subsist until they hatch. From 10 days to 2 weeks after the time the egg has been laid the fly is fully hatched. It is estimated that one fly, laying 120 eggs at a time, will have a progeny amounting up to the sextillions at the end of the season. Busck[15] took a quarter of a pound of horse manure and found in it 100 larvæ and 146 pupæ. This would make about 1,200 house flies to a pound of manure. In a cubic inch of manure taken two inches below the surface 200 pupæ were found.

Caldwell,[41] noting fly larvæ in countless numbers in refuse which had been buried 3 days, questioned as to what became of the flies when the pupæ were hatched deep in the ground, where, after careful search, but one dead fly was found. He made experiments to solve this problem, taking earth and night soil from the trenches, putting it in a glass box, the top of the box being covered with muslin carefully fastened down with gummed paper. The soil and earth were carefully arranged so as to form an imitation of a shallow trench. On the fourth day the first fly made its appearance, and by the morning of the seventh day the space between the muslin and the paper was swarming with them. He analyzed the events as follows: The ova are deposited in the latrines, and are conveyed in filth-carts to the trenches; the larval and pupal stages take place below the ground, and the developed fly makes its appearance between the covering of earth. He never succeeded in hatching flies in wet earth.

Most writers claim that flies do not travel far from the locality in which they are bred, and little is known as to just what distance they may cover. Professor Packard, according to Ernst,[13] gives the rate of speed of the common house fly as 5.35 meters per second, or a mile in 5 or 6 minutes, which is at the rate of 10 miles an hour. Packard thinks any of the flies can scent their food for several miles, and might fly 20 or 30 miles a day if aided by winds.

Our present accurate knowledge of the possible spread of diseases by flies is antedated, like many of our modern ideas, by the inferential observations of astute observers of past times. As early as 1498, in a work attributed to Bishop Knud,[24] is the statement that the plague may be foretold by frequent changes in the weather, much fog and rain, and the increased number of flies, and in 1577 Mercurialis noted that flies, after lighting upon the sick, visit other houses, depositing their contents upon bread and other articles of food.[26]

Sydenham[1] (1666) says: "From my own practice I know of only two observations by which we can prognosticate the healthiness of the autumn that is to follow; first, if fevers appear unnaturally early, the season that follows will be exceedingly favorable to the development of epidemics. I have remarked that, if swarms of insects, especially house flies, were abundant in the summer, the succeeding autumn was unhealthy. This I observed to be the case during the whole summer of the aforesaid year (1661), while in the summers of the two following years, which were very healthy, the insects were very few. Still, I must remark that at the approach of even so severe a disease as the plague, they were not observed to be very abundant. With these two exceptions I have observed that all prognostics are fallacious."

In 1853, "J. F."[24] referred to the increased number of flies in cholera times, and in 1873, Nicholas,[24] speaking of the cholera epidemic at Malta in 1849, states that he was then impressed by the possibility of flies transferring diseases, as they were present in great numbers, and had free access to dejections and food.

Marpmann[24] (1864) said that the natives of Friesland blame the spread of hog erysipelas to flies, and Francis,[24] in 1893, reported the case of a woman he saw in 1846 who developed cholera shortly after swallowing a fly, and who died from the disease. Joseph[24] believed that domestic flies may carry bacilli and deposit them on wounds, and that anthrax may result from infected flies being crushed on a wounded surface.

The inferential deductions of the better-informed writers of recent date should be admitted to the argument. Davaine (1868)[24] stated that the infinitesimal quantity of blood which suffices to transmit anthrax corresponds with the amount of fluid in the fly's proboscis. He claimed (1870) that the rôle flies play in the transmission of anthrax had long been known. Moore[7] (1893) suspected flies as being carriers of cholera, typhoid fever, tuberculosis, anthrax, and leprosy. Battersby[8] (1895) attributed an epidemic of typhoid fever to flies which were abundant, the water supply being beyond suspicion. Bachman[10] (1898) suspected the ability of flies to carry the eggs of parasites and deposit them on food. Joly[24] (1898) argued that if flies can carry pollen, why not bacterial matter. Veeder[18] (1898), noting a commode from which typhoid excreta had been recently emptied without cleansing, and placed next to a pitcher of milk, saw flies gather around both, endangering, in his opinion, not only that household, but the whole neighborhood.

Hervioux,[23] observing that in the epidemic of smallpox in Tamorna-Djedida the disease spread in the direction of the prevailing winds, placed the responsibility on flies. Abbott[25] and Rosenau[28] make flies responsible for much of the spread of typhoid fever, for they breed in and feed upon infected discharges, and convey the infection to the food supply, particularly milk. They may alight on the lips and other portions of the body.

Parke[27] notes the possibility of flies distributing anthrax, plague, cholera, typhoid fever, tuberculosis, trachoma, septicemia, erysipelas, recurrent fever, and leprosy, and adds that they may also transport the eggs of animal parasites and deposit them on food. Martin[33] observes that an increase in the number of flies is followed in about 1 week by a corresponding increase in diarrheic diseases, and in 3 to 4 weeks by an increase in typhoid fever. Nash[34] noted the unusual absence of summer diarrhea, and at the same time an absence of flies —the flies and enteric conditions appearing at the same time later in the summer.

Cobb[44] saw a box of dates exposed within 100 feet of 5 tuberculous patients spitting, and watched flies going from the sputum to the exposed fruit. Braun[50] lays the distribution of the oxyuris to flies.

There seems to be no restriction to the diet list of the fly. Common observation will show that anything organic serves as food. In Egypt they swarm around the sore eyes of the natives. In the hospitals they congregate around exposed wounds and dressings; in the field, on dead animals; in barns, on the sores and nares of sick animals, and wherever dejecta have been thrown or sputum expectorated there will flies alight and feast. The logical conclusion would be that whatever particles existed in these several localities small enough to be drawn into the stomach of the fly, passage of such would occur, and, if bacteria be present, make the host a receptacle and carrier of the same, to be disseminated later.

Any marked change in fly life impairs their vitality. In the open they undoubtedly live for a season; confined in bell-jars or cages at ordinary temperatures, a goodly number die within a week.[24 39 52] The health and longevity of flies also seem to be materially affected by the bacteria which they may ingest.

It has been noted that in plague laboratories dead flies are numerous, giving the suggestion that they might have succumbed to the effect of contained plague bacilli.[27] This has been proven by Davaine,[24] who fed 4 flies on anthrax blood, 3 of which died.

Nuttal[24] experimented with *Musca domestica* fed on animals dead from the plague at 14° C. All were alive at the end of 8 days. Another experiment found them all dead on the seventh day, whereas of the controls only 20 per cent. had died. In the third experiment all were dead on the eighth day, and 6 out of 14 died of the disease. At higher temperatures flies die more rapidly, mostly within 3 days. He states that the fact that infected flies can live for several days points to the probability of their playing an important part in the dissemination of the plague, as they have plenty of access to food into which they might fall and die, or on which, in again feeding, they would deposit their excreta laden with plague bacilli.

Lord[39] fed flies on tuberculous sputum, 10 to a field. Out of 30 flies, 26 died in 3 days, the remaining ones becoming inactive. Of the controls, 6 flies confined and fed on nontuberculous sputum were all found dead in 2 days. Of 6 others fed on water, sugar, and meat, and similarly confined, 2 died in 2 days; the remaining 4 were alive at the end of the week. A writer in the *Healthy Home*[52] found that confined flies fed on tuberculous sputum died within 2 to 3 days; controls, fed on clean milk, 8 to 10 days.

Experiments have been made to demonstrate how long bacilli would remain alive when dried on the external parts of the fly. From flies caught in an autopsy room at Hamburg during a cholera epidemic, after feeding on cholera bacilli, allowed t fly around a while and then recaptured, roll cultures were taken at intervals, giving positive results even after an hour and a half had elapsed,[4] and cultures were obtained from the tubes of the feet after 17 hours.[43]

How long organisms will remain alive in the gastrointestinal tract of the fly has been investigated by several experimenters. Although the number is not sufficient to be conclusive in each instance, still their results are entertaining.

Cholera bacilli were found in flies' dejections as early as 17 hours after feeding and as late as 4 days.[24] The bacilli of typhoid fever were found in the dejections as late as 23 days,[30] and tubercle bacilli as early as 18 hours.[39]

If the secretions of the gastrointestinal tract be not inhibitive, and bacilli remain long enough in the same at a proper temperature, there is a possibility of their increasing in number. This has been noted at least twice. Lord[29] found that the bacilli in fly specks had increased in size and showed evidences of branching. The bacilli in the field numbered 10, and in the dejections 150.

The strongest evidence, and the one least controverted, is the trinity of laboratory experimentation, the finding of pathogenic germs in the interior of the fly, the development of the same by cultures, and the production of disease conditions through inoculation. Numerous observers have taken the trouble to verify their suspicions.

Bollinger[2] proved the presence of anthrax bacilli in the stomachs of flies. Marpmann[24] squeezed fluid from the proboscides and ani of flies which had fed on erysipelas bacillus, and found cocci and bacilli. He also fed them with nutriment containing the bacillus prodigiosus and bacillus fetidus, with like results. Maddox[24] (1885) found live bacilli in their dejections.

Spillman[24] and Haushalter[24] found tubercle bacilli in the abdominal cavities of flies caught in a consumptive's room, also in specks scraped from the walls and windows of hospital wards for consumptives. They fed flies on tubercular sputum, and proved the presence of tubercle bacilli in the intestines of flies and in their excrements. Hofmann[3] made similar experiments and found bacilli in 4 out of 6 flies. Anthrax bacilli were found in flies' dejections by Celli[24] and Alessi.[24] Stiles[24] found the eggs of the ascaris in the larvæ and in the adult fly. Simmonds[4] (1892) examined flies present in an autopsy room at Hamburg and found bacilli in large numbers. Recognizing the source of danger, he ordered the bodies sewed up and the tables cleansed, after which no bacilli were found in the flies in the room.

Uffelmann[5] allowed a cholera-infected fly to drink out of a glass of sterile milk, and, after keeping the latter at 70° F. for 17 hours, found each drop to contain about 100 organisms. Yersin[26] (1894) also found living bacilli by microscopic examinations. Billings[11] found anthrax bacilli in the stomachs and intestines of flies collected from the body of an infected steer. Raimbert[24] made the first microscopical experiments concerning anthrax in flies in 1862. He kept flies in a bell-jar containing a vessel of anthrax blood diluted with water. After the flies had drank the fluid and soiled their bodies, he found bacilli in their proboscides in 2 hours, and later in the excrements.

Grassi[24] fed flies on water containing tænia eidium. The eggs came away unaltered in the flies' dejections. He also experimented with the oxyuris and trichocephalus, and caught some flies whose intestines were full of eggs. Similar results were obtained with the oidium and botrytis. Macrae,[24] in India, 1804, exposed boiled milk in different parts of a jail where cholera and flies prevailed. High walls separated the male from the female department. There were no cases of cholera on the female side, but the milk on the male side became infected with cholera germs. The milk in the cow-shed was also infected.

Lord[29] made sections of flies fed on tubercular sputum and found bacilli in the intestines, but there was no invasion of the other parts. On the examination of fly specks the bacilli appeared in the stools within at least 18 hours. Examination of many specks showed that the number of bacilli to a field increased from 3,000 to 5,000 bacilli. About 2,000 specks had been deposited by 30 flies in 3 days; thus from 6,000,000 to 10,000,000 tubercle bacilli had been transferred from the sputum to the inner side of the flies' cage during this period.

Raimbert's[24] investigations prove that house flies which live upon flesh and blood carry the poison on their feet, wings, and in their dejections. In 1862 Davaine[24] made observations on the spoiling of fruit and vegetables, which he traced to flies that carried the spores of penicillium and mucor, and infected the wounded places on apples, etc. Tizzoni[24] and Cattani[24] caught flies in cholera wards, secluded them for some hours, took cultures, and found cholera bacilli. Swatchenko[24] culturally found spirilla in flies' dejections after 2 hours. Uffelmann[5] experimented with 2 flies; the first yielded 10,500 colonies, and the second 25.

Hart[14] and Smith[14] cited an experiment by Burgess, who fed flies on bacillus prodigiosus and then allowed them to fly into a large room. After a few hours they were recaptured and made to walk over slices of sterilized potatoes, on which later were found vigorous growths. Smith[17] experimented with house flies walking over alternately sterile Petri dishes, and one with diphtheritic growths; thereby inoculating the sterile.

Veeder[18] made cultures of bacilli from fly tracks and excrements, the flies having fed on the dejections of typhoid and dysentery patients, thus showing the possibility of these diseases being spread by flies. Sangree[20] experimented with anthrax cultures on a wingless fly, allowing it to walk over first the culture plate and then over sterile agar, demonstrating the colonies which grew from the same. Ficker[30] isolated typhoid bacilli in bodies of flies caught in houses where people were ill with typhoid fever. He experimented to determine how long bacilli would live within the bodies of flies, and found the extreme limit to be 23 days after feeding. Hayward[38] fed flies on bacilli contained in tubercular sputum, cultures developing the same.

Chantemesse,[43] writing on the propagation of cholera from house to house, makes flies the most important factor. His experiments proved that one could obtain cultures of cholera after 17 hours from the feet of flies and from their intestinal contents. Similar experiments and results were obtained by Celli[24] and Alessi.[24] Davaine[24] inoculated guinea-pigs with proboscides, legs, and wings of flies removed directly from a jar. The animals died of anthrax. He also fed flies on anthrax blood for 24 hours, then after that sugar water for 1½ to 3 days. Four flies died of anthrax and three survived. He believes that flies are a most important means of spreading anthrax. Proboscides from flies which had sucked upon the erysipelatic leg of a horse were inoculated into healthy horses, and produced effects similar to inoculations made with the excretions themselves, and the proboscides contained bacteria similar to those seen in the wounds.[24]

Celli[24] and Alessi[24] proved, both by cultures and by inoculations, that flies' contents give off virulent anthrax bacilli. In their experiments on domestic flies they proved that the *Staphylococcus pyogenes aureus* was unaffected in its virulence by its passage through the fly's intestines. Celli (1888) fed flies with tubercle bacilli and inoculated the anterior chamber of the eye of a rabbitt, developing tuberculosis in that animal. Flügge[24] experimented with

the bacilli of anthrax, typhoid fever, spirilla, and *Staphylococcus pyogenes aureus* and found them virulent after passing through the intestines of the fly. Simmonds[4] proved that bacilli retained their virulence when adherent to flying insects for an hour and a half after drying.

Swatchenko[24] experimented on flies with pure cultures of cholera bacilli, and the bacilli were found in the excreta and bowels as late as 4 days later. When inoculated they were found to be as active as pure cultures. The same results were obtained when the flies were fed on choleraic dejections. Hoffmann[3] fed flies on tubercular sputum, and 24 hours after being fed bacilli appeared in the excreta of the flies, and 3 guinea-pigs inoculated with their intestines died with tuberculosis. The presence of plague bacilli in the intestines of flies has been demonstrated repeatedly. Yersin,[26] in 1894, noting the large number of flies where victims were being autopsied, crushed one fly and inoculated it into a guinea-pig, which died of the disease in 48 hours. Twelve hours after flies had been infected, Marpmann[24] (1897) inoculated their contents into mice. His experiments were not complete, in that although the mice died, not all of them died from the infection. Hayward[28] fed house flies on bacilli contained in tuberculous sputum and proved it by inoculation.

To test the virulence of bacilli in specks, Lord[29] protected glass jars from direct light. Guinea-pigs were inoculated with 100 specks each, scraped from the flies' eggs at intervals of 1, 8, 15, 28, and 55 days. The first inoculation was made subcutaneously and the other intraperitoneally. The animals were killed after 5 to 7 weeks. Tuberculosis was produced by the inoculated material in the first 3 animals, showing that virulent bacilli were present in the specks for at least 15 days. The pig inoculated with specks which had dried for only 1 day showed generalized tuberculosis. The pig inoculated with the specks which had dried for 15 days presented large, isolated, tuberculous lesions of the spleen and of two lymph glands, one in the gastrohepatic omentum, and the other in the anterior mediastinum. Tubercle bacilli were demonstrated in these lesions.

An interesting condition which occasionally occurs is due to the ingestion of fly larvæ by human beings. Certain species of the larvæ of flies are capable of reproducing larvæ,[9a] which accounts for the gastroenteric condition with which they are associated. Bachmann[10] found larvæ of the common house fly in the vomitus of a hard drinker, and the same were found by Cohen[12] in the dejections of a nursing infant. Another writer[9] cites a case in which fly larvæ in large masses were passed in the stools, and a case is cited by Cattle[30a] in which large quantities of dipterous larvæ were passed per anum.

Stiles[24] found the eggs of the ascaris in the larvæ of flies.

Disease conditions and associated states accurately observed must be considered scientifically as trustworthy experiments as those done in laboratories. A change in the water supply from foul to pure, with the incident reduction in enteric conditions, demonstrated as positively the source of typhoid fever as any inoculation of pigs.

Not until the Spanish-American War, in 1898, did we realize the importance of the fly question in the dissemination of typhoid germs. The Civil War gave us modern hospital construction, so this latter, the Spanish-American, may result in proper relegation of aërial diffusion of disease, and the placing of diffusion by flies more prominently. Sanitation in the army at this time was not as carefully prearranged as it should have been, and as it was at the time of Moses.[9] The fly factor was not unknown, and yet no provision was made in the sanitary regulations to prevent the dissemination of the ever-present typhoid fever by these agents. Not only were the contents of the latrines exposed, but the men wandered through the woods defecating indiscriminately.

Quoting from Reed, Vaughan, and Shakespeare's Report on the Spread of Typhoid Fever in the United States Military Camps during the Spanish-American War of 1898:[48] "Typhoid fever progressed even in those who did not drink the suspected water. Notwithstanding the purity of the water supply, and contrary to the opinion generally accepted by the medical profession, we find typhoid fever, having been imported into various company organizations, now steadily advanced. The disease is attributed to the fouling of the ground, inevitable in camps, the lack of sufficient conservancy establishments, and the contamination of food through the agencies of dust and flies. . . Flies swarmed over fecal matter and then visited and fed upon the food prepared for the soldiers in the mess tents. In some instances, where lime had recently been sprinkled over the contents of the pits, flies with their feet whitened with the lime were seen walking over the food."

Not until a spade and an armed soldier were placed at each latrine did the fly menace cease and typhoid fever diminish. As each man defecated, he was compelled, with his spade, to dig up enough earth to cover his excrement, the sentinel seeing that such order was carried out. No sadder, more humiliating, yet successful experiment has ever been noted.

Buchanan[9] relates an attack of cholera in the Burdwan jail, where the water supply was above suspicion, and the same for all the inmates, who were divided into groups, separated by a high wall. One group had their victuals cooked separately and were fed in separate places. The ones fed close to the latrines, where choleraic discharges were thrown, became infected with cholera, while the other group escaped. It was fly year, and flies were seen to come and go between the food of the inmates and the discharges in the compounds.

In 1850 the ship *Superb* had cholera on board. She was at sea for six months. On putting to sea flies were in great force, but after a time disappeared, and with them the epidemic. Going into Malta the flies again appeared from the shore and cholera increased. Again putting off to sea, the flies disappeared, with the coincident subsidence of the disease.[6]

Alice Hamilton[32] sums up the result of her study into the part played by the common house fly in the recent epidemic of typhoid fever in Chicago, which could not be explained wholly by the water supply nor on the grounds of poverty and ignorance of the inhabitants, as the section infected did not differ in these respects with several other sections. The streets in which the sanitary arrangements were worst had the larger number of cases. Flies caught in undrained privies, fences, walls of the houses, and rooms of typhoid fever patients, showed typhoid bacilli in 5 out of 18 cases. Further, she states that when the dejections of a typhoid victim are left uncovered in privies or yards, flies may be an important agent in the dissemination of the disease.

Hewlett[45] noted an epidemic of flies coincident with an epidemic of enteric diseases among children,

in which the diseases affected alike all classes, under conditions sanitary and unsanitary.

How diseases are transmitted, and the most probable source in each circumstance, have naturally been the cause of much argument. As the science of medicine has become more exact, and as the methods of experimentation allow of more logical deductions, so have some of the opinions once thought worthy lost in favor. Naturally, several channels exist, some always dangerous, others occasionally so.

The possibilities of aërial dissemination of pathogenic germs, once holding the confidence of the profession, has been seriously attacked. How important flies may be in the dissemination of diseases will largely depend upon other existing conditions. The observations referred to herein conclusively prove the possibility of the spread of any type of infectious disease by this insect. It has been aphoristically stated that "the three great means for the transmission of typhoid fever are fingers, food, and flies,"[36] and the authors hold the last to be the most important. If this be true of typhoid fever, why not of any other microbic disease?

The part of the fly most active for harm is undoubtedly the portion which most carefully protects the contained microbe from sunlight and desiccation. From the experiments recited the relative danger is as follows: the dejecta, the proboscis, the crushed or ingested insect, and the outside parts.

Scientifically speaking, the number of flies in a community is in direct proportion to the carelessness of its sanitation. The housekeeper will spend a day rummaging over a bed for a bedbug, and give little notice to a kitchen full of flies. "The presence of flies in a house is a reproach, falling away from the high hygienic standard, for the fly is a pestilential fellow."[3a] Fly epidemics are generally local ones spreading slowly from the source of first infection. Winds, by carrying the flies, allow of spread in their direction. As a working hypothesis, which is both logical and reasonable, one can explain the sporadic occurrence of epidemic diseases, such as remote cases of cholera, which are not native and existing in quarantine. Further, it has been repeatedly asserted that in the zone immediately surrounding a smallpox hospital new cases are more frequent than at a distance. There are two ways to explain this condition—the wafting out of the building of infected particles, or the carriage by flies. The latter seems more probable, for outward drafts are never vigorous, and hardly sufficient to carry a distance.

Every privy, every open window, every dead animal in the street, expectorations of people suffering or incompletely recovered from any infectious disease, the nares of scarlatinal patients suffering from catarrh or acquired colds; in fact, all conditions where pathogenic bacteria or intestinal parasites may openly exist, make possible, and even probable, the spread of disease by flies. This, being known, should be acted upon. There are few Boards of Health as intelligent and far-sighted as that of Philadelphia, which has taken vigorous measures to protect the public against infection of food by flies. Inspectors are directed to visit all milk houses, butcher shops grocery and candy stores, and instruct the owners to place a covering over all articles. The order reads:[47] "The chiefs of divisions of nuisances, milk and meat, and cattle inspectors are hereby instructed to visit all retail dealers exposing for sale in front of their properties meats, fish, vegetables, fruit, candies, and cake and instruct the proprietors that a covering of some suitable material must be provided to protect the goods so exposed from flies and insects generally."

When mosquitos were discovered to have a part in the dissemination of malaria and yellow fever, it was thought that a prevention of their breeding was too great a proposition, yet it has been satisfactorily accomplished, so that now one case of yellow fever in all Cuba will create more comment in the daily papers than at one time an epidemic in Havana. Certainly when the profession and the laity become alive to the dangers incident to the presence of flies, and recognize in them a receptacle and a carrier, then will the problem be attacked and solved.

Attached to all stables there should be built a pit of sufficient size, closed tightly with the exception of a ventilating window properly screened, and so constructed that little direct light may enter. Manure, as soon as dropped from the animal, should be pushed into this pit, and chloride of lime or crude oil frequently scattered over its contents. All organic filth, such as human manure, if conditions do not allow of a sewerage system, should be covered immediately by sufficient earth. All offal and organic débris, in which flies can lay their eggs and propagate, should be disposed of, secluded, or screened. Hospitals, particularly where contagious diseases exist, and rooms containing the same, should have all windows and doors carefully screened, and every effort be made to rid the interior of such flies as may enter. All food, particularly milk and such articles as are eaten uncooked, should receive full attention and protection.

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280 MONTGOMERY STREET

PHYSIOLOGICAL ACTION OF MASSAGE.

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WHEN by careful observation the efficacy of massage had been demonstrated in several affections and morbid states which had nothing in common, apparently, at least, it became desirable to explain its action. Empiricism paved the way, which later on was widened by reasoning and experimenting. As late as the last century it had been observed that friction accelerates the venous circulation and diminishes existing stagnation.

The affections in which massage had yielded the best results, and in which it had been most used and most recommended, was in cases where the normal relations of the tissues or their elements were altered. In sprains we find vascular ruptures and sanguineous effusions. The presence of hemorrhages, or extravasated leucocytes, in a region, gives rise to disturbances if their absorption requires a long time. In hyperplastic arthritis, hydrarthrosis, inflammation of the tendinous sheaths, we have to deal with new solid or liquid products, and we can only expect an entire functional restitution, a real cure, if we cause them to disappear. From this point of view massage is really useful.

The first condition which is necessary to obtain a clear idea of the physiological action of massage is to become familiar with the laws of nutrition of the tissues, of which absorption is one of the main factors.

The living cell is an organic center, which undergoes development, lives, and then dies.

Certain liquids are as indispensable to organic elements as salt water is to fish, fresh water to mushrooms, vinegar to mycoderma aceti. They contain water, albumen, and salts. No doubt, their composition varies in the different tissues, but we do not know the character of these variations. It is from these liquids that the cells derive their nutritive material. These liquids are known under the generic name of "parenchymatous juice." This latter is absorbed by the tissues. To this imbibed liquid the tissues owe their essential properties. Let us compare a piece of tendon, of cartilage, or of connective tissue, in the normal state, with a fragment that by desiccation has lost its imbibed water; the volume, color, and consistency, in a word, all that may be rendered manifest by the naked eye, has been altered.

One might, to a certain extent, compare the liquids contained in the imperceptible lacunæ to the crystallization water of certain inorganic bodies, with this reserve, however, that the proportions of the former are not fixed and determined like those of the latter. The part which such liquids play in our economy is easily perceived when we reflect that most tissues contain more than 75 per cent. of water. The parenchymatous juice is contained in spaces of microscopic size. These spaces, called lymphatic spaces, are of many shapes, such as lacunæ, channels, sacs, etc. The fluid is found in nearly all parts of the body, but above all it is in the connective tissue, which may be considered the true reservoir of parenchymatous juice.

Having obtained this conception of the parenchymatous juice and the part it plays, it is easy to deduce from it its importance for the economy. An animal cannot indefinitely live in a small room, hermetically sealed up; when the exhaled air reaches too large a quantity life ceases. A periodic renewal of the air is necessary; that is to say, an addition of respirable elements and an evacuation of expired air. The phenomena in the interior parts of the tissues are exactly similar.

The terminus of the nutritive channels is the capillary plexus; the channels of evacuation are the veins, and especially the lymphatics. The difference in pressure in the interior of the centripetal and centrifugal vessels play such an important part in the flow of the liquids that it cannot be altered without impeding the current. If the venous tension is increased beyond a certain coefficient, the lymphatics suffice no longer to accomplish their task, and the region becomes edematous. The same phenomenon is produced if these lymphatics themselves are altered and have become partly impermeable. When it is desirable to obtain very quickly edema of a limb by venous compression one ought to pass a ligature around a big lymphatic trunk, as has been shown by Cohnheim. Massage, which is, as we have already said, a powerful adjuvant to absorption, acts on the venous and especially on the absorbing system. It accelerates the current of the liquids in all directions, and by diminishing the tension in one part, facilitates, by the production of a sort of a vacuum (suction force), the circulation in the next succeeding one. This theory will allow us to understand most phenomena and will justify the manœuvers resorted to, though they may seem strange and their application present difficulties. For instance, in articular affections, massage acts on absorbing vessels, but we know scarcely anything about the lymphatics of the joints. What is their origin? How do they behave as regards the synovial fluids? Do they end in cul-de-sacs, without epithelium, as was generally believed a few years ago, or do they open into the cavity by stomata?

When Mosengeil set to work to study the phys-

iological action of massage, he stood amazed when confronted with all these problems. As histology had taught nothing, experiment alone remained.

Mosengeil's experiments will forever remain classic, because they have thrown a new light upon massage and the origin of articular lymphatics. Besides theoretical difficulties, there are technical ones. If you desire to study the influence of massage on the progress of arthritis, for instance, it is quite a simple matter; take two animals and introduce into two similar joints a colored liquid, the progression of which is possible to observe with the naked eye and with the microscope. But the selection of such a liquid is not an easy one. Vermilion grains are too big and angular, and when filtered the chemical products are colorless. Mosengeil, after considerable meditation, chose India ink. This must be of such fine and good quality that its dilution is uniform throughout, without containing any small particles and without producing the least sediment. As soon as the solution had been prepared, a sufficient quantity was injected into the two femorotibial articulations of a rabbit; one of them was massaged, the other one not. The result of Mosengeil's experiments were always the same. On the massaged side the diffusion of the liquid took place rapidly; it was propelled into the lymphatic vessels and plasma spaces of the thigh, the direction being from the periphery to the center. On examination of the unmassaged joint a most striking contrast was found. The joint remained distended. In only one case was there found a lymphatic ganglion of the thigh impregnated with the fluid. But one ought not to conclude from this that the afferent vessels had carried the liquid from the synovial cavity.

Repeated abundant injections had caused a tumefaction of the knee. This pressure, due to the increase of the liquid, had not, however, as massage had done, driven the colored substance into the absorbing vessels. It had infiltrated places where it found the least resistance, namely, the neighboring connective tissue and that which separates the muscles of the leg. It is possible that the movements and the action of the force of gravity favored this evolution; it is also possible that traces of the India ink found in a ganglion of the thigh, were brought there by lymphatics of the infiltrated interstices. No ambiguity is possible in the interpretation of these facts. Massage had driven the material into the centripetal vessels, it had stimulated its absorption to such an extent that there was no comparison between the massaged side and the other. Yet the animal was not secured; it was allowed to run and jump about; the muscular contractions were as active in one as in the other limb. They favored the progress of the liquids in the right just as much as in the left lower extremity. Another argument in favor of our hypothesis is this, namely, that the operative procedure is of a serious importance. In some cases where massage was performed by unskilful hands there was no liquid in the lymphatic ducts, but simply a diffusion into the cellular tissue.

From what precedes, we may conclude that massage is an energetic agent: it sometimes brings about complete resolution, but always favors the absorption of the preformed products, which it directs into the lymphatic centripetal vessels. Procedures which at one time may have seemed purely empirical, are really rational.

Mosengeil was the first one, I believe, to undertake researches with a definite purpose in view, namely, to no longer study the physiology of one or other tissue, and the manner in which it reacts after various excitations, but to see in what massage really consisted, to discover the difference between absorption and diffusion of a colored substance, injected into a limb which had been massaged, and in one which had not.

This difference is as clear as it can be. In the first case we have had processes comparable to pathological ones, the foreign material has been absorbed and transported. It is easy to understand what would have happened if, instead of India ink, a poisonous substance had been introduced. In the second case it is useless to suppose the interference on the part of any vital power, the liquid permeated the connective tissue by imbibition in the same way as if it had been infiltrated in any other tissue. These facts do do not stand isolated; experiments have yielded results. It was easy to foresee that others would endeavor to complete them.

Sturm and Salis have obtained exactly the same results as Mosengeil. Reibmayer and Haffinger have extended their experiments on articular synovials to the peritoneum. They injected water into the peritoneal cavity of several rabbits; one of them was massaged (*pétrissage* of the abdomen) for ten minutes, and another one was left alone. An hour afterward both were killed. In the case of two other rabbits massage was given for two consecutive hours and then they were killed. During the first hour there was less reabsorption in the massaged rabbit than in the other. The modifications, in the shape of abdominal pressure and aspiration, resulting from the maneuvers performed during the first hour, had altered the conditions during second. Here are the results as Kleen has recapitulated them:

	Proportion per cent. of the weight of the water compared to the weight of the reabsorbed body	
	Without massage	With massage
1st hour	4.57	9.09
2d hour	5.83	1.29
Total for 2 hours	10.40	10.38

Massage modifies the absorption in the interstices of the tissues, as well as in serous surfaces; several factors contribute to it. We have sufficiently insisted upon the prominent part which the lymphatics play. The sanguineous current does not remain inactive either, the pressure exerted on the veins hastens their depletion and diminishes stagnation, if there is any. It has been said that something similar to what happens in the suction pump is produced. I would rather compare it to the classical aspirators used by physicists. The more rapid the current is, the more energy is developed by aspiration. But is there any advantage in massaging? The arterial circulation is centrifugal, and our frictions are directly opposed to it. No doubt about this; but the arterial trunks are deeply seated, their walls have a contractility of their own, so that, fortunately, these slight and temporary obstacles are easily overcome. The *vis a tergo* remains exactly the same in the capillary system, whether one massages or not. The propulsive force remaining constant and the venous tension diminishing, the resultant is an increase of the arterial circulation in a given region and a diminution of the congestions. We may consider the isolated cell as a complete apparatus, endowed with a marvelous power of adaptation, the physiological functions of which are greatly influenced by our treatment. If the movements of the fluids in the living tissues are slow, the action of mas-

sage will be most potent and sure. The circulation becomes easier, the absorption is improved, the chances of exudation, transformation, and organization of the exudate diminish. It is also possible that when an exudate already exists, it may entirely disappear through our manipulations. But if we have to deal with a plastic exudate, an additional measure, not yet spoken of, is necessary to cause its disappearance.

We have placed before us the most simple hypothesis. We ought not to break a fiber, nor reduce a mass to fragments. Practitioners of massage must modify their methods to suit the cases; if they have to deal with tangible and definite lesions, they have not only to pass the ball of the thumb or the palm of the hand lightly over the surface of the body (*effleurage*), but they have to use friction and *pétrissage*; and this simply because in these cases absorption cannot be accomplished without preliminary fragmentation. The acceleration of the lymphatic current is not sufficient to cause an old, organized exudate to disappear. The latter must be brought to a very fine state of division, very much like the diluted India ink of which we have just spoken. Its particles must be small enough to be received by the mouths of absorbing ducts. Energetic massage produces all this. There is besides another advantage to be derived from this kind of massage: that of destroying the capillary vessels which nourish the organized exudate. The acceleration of the blood current is further increased by the intervention of the nervous system. Sometimes also by that of the muscular elements.

Very often when we have to deal with muscular lesions we have recourse to the manipulation called *tapotement*. The infliction of successive slight traumatisms produced by this maneuver is the best means of producing excitation. Schiff, Kühne, Kölliker, have shown that the mechanical irritation is sufficient to provoke contraction of the muscular fibers quite independent of the nervous system. This is quite an excellent means of accelerating the circulation.

Zabludowski ("Die Anwendung der Massage für die Chirurgie und ihre Grundlagen") has proven by an ingenious experiment that massage can cause rapid disappearance of all fatigue. A person at rest supported a weight, with the arm flexed, until the arm was fatigued; effleurage was performed for five minutes, and at the end of that time this same person was able to perform more muscular labor than before. On the other hand, if no effleurage was resorted to, he was obliged to wait at least a quarter of an hour before being able to resume work. Besides, the contractions produced reflexly after massage are more powerful than before. Zabludowski also observed that massage had no influence on the reflex excitability of the spinal marrow, but as it increases the power of the muscles, we render their contractions more powerful.

E. Kleen ("Handbok i Massage") tells us that a friend of his, a leader of an orchestra, has his arm massaged by effleurage every time he conducts his musicians for considerable time; he thus experiences far less fatigue than if he did not have recourse to this measure.

This action on fatigue may also be explained by the assumption that absorption is increased. The sensation of fatigue occurs in consequence of the oxydation of the tissues and of the accumulation of phosphates, carbonic acid gas and lactic acid. If their disappearance is hastened, fatigue ceases sooner than it would by rest alone.

Physiology explains the action of massage on neuralgia, as well as that of pressure, tapotement, and trepidations, along the course of the nerves. These manipulations I often had recourse to, especially in neuralgias of the forehead or the face, where the nerve is seated sufficiently superficial to be accessible to them. Slight pressure on the nerve provokes its excitement and intensifies the pain, whereas very firm and strong pressure is followed at first by numbness and then by more or less anesthesia. The same thing takes place with the motor nerves, as Tigerstedt ("Studien über mechanische Nervenreizung," Helsingfors, 1880) has shown that their excitability is augmented by a very slight pressure, and diminished or entirely suppressed by a strong one.

122 East Thirty-fourth Street

PROPRIETARY MEDICINES.*

By BEVERLEY ROBINSON, M.D.,

NEW YORK.

I wish to tell you this afternoon a few solid truths regarding proprietary medicines, to which, like all truths of science or religion, there may be exceptions. I had believed until one year ago in the law of gravitation, and believe in it to-day; yet, according to the latest scientific investigations, this law may be questioned.

I wrote editorially in the *New York Medical Journal* some two years ago on the subject of "Proprietary Medicines," and have nothing to add, nor do I know whether I can now say as well what I wish to say as I did then. However, I wish to emphasize a few fundamental ideas in a simple way.

What is the reason for the existence of proprietary medicines, and why are they sold? On any rational ground this is difficult to explain, but it is certainly true that many people, despite reasoning, love mystery and like to be deceived. I want to emphasize the fact that nearly all proprietary medicines are mysterious and some are humbugs.

Another peculiar fact is that many people think of a disease as a personality, as having an entity which may be and is properly combated by a certain remedy, simple or combined. This means to them that given a disease or even the name thereof, it must be immediately attacked by its antidote under the form of some proprietary preparation. No matter that they know nothing of the maker of the preparation, of his character, or his capability; the medicine is good for all equally and must be beneficial if taken as advised on the bottle's label. Many are killed by drugs or combinations of drugs about which they know nothing at all. They know nothing of the patient or his history, antecedent or present, and conclude that because the medicine appears to have helped some one else it will be useful in the case at hand. Such a person might be considered quite conscientious, but he has very little brains or else does not use what he has.

Now, with regard to all this literature and those bottles here before me, it is evident that the number of proprietary medicines is ever increasing, and that we are literally swamped with them. Many of these medicines are not only good to look at, but sweet to the taste. All these circulars, advertisements, and so-called scientific reports, whether written by real or unreal medical brethren, are not worth a whiff. The greatest sinners, however, are not the persons who interview you in the office

*Delivered on November 28, 1906, before the class at University-Bellevue Medical College.

and leave these samples around, but the manufacturer and the men of authority in the business world, men of high position who have so far disregarded their brains and consciences as to place their signatures at the bottom of circulars, lauding that about which they actually know nothing. Take the members of our faculty; do you find their names on such wares? Such men would never think of sanctioning the claims of those who send out these circulars and drugs. Because a man is acquainted with all the crimes in the world it is not necessary that he should indulge in them. I am sick and tired of so many circulars, advertisements, and so-called scientific reports.

Suppose a man who represents a house that I know about and which has an honorable record, and I know that I can take his word and rely upon it as well as upon his bond, now if he tells me that a certain drug, or combination of drugs, is good, I can rely upon it. We must rely upon something. In such a case I listen to the man because I want to learn what I can from him. There are some firms that have been working for years and years, getting all the knowledge they can concerning certain drugs or combination of drugs. If we may rely upon the character of these firms, and if the printed formula seems unobjectionable or desirable for any given case, we may, in my judgment, under certain circumstances, properly prescribe their drugs. There are times when to formulate a mixture rapidly, one that is suitable to a particular patient, is very difficult to accomplish in a satisfactory manner, and if we know or firmly believe that a proprietary combination will do as well as anything that we can write for immediately, on account of the great care in its preparation and its precise and accurate combination, we are justified in selecting it.

Is it advisable to keep certain drugs and mixtures at drug stores: does it look too much like commercialism? It is useful to have on hand at some reliable druggist's a mixture formulated by the physician himself to meet best in treatment certain aspects of disease. To do so saves time and thought and solves more than one perplexity in actual practice. This plan is resorted to by some honorable specialists, and even a few general practitioners, and has its favorable and also unfavorable side. You can go to a certain drug store in this city and ask for a certain physician's prescription for rheumatism, for instance, but you will be told that you cannot have it unless the doctor gives his consent.

There is another point. There are certain firms that put up certain preparations better than other firms. There are methods of preparation, probably, or a certain special skill or care as to the nature, use, and compounding of agents of materia medica, which render a particular remedy of one firm more active and powerful than a similar preparation sold by other firms. I advise the patient to go to those firms which have acquired knowledge which justifies me in sending them there.

How can we stop quackery? How can we prevent drunkenness? We may say by stopping the manufacture of alcohol. That is radical, but not practical. We can stop the sale of proprietary medicines in the first place by never sending the patient to any house or drug store unless we feel from all evidence that is obtainable that it is reliable. Secondly, we need never prescribe any particular mixture or pill unless on reliable evidence that the pill or mixture contains precisely what we called for; which brings one back to the question of reliability of the firm.

In most proprietary medicines we find document after document telling what is in the mixture, but the formula is omitted, and we know nothing about the firm manufacturing them. There are some men perfectly correct, proper, high-toned men, who prescribe proprietary medicines, believing that the combinations represent what is reasonably true, but one must know all about them before it is safe to prescribe them. As with the physician, so with the druggist, the whole matter hinges on the words honesty, a square deal, character.

Here is a bottle with the written formula which was given me by a former general practitioner, an honorable and reliable man, who lived most of his life practising medicine in a town where the work was not easy. As the result of his experience and life work he concluded that this formula, as on the bottle, was a desirable one. He has had the medicine made up and will vouch for it. I believe in him, and therefore I believe in the formula. I consider it a rational one, and I believe it represents the truth, and that it will be useful. The dose is here given, and the label states that it is to be given for neutralizing the substances that have developed from gastrointestinal fermentation. Of course there may be some patients on whom this will do no good, as certain drugs may at times fail us. There are no two patients precisely alike. I have seen many cases of pneumonia, yet I have never seen two that were alike; and the same may be said of scarlet fever, measles, and typhoid fever, as well as many other diseases. At the same time it is almost impossible to explain these things to ignoramuses. They cannot comprehend them because they have not had the training.

Yesterday there came into my office one of the best men that I ever knew, who lost his arm in the War of the Rebellion. Some one had told him that he had a leaky heart and this left him in a condition of mental worry, so that he thought that he might die at any moment. It took me one hour to disabuse him of this nonsense. It all comes back to the question of reliability. You select your lawyer and your dentist because you have confidence in him, and you should select your doctor in the same way, and then say, "I am in your hands: tell me what to do and I will do it. It is because of your knowledge that I have come to you." The doctor then sends him to some reliable place where he can get good and reliable drugs, and the patient follows the physician's directions.

I hope I have driven home certain things which no textbook in the English language will tell you. The papers have been filled with this kind of material and I have given you a résumé of what has appeared in them.

AN UNUSUAL NIDUS FOR GONOCOCCIC INFECTION.

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From a review of the literature relative to the subject, I have not been able to find record of a condition similar to the one described in the following report, which shows that we should be on the lookout for gonococcic foci in other locations than in the urethral mucous membrane and the connecting glands, and is also of interest on account of the method used in anesthetizing the penis.

The patient, Mr. P., was a traveling salesman, nineteen years of age. General health had been

excellent, but he suffered with many nocturnal emissions, often two or three during the night. This condition had obtained since puberty, as had also a severe facial acne. Gonorrhea was contracted one year ago, and lasted eight weeks, but he thought this had been completely cured.

The foreskin was very long and adherent to the glans penis on each side, the middorsal portion having ruptured and left about half the circumference of the glans free and normal except at each end of the adhesions. In these two corners were raw surfaces, from which the prepuce had been torn during sexual intercourse five days before. A mucopurulent secretion was oozing from these reddened and inflamed points. There was also a urethral discharge which contained many intracellular diplococci, and the patient had the usual symptoms of gonorrhea.

An organic silver salt was used as an urethral injection; balsams, in small doses, were given internally, and stearate of zinc was dusted upon the lesions on the gland after gently cleansing each time.

All the symptoms rapidly improved until there was no discharge and only a few urethral threads in the urine. The erosions healed except in a small pocket on each side, just behind the corona and under the edge of the adherent portion of the prepuce. These exuded a tiny drop of pus, but appeared so nearly well that I gave them no concern when the patient left the city two weeks from the beginning of the treatment and took a twenty-mile drive into the country. This started a profuse purulent secretion from the small pockets, and the foreskin and glans surrounding them again became red and inflamed. Two days later urethral discharge followed with all the symptoms of gonorrhea. The treatment as first given was reestablished and continued for three weeks, when the urethral shreds, as well as the discharge, entirely cleared up. There was still, however, a slight redness in the little pockets under the prepuce which were now not larger than small peas.

In describing to me the manner in which the first relapse occurred, the patient did not explain the details about the discharge having started in the abovementioned pockets and two days later involving the urethra until the appearance of the second relapse, while he was here in the city. He came for treatment the first day the inflammation began, and at this time there was no urethral discharge, but it appeared the next day. The similarity and course of these two relapses convinced both the patient and myself that these pockets were the foci of infection. Smears were taken from them with a platinum loop and stained for gonococci, which were found very abundant from both sides; they were intracellular, and would not stain by Gram's method.

The same treatment was again advised, and the urethral discharge and threads, as well as the secretion from under the foreskin, soon disappeared, only a little redness remaining in the pockets. Another smear was taken from their interior, and, although there was barely enough secretion to examine, it showed large numbers of intracellular diplococci. No cultures were taken, but the typical attacks of gonorrheal urethritis that spread from these little cavities clearly showed them to be the seat of the infection.

After breaking the adhesions and cauterizing these patches with nitric acid, no further recurrence has been observed, and three months have passed since the urethral discharge and shreds cleared up.

Anesthesia was obtained by injecting twenty minims of a one per cent. solution of cocaine into the region of the dorsal nerve of the penis close back at the penopubic angle. This gave immediate and complete anesthesia, so that no pain was felt while freeing the prepuce from the glans or in the subsequent cauterization.

In November, 1905, I called attention to this method of procuring anesthesia of the penis,* and have used it on many occasions with most satisfactory results, and I believe it worthy of more attention than it has received. In circumcision, cauterizing chancroids, replacing the swollen glans penis in paraphimosis, or in any condition where anesthesia of the penis is desired, I know of no method in which the result may be more promptly and expeditiously obtained. The nerve can be easily found with the artery and vein by picking up the tissues in the middorsal line of the penis back near the symphysis pubis, and rolling them between the fingers. The small hard cord is the nerve. The cocaine need not necessarily be injected into it, but if the different layers of connective tissue immediately around the nerve and its branches be infiltrated the entire penis anterior to this point will be quickly anesthetized with a very small quantity of cocaine.

So far I have not amputated a penis, using this method, but see no reason why the operation could not be done under anesthesia obtained as above described, where there is no necessity for making the incision too near the root of the penis. If occasion demands, a few drops of adrenalin chloride solution may be added to the cocaine to prolong its effect.

An interesting feature of this patient's course, after breaking the adhesions, was the promptness with which the nocturnal emissions changed from one to three nearly every night to only one in two or three weeks. There was also a marked improvement in his facial acne, which from the history seems to have been due to sexual irritation

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*Strictures of the Urethra: Their Pathology and Treatment; *Medical News*, November 11, 1905

TEN YEARS A NASAL PATIENT.

By F. K. MacMURROUGH, M.D.,

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I WRITE this without notes and without references. Ten years ago, in consequence of catarrhal and obstructive symptoms in nose and throat, I sought relief at the hands of a noted specialist. At the first examination he expressed professional delight at seeing the conditions that obtained in the nose. "It is a remarkable case," said he. "Well," he added, "we will clean it out for you." At that sitting he snared out the left middle turbinate, which was encysted. He could get only half of it, and I had to return in thirty-six hours with symptoms of sepsis and pain, when he removed the other half, already detached, and also removed eleven polyps of various sizes from large to small. At the next operation, a month later, he took off with saw a large exostosis from the left side of the septum, and performed at the same sitting a partial septum operation, *i.e.* moving the septum over toward the opposite side. I will state here that I am of a highly hopeful, optimistic temperament when I think everything is as it should be, or that such a condition of things is attainable, or maintainable. I will state also that I always had a ready voice for vocal, conversational, or even elocutionary or oratorical purposes, and that this readiness had been lost or impaired, and that I was in consequence mentally and physically depressed. Being of the blood of the Gael, I suppose it went hard with me to be

vocally incapacitated. Now, this optimism of mine led me to believe that each operation would be the last and that I should obtain relief and a restoration of my "lost voice."

The right side of the nose was always accounted to me to be the clear side, the good side, and I thought the work would be limited to the left side. Well, the left side cleared up marvellously, but *pari passu* the right side became occluded. I first had part of the right middle turbinate removed, then the posterior tip of the right inferior turbinate, then had the pharynx cauterized with electric cautery for possible speaker's sore throat, for I had become a speaker (a political campaigner). These measures brought some relief. It is true that in many nasal operations you are "six months sick before you get well." So I was always either recovering from an operation or getting ready for a new one. I then had more of the right middle turbinate removed and had the right side of the septum sawed and planed off, and at this time had one large polyp removed from the right nasal fossa.

I still suffered with catarrhal and obstructive symptoms and a "ruined voice." I was determined to persevere. I said to the doctor (God bless him for his patient, painstaking skill and never-failing charm, kindness, and courtesy), I said: "Doctor, I am looking for a perfect result, or at least an approximately perfect result." "Very well," he replied, "we will keep on until we reach it." Persons had said to me: "You can never get cured of catarrh." Doctors had said: "Once a nose patient, always a nose patient." Well, I was determined to be always a nose patient until I either enjoyed relief in life or relief in the opposite way. I always had abiding faith in the Doctor's skill and ultimate success. About five years ago the operation for submucous resection of the nasal septum was described. It was, of course, like all new things a *terra incognita*. It was discussed and tried timidly, reluctantly, here and there. After a year or two, or three, it became better known; results following it seemed to be satisfactory. I called the doctor's attention to the condition of the right side of my septum, high up, *i.e.* the deflection of the perpendicular plate of the ethmoid to the right side. He said he would do a submucous operation on it, and he did so. He removed considerable cartilage and bone. This wound healed quicker than any of the others. He said to leave it alone for a year and we would see what relief I had obtained. During that year I was better than I had been for years before as to vocal power and expression, but I was still crippled, still a sufferer. In just a year's time I called up the doctor on the telephone and told him I had determined on another submucous operation. "All right," he said, "come along," making an appointment. Well, the second submucous was done, this time taking out a high, bony ridge reaching nearly to the roof of the nose, and since then I have experienced the desired relief. The catarrhal condition has vanished, the voice has its old-time compass and resonance, and the mental picture is brightened again. Optimism is the word. There were twelve operations in all, covering a period of ten years. So, "those who persevere to the end shall be saved."

100 Lafayette Street

Dupuytren's Contraction Cured by Medical Means.—Gustavo Ferrari brings forward a case of contraction of the palmar fascia in an elderly man which had existed for some time. An operation had been refused by the patient and he had recourse to applications of cold running water to the entire hand, with the result of a gradual cure of the condition and a return to the normal function. There has been considerable difference of opinion among medical men as to the origin of this contraction and its treatment. Dupuytren considered it a local malady of professional nature, seated locally in the palmar aponeurosis, unilateral, belonging exclusively to old persons, and of the nature of a dystrophy. By others it has been regarded as a malady found in the lower extremities, in young persons, having its origin in a general disease; according to some of metabolism, to others of the nervous system, with lesions in the cerebrospinal axis. The author believes that we can reconcile these differing views by considering that there are several forms of the disease, some are professional or traumatic, others are dependent on alterations of metabolism, and still others are due to an alteration of the cerebrospinal axis. These latter cases have also present atrophy of the muscles of the hand and forearm, and are thus easily to be distinguished from the purely local forms. He considers it demonstrated that the disease may be cured by medical means without having recourse to surgical interference.—*La Riforma Medica.*

Salts of Quinine in Typhoid Fever.—G. Basile publishes the results of the treatment of twenty cases of typhoid fever by the use of salts of quinine, used by stomach, except when the quinine was rejected by vomiting, when the hypodermic method was made use of. Different salts of quinine were used with identical effects. Drinks acidulated with hydrochloric acid were given at the same time to facilitate the absorption of the quinine, and antithermic baths were used. The author concludes his observations with these results: There are no inconveniences from the use of this drug in properly selected cases: It assists the physical antipyresis in reduction of temperature, but he considers the latter preferable; it does not shorten the duration of the disease. Hence he does not find confirmed the observations of various modern authors who would have us think that with the use of this drug we are about to enter upon a new era in the treatment of typhoid.—*Il Policlinico.*

Experimental Arteriosclerosis by Adrenalin Inoculations and the Effect of Potassium Iodide.—W. Taylor Cummins and P. S. Stout in their second set of experiments used a series of six rabbits. These animals all received adrenalin. The first two as controls received that drug alone. The third and fourth rabbits were given inoculations of potassium iodide immediately following the adrenalin, in order to overcome directly the effects of the latter drug. The last two animals were to receive no iodide until the first two had died with manifestations of arterial disease. Number one was emaciated when the inoculations were begun and died after receiving the tenth. Number two died after receiving thirteen inoculations of adrenalin. Number three died after thirteen inoculations—adrenalin and potassium iodide. Number four died after thirteen inoculations, having received the same amount of adrenalin and iodide as did number three. After the death of the first two animals iodide was commenced in the case of number five and six. Later these two animals were killed. At post mortem number one showed a small atheromatous plaque in the arch of the aorta. Otherwise the vessels were normal. Number two had a rather large plaque in the same location. The aortas of numbers three and four were free of sclerosis. In number five there was extensive disease from the aortic cusps to the bifurcation of the aorta. Number six showed several small plaques along the thoracic aorta. The writer's state tentatively that potassium iodide may be effectual in preventing the development of arteriosclerosis after the inoculations of adrenalin. It seems probable that the iodide has no effect in its otherwise absorptive properties after the arteriosclerosis has once appeared.—*University of Pennsylvania Medical Bulletin.*

MEDICAL RECORD.

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THE PUBLIC HEALTH DEFENSE LEAGUE.

A BILL has been introduced by Senator Agnew before the Legislature of this State providing for the incorporation of a national society with the above title, under a special charter patterned after that of the Red Cross Society. As set forth in the charter, the purposes of the League will be "to obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, and to work for the enlightenment of the public on all matters affecting these subjects; to work for the enactment of laws in the United States, Territories, and colonial possessions, for the protection and preservation of the public health and morals; to assist the constituted authorities in the enforcement of all laws affecting the public health, including the laws for the prevention of quackery, charlatanism, and criminal practices in the healing art; the prevention of adulteration and substitution of drugs and food substances; the prevention of the sale of narcotics, alcohol, and dangerous substances of every kind, whether under the guise of proprietary remedies and so-called patent medicines and nostrums and remedies, or whether sold as narcotics in violation of law; the prevention of admission to the United States mails of all newspapers and printed matter of every sort advertising any business injurious to the public health or morals; and to prohibit the advertising of such business in any way; to oppose and work against the passage of laws detrimental to the public health and morals; to work for the repeal of any law having such an effect; and generally to institute proceedings in law and equity to carry out the objects and purposes of the corporation."

While the Medical Society of the County of New York has through the activities of its members and counsel been one of the moving forces which led to the incorporation of the League, prominent medical bodies in all parts of the country have allied themselves with the cause in a manner indicative of its importance. Letters approving the call which led to the formation of the League have been received from the American Medical Association, the New York Academy of Medicine, the American Public Health Association, the American Society for Sanitary and Moral Prophylaxis, the American Association of Medical Examiners, the American Medical Editors' Association, and many others. Prominent individuals from all parts of the country have also identified themselves with the cause, and the League will number among its vice-presidents such men as Attorney General Bonaparte, Cardinal Gibbons, Luther Burbank, and others.

The operation of the League will be directed by an executive committee of six members elected from the board of thirty-six directors. This executive committee will meet as often as necessary, to receive the reports from and direct the work of its agents. Each sphere of activity as indicated in the charter will be the special field of a standing committee, and these committees will be assisted by experts in law, medicine, chemistry, and all other lines.

The possibilities for good of a society of this kind are incalculable, and the League, working along the lines sketched in the charter, will deserve the hearty support of the medical profession of the country. The Medical Society of the County of New York has long been active in the pursuit of quacks, and has done good work in keeping down the number of medical parasites in this city, but its work, being conducted by a society of medical men, has not received the measure of public support which is necessary in such an undertaking. The League, essentially a lay organization and of national scope, can carry on this purifying work more effectively, and the results will be naturally more far-reaching than those of the labors of any local organization. We bespeak for this society the cordial approval and cooperation of the medical profession.

ACCIDENTS FOLLOWING THORACENTESIS.

EXPLORATORY puncture of the thorax is so frequently resorted to, and the results of the operation are so generally satisfactory, that the possibility of accident is hardly considered. Accidents do occur, however, of varying degrees of severity, and there may even be a rapidly fatal result. The removal of quite moderate amounts of fluids is well known to have produced sudden death, but the fact that this may also follow simple exploratory puncture is not so well known. Some ten instances of this accident have already been reported, in eight of which a consolidated lung was the cause of the ambiguous signs, having been punctured by the needle. The explanation which has been accepted in most of the cases is that the sudden syncope is due to afferent impulses conveyed to the medulla along the vagus nerve, the terminal fibers of which have been rendered unduly sensitive by compression or inflammation. Russel, who advances this theory, considers that the pulmonary fibers are a more likely source of the impulse than the pleural. Death may be preceded for several days by unconsciousness or convulsions, due to the cerebral anemia produced by cardiac inhibition and extreme lowering of the blood pressure. That there are other causes which bring on sudden death in these cases is shown in one reported by G. G. Sears in the *American Journal of the Medical Sciences* for December, 1906, in which the exploring needle could hardly have reached the pulmonary branches of the vagus, and a subsequent autopsy showed that the two surfaces of the pleura were separated by a considerable layer of fluid. The patient presented a pleurisy with effusion, and aspiration had already been performed. When this

operation was resorted to a second time the man immediately collapsed, becoming cyanotic and almost pulseless. He died fifteen hours later and there were no evidences of any cerebral lesion.

Another accident which may result from thoracentesis is the production of a pneumothorax, of which a moderate number of instances have been reported, including four recent ones by Sears. The latter thinks that the comparatively small number of cases recorded by no means represent the frequency with which the accident probably occurs in practise, and he suggests that it often escapes recognition, as the patient usually recovers. Where a doubt exists it may be cleared up to a large extent by a use of the *x*-rays. When a fatal issue ensues it is probable that the pneumothorax did not contribute to this result, as there are ordinarily a sufficient number of other factors to bring this about. Various theories have been proposed to account for the accident, among which may be mentioned the entrance of air through the aspirating pump or an unguarded needle.

The causes of pneumothorax just enumerated may be avoided by a more careful attention to technique, but there seems to be no way of overcoming the danger of puncture of a solid lung by a needle used for diagnostic purposes. The fact should serve as a warning, however, against the reckless use of the exploring needle before the resources of a physical examination have been exhausted. When fluid is to be removed, the dangers of a pneumothorax may be avoided by allowing the fluid to drain away very slowly, and not insisting that every drop be evacuated. Especially in chronic cases, where the lung does not expand promptly to take the place of the evacuated fluid, the precaution should be observed. Sears thinks that siphonage is decidedly safer when the effusion is large or has existed for a long time, and refers to Forlanini's method as being still safer, according to which sterile air is introduced to replace for the time being the fluid removed.

THE MENINGOCOCCUS AND THE GONOCOCCUS.

The exact status of these two organisms towards each other has long been a problem that has occupied the attention of bacteriologists, and recent developments appear to show that the interrelationship is a very complex one. Ruppel has succeeded in showing that it is possible to obtain by means of cultures of the gonococcus an immune serum which is not only specifically but quantitatively equal in protective power against virulent meningococci to specific meningococcus serum itself, while, on the other hand, meningococcus sera can be obtained which are specific against gonococcal infections. Bruckner and Cristéanu have produced a gonococcus immune serum from horses which was equally agglutinating for gonococci and for typical meningococci. The same authors have also shown that gonococcus and meningococcus immune sera possess precipitins for the bacteria-free products of both varieties of organisms. It therefore appears that gonococci and meningococci produce agglutinins, precipitins, toxins, and antitoxins of the same character.

In view of this discovery considerable interest attaches to some experiments reported in the *Berliner klinische Wochenschrift*, December 31, 1906, by Zupnik, who with four other physicians inoculated the urethra with meningococci. In one experiment several loops of a pure culture of a typical meningococcus were put into the urethras of two of these gentlemen, but only an evanescent local irritation was caused which had subsided completely within twenty-four hours. Then a growth of meningococci of a strain which bacteriologically could not be distinguished from the gonococcus was inoculated into the urethra of a physician who had never suffered from gonorrhea. The result again was negative. In the third experiment meningococci contained in the still warm cerebrospinal fluid of a patient who in addition to the meningitis was also suffering from acute gonorrhea were introduced into the urethras of two physicians, one of whom had had and the other of whom had not had a previous gonorrheal infection; the result of this experiment was also negative, although the fluid contained numerous cocci in every microscopical field. While the negative result obtained in these experiments is perhaps not very astonishing from the clinical standpoint, the demonstration of the fundamental difference in pathogenicity of the two organisms is certainly very interesting, in view of the other evidences of relationship that they can be made to manifest.

FUNCTIONAL ALBUMINURIA IN ATHLETES.

In a recent paper read before the Medical Society of London, W. Collier presented the results of his experience in examining Oxford students as to their fitness in taking part in athletic contests (*Lancet*, December 15). He found it necessary to "advise far more men against submitting themselves to the strain because of pronounced albuminuria than on account of any weakness in either the heart or the lungs. For the past twenty years at Oxford, almost every term, he had examined men, apparently in the very best of health, whose urine would, after athletic struggles, contain a very definite amount of albumin. After a night's rest all trace of albumin would have disappeared. In the past he had advised these men to give up hard athletic competitions, and his opinion had over and over again been endorsed by London consultants. He now believed that this advice was quite unnecessary and therefore wrong. Last February he had examined specimens of urine of 156 undergraduates training for the 'Torpids,' and had found that with the cold nitric acid test eighty-one specimens showed a very definite amount of albumin, or 51 per cent. Of this year's Oxford University crew, after rowing a trial from Putney to Mortlake, every member's urine contained albumin; half the crew's urine contained a very large quantity of albumin. The same thing occurred in the case of the 'Torpid' crews; specimens examined of crews who had been rowing a full course almost invariably showed albumin, and frequently a very large quantity. In the case of the running men, the quantities of albumin thrown down were even more pronounced. In view of these facts Dr. Collier argued that it was no longer necessary to advise men to give up athletic competitions because of albuminuria, and that just as they might expect to find a physiological hypertrophy of the left ventricle and emphysema of the lungs in the athlete, so they might expect to get a physiological albuminuria.

He further asked whether the insurance societies ought any longer to refuse to consider the acceptance of the lives of young men between the ages of twenty and thirty years whose urines had been found to contain albumin after exercise when it could be shown that no albumin was present after rest and after a meal." In the discussion following the reading of Dr. Collier's paper there was in the main an admission of the truth of his contention, but it was also shown that persons suffering from transient albuminuria of the nature indicated, died at an earlier average age than those not thus affected.

Further Experience with Opsonins.

Reports are now beginning to come in from various observers relative to the matter of opsonins and the positive value of the new theory. In the *Lancet* of January 5 is a report of a recent meeting of the Manchester Pathological Society, at which Professor A. H. White of Dublin related the results of his experiences of inoculation on the lines laid down by Wright, and explained the necessity of repeated blood examinations in order (*a*) to regulate the size of the dose and thus to eliminate the negative phase effect as far as possible; and (*b*) to determine the length of time its effects lasted. He detailed the effects of surgical procedure on the opsonic index and showed how clinical improvement following a surgical operation where only a part of the disease was removed was coincident with a rise of opsonic index, and that relapse with involvement of a fresh area resulted when a fall in the index occurred. Moreover, he showed that such cases might be completely cured by inoculation, as soon as the opsonic index fell, of suitable and properly interspaced doses of tuberculin. In the course of the discussion, Dr. Loveday showed that an attempt to find a small dose of tuberculin which could be used empirically in all cases failed. Different doses of T.R. had very different actions in the same person. A very small dose might give a curve of opsonic indices very similar to that obtained by too large a dose. In some cases it was really too large and still smaller doses were required, while in others a larger dose gave satisfactory results. There was an optimum dose for each patient only to be determined by frequent observations of the opsonic index. The question was still further discussed by Dr. Ramsbotton, who spoke of the therapeutic use of inoculations of staphylococcus vaccine in certain common affections, and emphasized their value in cases of furunculosis and the severer forms of acne, when the pustular eruption was plentiful and the individual pustules were large, in contrast to the milder cases of acne consisting of a "few spots on the face" which did not seem to yield so readily to this treatment. In quoting the actual cases treated stress was laid on the fact that the opsonic index, before treatment, in the cases of furunculosis and the severer forms of acne, was below normal, whereas in the milder forms of the latter affection the index was about, or just above, normal.

The Appendix and Laparotomy.

It is chiefly the work of American physicians that has brought about the recognition of the importance of appendicitis. Some years ago, according to Osler, the "iliac phlegmon" was believed to be due to disease of the cecum. It is now known, however, that the cecum itself is very rarely affected. Even the condition which used to be called stercoral typhlitis is really appendicitis. In 1883 Pepper described the relapsing form of appendicitis. Fitz in 1886 cleared up the whole subject in his scholarly paper. Willard Parker was the first one to advise early operation. Other American surgeons, among whom are Bull, McBurney, Keen, Morris, Senn, Deaver, and others, have done much in perfecting the technique of the operation. Among the English surgeons, Treves has emphatically advocated the proper surgical treatment of this affection. Justement in the *Annales de la Société Médico-Chirurgicale d'Anvers* of October, 1906, gives an interesting review of the appendix in relation to laparotomy. The ileocecal appendix has no useful function in man. This fact has been proved many times. After the removal of the appendix health and the various functions continue unaltered for years. According to Ribbert, one-fourth of the human race possess an obliterated appendix, principally those between the ages of fifty and eighty years inclusive. In man the appendix has become a rudimentary organ. Rudimentary organs are in general distinguished by their congenital weakness. They are subject to the contraction of maladies, as has been pointed out by Darwin. The human appendix conforms clearly to this rule. The appendix is not only useless, but it is the cause of much trouble in the human organism. The young are most often attacked by appendicitis. Justement has had occasion recently to examine thirty-five appendices which were removed in the course of laparotomies. The normal appendices were found in the youngest subjects. Kümmel of Hamburg in his examination of this organ has found that in many cases it undergoes profound alterations which give rise to only insignificant symptoms. It would seem, then, that the affection of appendicitis is frequent and susceptible to spontaneous cure. But it is not less true that the patients have been in real danger. According to Bovis, appendicitis is at its maximum frequency from the age of twenty-one to thirty years inclusive. Justement thinks that it is logical to conclude that since the appendix is not only useless but also the cause of much trouble it should be removed whenever this is found to be possible during the course of a laparotomy.

The Value of the Cocaine Substitutes.

One of the leading fields of pharmaceutical endeavor seems to include the production of remedial agents which shall serve as substitutes for the drugs from which they are derived because the latter possess, or are assumed to possess, various toxic properties. The whole gamut of well known drugs has been subjected to this so-called purifying process and in most instances, it must be said, without any signal success which might give an excuse for abandoning the original remedy. Not long after cocaine became recognized as one of the most valuable drugs in ophthalmic practice, efforts were made to overcome its toxic properties and other objectionable features, among which were the production of midriasis and paralysis of accommodation, its effect on the intraocular pressure, and the difficulty of obtaining perfectly sterile solutions. A series of derivatives was the result, for each of which perfection was claimed as the ideal local anesthetic. That claims of this kind will not always bear the test of actual practical application is shown in a recent article by Wintersteiner (*Wiener klinische Wochenschrift*, 1906, No. 45), who comes to the defense of cocaine, as regards its employment in ophthalmic

practice particularly, and demonstrates that the supposed disadvantages are largely overestimated. It is admitted that cocaine may exert an injurious effect on the epithelium of the cornea, and when there is a tendency to glaucoma it may also cause unfavorable symptoms. But aside from this there is very little in the character of the substitutes which would satisfactorily balance these shortcomings. As the result of prolonged observation and experiment, Wintersteiner concludes that although each of the numerous derivatives of cocaine may have its advantages, these are not of sufficient moment to cause an abandonment of the original drug. Their acknowledged inferiority in many respects seems to be indicated by the fact that it is sometimes necessary to combine them with cocaine itself in order to obtain the desired effect.

The Early Diagnosis of Carcinoma.

Although through a better understanding of how to interpret the results of analysis of the stomach contents, and especially through the recognition of the importance of searching for occult hemorrhage as suggested by Boas, great progress has been made in the diagnosis of cancer of the stomach, it is still unfortunately comparatively rare for the diagnosis to be made at a sufficiently early stage of the disease to make the prognosis of operative treatment other than doubtful. Modern surgery has established the dictum that the patient should be brought to the operator before there is any palpable tumor, in order to reap the benefits of the technical advances that have been made in this department of operative work, but the problem is still an excessively difficult one. Albu calls attention to the great importance in suspected cases of keeping careful records of the patient's weight, and believes that a steady, even, though slight, loss of flesh from week to week, when taken in conjunction with other suspicious features, such as a diminishing acidity of the gastric contents, is a symptom of the greatest importance. In the *Deutsche medizinische Wochenschrift*, December 27, 1906, he reports two cases in which the diagnosis was made early enough for the laparotomy to reveal tumors of very small size. In one of these the growth was smaller than a walnut, and Albu thinks that it is one of the smallest gastric cancers that has been diagnosticated during life. No doubt an important reason why such early diagnoses are not made oftener is that patients are not apt to consult the physician until their subjective symptoms have reached a considerable grade of severity, and the condition has already passed beyond the opportune stage. By endeavoring to educate the public in this regard the practitioner can do a great deal toward improving the prognosis of gastric cancer.

Treatment of Tuberculous Ulceration.

The successful treatment of laryngeal phthisis by means of sunlight suggests the thought that this therapeutic agent may also be employed in other tuberculous affections of the mucous membranes in which local applications are feasible. In a recent communication by Weisz in the *Wiener klinische Wochenschrift*, No. 46, 1906, a case is described in which, in a patient afflicted with pulmonary tuberculosis with laryngeal involvement, an ulcer developed on the mucous membrane of the lip. This was swabbed with 1 per cent. eosin solution and exposed to the sunlight, but showed no tendency to heal. Treatment with lactic acid was likewise ineffectual. A combination of the two, however, was followed by a very satisfactory outcome. The ulcerated area was first swabbed with lactic acid (25 to 50 per cent.) and the next morning, after the slough had been removed, was exposed to the direct rays of the sun for varying periods. During the course of two months the ulcerated area was thus exposed for a total of eighty hours, and complete cicatrization resulted. The laryngeal lesion was entirely cured by the sunlight alone, but in the other case the combination treatment was necessary in order to remove the slough from the surface of the ulcer, so that the sun's rays could become effective. But in the treatment of laryngeal lesions, where there is much necrotic tissue present, it would appear advisable to resort to a similar measure when a prompt effect fails to appear from the application of sunlight alone.

Cardiac Trauma.

The fact that cardiac disease may be dependent upon a traumatic basis is well shown by a case reported by Roncagliolo in the *Medizinische Klinik*, No. 38, 1906. The patient, a young man, fell from a considerable height and struck on his left side. He sustained a slight cerebral concussion and sundry abrasions, from all of which he promptly recovered. Soon afterward he developed evidences of cardiac disturbance which became progressively worse, and necessitated his entry into the hospital five months later, when a diagnosis of chronic myocarditis was made. Before the accident the patient had always been perfectly well, neither smoked nor drank, so that none of the usual factors in the production of cardiac disease were present. The heart involvement coming directly after the injury made it most probable that the latter served as the direct cause of this condition, and although the case is unusual, it should serve to call attention to the fact that such a complication may occur.

Difficult Labors and Epilepsy.

The search for etiological factors in the production of epilepsy has animated Volland to investigate the subject from the standpoint of obstetrics (*Zeitschrift für Psychiatrie und psychisch-gerichtliche Medizin*, Vol. 63, No. 5). For this purpose he carefully examined 1,500 cases of epilepsy to determine whether the occurrence of abnormal labors had any bearing on the subject. In forty-five cases (3 per cent.) such abnormalities were found, but a thorough search into the facts of the history in each case showed that the disturbances in question constituted a very subordinate predisposing factor in the production of the epileptic seizures, and in all but a very small proportion of cases they could apparently be entirely discounted.

Public Lectures at the Academy of Medicine.—The second meeting of the public lecture series of the New York Academy of Medicine will be held on Thursday evening, January 31, at 8:30 o'clock. The subject of the lectures will be the Public Milk Supply. Dr. Rowland G. Freeman will speak on "The Risks and Safeguards of Public Milk Supplies," the lecture being illustrated with lantern slides. This will be followed by a short address on "The Milk Work of the Department of Health," by Dr. Thomas Darlington, Health Commissioner of New York City. "How Can the Layman Cooperate?" is the title of the third discourse, by Mr. William H. Allen, General Agent of the Association for Improving the Condition of the Poor.

News of the Week.

Medical Legislation in Pennsylvania.—A bill has been introduced into the Pennsylvania Legislature directed toward prohibiting the practice of Christian Science, osteopathy, and other systems of treating the sick outside of the three legally recognized schools of medicine. A counter bill also has been introduced into the Legislature. This is virtually the same as that passed by both branches of the Legislature two years ago, but vetoed by Governor Pennypacker. It provides for the recognition of the eligibility of osteopathic practitioners to take examinations before the State Medical Board in all branches but materia medica, and to be represented on the State Medical Board, and requiring that none shall be eligible for the State Board examinations except persons who have taken a four-years' course at a school or college, and who have a diploma certifying to this fact. Another bill provides for changes in the manner of examining applicants for license to practise medicine, and also contains a provision to the effect that any person offering services as a practitioner of the healing art, without complying with the provisions of the act, without being graduated from a medical school, and passing the examination of the regular, homeopathic, or eclectic examining board, shall be guilty of a misdemeanor. The bill also changes from three to four years the minimum term of study in medical colleges, requires midwives to undergo the same examinations as physicians, authorizes the State Medical Council to revoke the licenses of physicians guilty of unprofessional practices or unduly addicted to narcotics, and increases from $2,000 to $5,000 the biennial appropriation for the expenses of the State Medical Council.

Festschrift Number of the "Annals of Otology, Rhinology and Laryngology."—The issue of this journal for December, 1906, takes the form of a "*Festschrift*," in honor of Prof. B. Fraenkel of Berlin, who recently celebrated his seventieth birthday. It contains nearly fifty articles on topics connected with nose, throat, and ear practice, opening with a congratulatory address to Prof. Fraenkel by Dr. O. T. Freer of Chicago, following which are contributions by Dr. W. Freudenthal of New York on "Bernhard Fraenkel—what he has done for Rhino-Laryngology," and by a bibliography of his contributions to medical literature by Dr. Freudenthal and Dr. Landgraf of Berlin. Several of the remaining contributions have already appeared in other journals, but the issue is a notable one, and reflects great credit on the Editor-in-Chief, Dr. H. V. Loeb of St. Louis.

Typhoid Fever.—What is considered the most serious outbreak of typhoid fever that has occurred in Philadelphia since that of 1898-9 is in progress in that city. There are said to be more than 1,500 cases in the city, of which 500 are being treated in hospitals, all of which are overcrowded. Last week 342 new cases and 27 deaths were reported. The epidemic is attributed to delay in finishing the city's filtration system, upon which millions of dollars have been spent. In Scranton the morbidity from typhoid fever is diminishing, but both diphtheria and scarlet fever are very common.

Scarlatina and Diphtheria in Chicago.—Both of these diseases are epidemic in Chicago and its suburbs, and the health authorities have stated that there are several thousand cases at present in the city. In Evanston and Oak Park the schools have been closed on this account.

Census of the Blind.—The New York State Commission to Investigate the Condition of the Blind, which is undertaking an inquiry into the cause of blindness and the means to be taken to assist the blind, is engaged in the preparation of a census of all those so afflicted. It is requested that the names of all blind adults, children, or infants be sent to the secretary of the commission, Mr. O. H. Burritt, Batavia, N. Y. It is the purpose of the commission to obtain data on which to make recommendations to the Legislature concerning the establishment of industrial schools for the blind.

Famine and Pestilence in China.—The foreign relief committee at Shanghai reports that smallpox has broken out in the camp for famine sufferers at Tsingkiangpu, and that on this account the officials have broken up the camp, which had several hundred thousand inmates. The efforts to cope with the situation are said to be hopelessly inadequate, and immense loss of life is expected. The institution of relief work is greatly hampered by the lack of means of communication, and the fact that the wealthy are deterred from making large contributions through the fear of official peculation.

Tea as a Beverage for Soldiers.—As the result of observations made while with the Russian Army in Manchuria, by Col. Valery Havard, Assistant Surgeon General in the United States Army, tea is much more suitable as the routine military beverage than coffee. It is considered easier to transport, preserve, and prepare, and has been adopted by the English, Russian, and Japanese Armies. Col. Havard recommends that it be substituted for coffee in the United States Army rations.

Medical Practice Bill in Massachusetts.—An effort is being made by means of a bill now before the Massachusetts Legislature to restrict or stop altogether the practice of Christian Science in that State. While this sect is not specifically mentioned in the bill, which provides simply for the control of the practice of medicine, it is so drawn up as to militate directly against the Christian Science healers.

Suicide in Vienna.—This center of medical study still retains an unenviable prominence among the capitals of Europe in the records of suicides. In the year which has just ended 425 persons—313 men and 112 women—committed suicide, while 707 men and women attempted unsuccessfully to do so. The victims were of all ages, ranging from an old man of eighty-seven to a little girl of eight years. Sickness was the motive alleged in one hundred cases, unhappy love affairs in sixty-three, family strife twenty-three, satiety of life thirty-three, and poverty thirty-one. Twelve women and one hundred and eighteen men shot themselves, nineteen men and thirty-two women took poison, while ten men and twenty-eight women threw themselves from top story windows, a form of suicide common in Vienna.

Bee-Sting as a Cure for Rheumatism.—To demonstrate the good effects of bee-sting in the treatment of rheumatism, an enthusiastic believer at Middletown, Pa., permitted himself to be stung recently by eighteen Cyprian bees before the Pennsylvania State Beekeepers' Association at the Department of Public Instruction at Harrisburg. The treatment was applied by the State Zoologist, from whose apiary the bees were produced, and he was assisted by a representative of the State Health Department.

Advertising Condemned.—Stringent resolutions were adopted at the quarterly meeting of the

Coles County (Illinois) Medical Society, at Charleston, with reference to the appearance of the names of members of the society in the lay press, in connection with accidents, operations, etc.

Women Doctors in Germany.—Prof. von Bergmann of Berlin is reported to have recently said to a medical editor in substantiation of his opinion that women should not engage in the practice of medicine, that so long as women were unable to beat cooks and tailors at the vocations which women are apt to regard as their own specialties, so long would they be unable to compete successfully with men doctors.

Harvey Society Lecture.—An invitation is extended to those interested to be present at the seventh lecture in the Harvey Society course, which will be given by Professor Edmund B. Wilson of Columbia University at the New York Academy of Medicine, on Saturday evening, January 26, at 8:30 P. M. Subject: "Recent Studies of Heredity."

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize will be made on July 14, 1907. The prize is the income from the bequest of the late Señor Alvarenga, and amounts to about $180.

Plague in Rio Janeiro.—During one week recently there were reported in Rio Janeiro thirty-two cases of bubonic plague, with eight deaths; three cases of yellow fever, with one death, and three deaths from leprosy.

Anti-Noise Bill Favorably Reported.—The Senate Committee on Commerce has authorized a favorable report on the bill authorizing Supervising Inspectors of Steam Vessels to regulate the blowing of whistles. The bill has already passed the House.

Red Cross Relief for Kingston.—The New York State branch of the Red Cross, acting under authorization from Washington, has sent relief supplies to Kingston, Jamaica, to the value of $5,000, and consisting of salt beef and pork, canned goods, and soups.

Overcrowding in Hospital for the Insane.—As a result of the formal inspection of the Pennsylvania State Asylum for the Insane at Warren, made recently by a special commission for investigating the conditions prevailing in the insane asylums of the State, it was found that, while the institution is in other respects most admirably conducted, it is greatly overcrowded. With accommodations for a total of 734 patients, 598 men and 582 women have been crowded within its walls, many patients being compelled to occupy cots in long, narrow, ill-ventilated corridors, with low ceilings. There are only 180 employees to take care of the patients, and as these work in shifts, only a small number are on duty at one time. An infirmary for men is badly needed.

Gift to Philadelphia Hospital.—Mr. P. F. Kernan, a real estate broker of Philadelphia, has given $5,000 to St. Joseph's Hospital for the endowment of a free bed. The money was bequeathed by the late Miss Harriet Richards, to be given to any worthy charity selected by the donor. A similar gift was recently made to St. Mary's Hospital.

Muhlenberg Hospital.—The sum of $1,000 has been contributed to this hospital by Mr. and Mrs. Everett Colby of Orange, in the name of their daughter, Elizabeth Colby, who died last summer.

Bequests to Chicago Hospitals.—Five hundred dollars has been bequeathed to the Michael Reese Hospital, and $200 each to St. Luke's and the Alexian Brothers Hospitals, and to the Home for Incurables, by the will of the late Bernard New.

Cincinnati City Hospital.—The medical profession of Cincinnati, as well as the laity, are indignant over the dismissal of Dr. C. R. Holmes, who was serving in an advisory capacity to the Board of Public Service in regard to the building of the new City Hospital. Dr. Holmes has devoted a great deal of time, money, and ability to the work, and is thus summarily dismissed without any recognition of his services.

Jewish Hospital for Deformities and Joint Diseases.—This hospital, which was opened on November 4, in a building on Mount Morris Park, has been so well filled that it has been found necessary to purchase the adjoining property at 1919 Madison Avenue. The new building, which is a brownstone private house, will be remodeled as rapidly as possible.

Meeting of Chicago Children's Hospital Society.—The annual meeting of this society was held January 6, when $1,300 was ordered to be distributed to the various hospitals where children have been cared for.

College of Physicians of Philadelphia.—This institution has received from Mr. Andrew Carnegie $100,000 towards the erection of its new building, on condition that a like sum be raised, of which $80,000 has already been subscribed.

Annual Meeting of the Illinois State Board of Health.—At a meeting, held January 15, Dr. Geo. W. Webster of Chicago was reelected President of the Illinois State Board of Health, and Dr. James A. Egan, Springfield, reelected Secretary and Treasurer.

Philadelphia County Medical Society.—At a stated meeting held January 16 the following officers were elected for the ensuing year: *President*, Dr. James B. Walker; *Vice-Presidents*, Dr. William S. Newcomet, Dr. Joseph O'Malley, Dr. Wendell Reber, Dr. Robert H. Chase, Dr. Maurice J. Karpeles, and Dr. Franklin Brady; *Secretary*, Dr. William S. Wray; *Assistant Secretary*, Dr. Ross H. Skillern; *Treasurer*, Dr. Collier L. Bower; *Censor*, Dr. Charles A. E. Codman; *District Censor for the State Society*, Dr. Albert M. Eaton.

The Obstetrical Society of Cincinnati, at its annual meeting, elected the following officers for the ensuing year: *President*, Dr. Wm. Gillespie; *Vice-President*, Dr. M. A. Tate; *Recording Secretary*, Dr. J. H. Landis; *Corresponding Secretary*, Dr. F. S. McKee; *Treasurer*, Dr. L. S. Colter.

Medicolegal Society.—At its annual meeting, held January 10, this society elected the following officers: *President*, Mr. Clark Rice; *Vice-Presidents*, Dr. J. Mount Bleyer and Dr. W. B. Fletcher; *Secretary*, Mr. John R. Abarbanell.

Winnebago County (Ill.) Medical Society.—Officers were elected as follows at the annual meeting of this society, held in Rockford on January 8: *President*, Dr. T. H. Cellane; *Vice-President*, Dr. W. E. Park; *Secretary* and *Treasurer*, Dr. R. C. Bourland.

Dubuque (Ia.) Medical Society.—The following were elected as officers at the recent meeting of this society: *President*, Dr. W. P. Slattery; *Vice-President*, Dr. F. J. Wieland; *Second Vice-President*, Dr. Kearney of Farley; *Secretary*, Dr. Mary Killen; *Treasurer*, Dr. Lily Kinnier.

Buchanan County (Mo.) Medical Society.—At a meeting of this organization, held on January 9, officers were elected as follows: *President*, Dr. O.

G. Gleaves; *Vice-Presidents*, Dr. W. J. McGill and Dr. S. F. Kessler; *Secretary*, Dr. Chas. W. Fasset; *Treasurer*, Dr. J. M. Bell.

Western Massachusetts Ophthalmological and Otological Society.—A society with this name has recently been formed, and the following officers were elected at a meeting held in Springfield: *President*, Dr. Clarence R. Gardner of Northampton; *Vice-President*, Dr. Charles R. Chapman of Springfield; *Secretary* and *Treasurer*, Dr. V. J. Irwin.

York County (Me.) Medical Society.—At the thirteenth annual meeting of this society, which was held in Biddeford on January 9, officers were elected as follows: *President*, Dr. M. H. Ferguson, Biddeford; *First Vice-President*, Dr. O. W. Pillsbury, Saco; *Second Vice-President*, Dr. R. S. Gove, Sanford; *Secretary*, Dr. C. E. Thompson, Saco; *Treasurer*, Dr. H. L. Prescott, Kennebunkport.

Obituary Notes.—Dr. Henry Kost of this city died on January 12, at the age of seventy-six years. He was a native of Germany, and received his medical education in the universities of Jena, Würzburg, and Vienna. In 1855 he held a commission as assistant surgeon in the British-German Legion, and served through the Crimean War; later he held a position in the German hospital at Dalton, England. In 1868 he came to this city, and had practised here ever since.

Dr. Lyman A. Noyes of Chicopee, Mass., died on January 10, at the age of sixty-seven years. He was born in Tunbridge, Vt., and received his medical degree from the University of Pennsylvania in 1862. During the Civil War he served as surgeon with the Second Vermont Volunteers and the Nineteenth Pennsylvania cavalry. In 1880 he was appointed post surgeon at Seal Island, Alaska, but of late years he had spent his winters in Chicopee.

Dr. John J. Blacklock of Morrisburg, Ont., died on January 9, at the age of eighty-three years. He was a son of Dr. Ambrose Blacklock, a surgeon of the Royal Navy, and was born at Williamstown, Glengarry. He was a graduate of McGill University, and had served as coroner of the United Counties for over forty years.

Dr. W. M. Crawford of Lancaster, S. C., died suddenly of heart-disease on January 9, at the age of forty-six years. Dr. Crawford was graduated in medicine from the Charleston Medical College, and had practised in Lancaster for many years.

Dr. R. H. McDonald of Pittsburg, Kansas, died on January 9, at the age of fifty-three years. He was born in Hallsville, Mo., and was graduated from the Marion Sims Medical College in St. Louis thirty-three years ago. He practised for some years in Colorado Springs.

Dr. J. W. Johnson of Torrington, Conn., died on January 12 of typhoid fever, at the age of forty-two years. He was born in Pikesville, Md., and received his medical education in the College of Physicians and Surgeons, Baltimore, being graduated in 1892.

Dr. J. S. Clements of Edison, Va., after a protracted illness, died on January 13, at the age of eighty-three years. He was one of the oldest physicians in the State, and had retired some years ago.

Dr. E. M. Shaw of Victoria, Tex., died recently of heart-disease, at the age of forty-seven years. He had practised in Victoria for about twelve years.

Dr. Solomon D. Meredith of Carthage, Mo., died on January 10, at the age of thirty-eight years. He came to Missouri in 1898, and began practice at Ritchey. Four years ago he removed to Carthage.

Dr. R. B. Price of Kingston, Ont., died in Chicago on January 4 of pneumonia, at the age of sixty-nine years. He was a Queen's graduate, and had practised in Bath, Kingston, and Lonsdale.

THE SIXTH HARVEY SOCIETY LECTURE.

The sixth lecture of the Harvey Society's present series was given by Prof. F. G. Benedict of Wesleyan University on Saturday, January 12, at the Academy of Medicine, the subject being "Metabolism During Fasting." It had been planned to have present the professional Italian long-period faster, Succi, who was subjecting himself to experimentation by Prof. Benedict, but he had been compelled to return abroad. However, one of the speaker's subjects on whom numerous observations in fasting periods as long as seven days had been made, was present at the lecture, and informally discussed his experiences at the close of the meeting. Prof. Benedict confined himself for the most part to describing the experiments completed under his direction on normal fasting men. Owing to the immense expense involved in the undertaking the work was being done under the auspices of the Carnegie Institution of Washington, and the results would appear in the publications of that body.

It had been found, the speaker said, that in adults living under normal conditions there was a constant replenishing of the fats, carbohydrates, and proteid burned for the production of bodily energy or resulting from the wear and tear on the tissues. In inanition, where such a replenishment was not possible, there was a marked loss of weight from day to day. If water was available this loss represented the destruction of the body's store of proteid, carbohydrate, and fat, from which was obtained the energy necessary for the continued existence of life. Extensive observations had been made in the study of metabolism under these circumstances, but attention had been devoted for the most part to the catabolism of proteid as indicated by the nitrogenous constituents, and by the sulphur and phosphorus of the urine. This gave a rather one-sided view of the subject, since the metabolism comprised as well the utilization of fat and carbohydrates. This method would have to be supplemented by a study of the heat production. Luciani and also Tigerstedt had had fair success in studying metabolism in the more complete manner, but their experiments were more or less interrupted, and had not the completeness and the refined accuracy of the observations made in the respiration calorimeter chamber at Wesleyan University. This calorimeter chamber, as perhaps all knew, had been constructed and perfected under the direction of Prof. Atwater, who, had conducted numerous noteworthy nutrition experiments by means of it. (There was a similar apparatus, the speaker said, at the Pennsylvania State Agricultural Station, where nutrition studies were being carried out on the large domestic farm animals.) The calorimeter chamber consisted of an air-tight, copper-lined box, ventilated by forcing a current of air through by means of a blower. As the air left the chamber it was passed through concentrated sulphuric acid to remove the moisture, and then through jars containing soda and quick lime to absorb the carbon dioxide. The quantities of carbon dioxide and water eliminated by the subject under observation for any given time could then be determined by the increase in weight of the acid and the soda-quick lime jars. The deficiency of oxygen in the air was made up by replenishing from cylinders of oxygen gas; the oxygen consumption there-

fire was a known factor. In order to prevent loss, through radiation and conduction, of the heat given off by the subject, *i. e.* to make the chamber a calorimeter, there were two walls outside the copper lining; one was of zinc, the other of wood, and there were air spaces between. The chamber was cooled by passing cold water through a series of tubes in copper discs, which served as heat absorbers. From the amount of water passed through in a given time and its increased temperature, the loss of heat by the man in the chamber could be calculated. Access and communication to the interior of the chamber was through a small double window. The chamber contained a telephone, a chair, a couch which folded up against the wall, a chair which could be suspended from an exterior scale, so that the body weight could be determined, and finally, if desired, a bicycle machine for exercise tests. Respiration and pulse of the subject were recorded on a smoked drum by a pneumograph with a long rubber tube connection, and the individual's temperature was recorded by an electrical resistance thermometer retained constantly well up in the rectum, and connecting with the outside world by wires.

The subjects were students and young professional men. The calorimeter was entered some hours before the beginning of the experiment. During the stay in the apparatus there was a more or less prescribed routine of life, with little muscular work. The only thing given was distilled or tap water. In all fourteen experiments had been made lasting, in fasting periods, from two to seven days, and covering an aggregate of forty-three days.

Prof. Benedict gave the main facts brought out by the investigations as follows: The most noticeable thing was the loss in weight, but the values fluctuated, and were not accurate indices of loss of body tissue. The variations were associated with extra elimination or retention of water, and were often considerable, ranging from 44 grams to 1.1 kilos. The average losses on the first and second days were about a kilo, on the third about 787 grams, on the fourth 682 grams, and on the fifth, sixth, and seventh days about 500 grams per day. The body temperature was lower and more constant than in normal individuals. Pulse and respiration tended to be much slower, but the degree of change varied in different individuals. With the resumption of food there was a rise of temperature and a marked increase in pulse and respiration. There was a diminution in the red cells and the leucocytes. Differential counts showed no change in the relation of the various types of cells except for some increase in the lymphocytes. The speaker, however, said that these blood tests were not entirely satisfactory. There was a noticeable falling off in strength as indicated by dynamometer tests; with the resumption of food the strength rapidly returned. After a fast of only two days' duration the body weight was rapidly regained, in fact, the original weight was somewhat exceeded, and remained at the higher level. This fact could be applied practically as a method of increasing body weight. No special discomfort was noted as a result of fasting. It had been noted, however, that a good mental condition was essential for a successful fast. In short fasts the degree of emaciation was slight. No fasting faces had been obtained in any of the experiments.

The nitrogen eliminated daily in the urine varied on the first day from 5.8 to 15.3 grams. It was usually about 10 grams in longer fasts, after the third day. The water output per day in respiration and perspiration amounted to from 600 to 800 grams. The carbon dioxide output was reasonably uniform; it was higher on the first two days and then gradually diminished. While this figure was an approximate estimate of the total oxidation, the oxygen absorbed was a much more exact measure. The proteid catabolized was essentially represented by the N output (times 6¼) in the urine. Knowing the CO_2 given off, the oxygen absorbed, and the nitrogen of the urine per day, it was possible to calculate the amounts of fat and carbohydrate burned. At rest during inanition it was found that about 150 grams of fat was utilized; but before this the glycogen store was drawn upon, 181.6 grams having been utilized. Later the glycogen used might be as low as 20 grams per day. The amount of heat produced was largest on the first day, and tended to diminish. It was not far from 1800 calories, though with absolute muscular rest probably about 1500 calories. A day of sleep would amount to about 1300 calories, as shown by calculations based on six-hour periods. In different individuals the heat production was apparently parallel to the pulse rate. A balance between the heat produced and the energy as calculated from the oxidations gave close results, showing the reliability of the deductions.

The rest of the lecture was taken up with a description of the detailed results of a single seven-day fasting period. The results were essentially those given above.

At the conclusion of the lecture, the chairman, Prof. Graham Lusk, announced that the studies of Prof. Benedict would probably be extended to observations of various pathological conditions. These would doubtless throw much light on some still very obscure metabolic disturbances.

Correspondence.

TRYPSIN FOR THE CURE OF CANCER.

To the Editor of the Medical Record:

Sir:—Replying to Dr. Morton's letter appearing in the Medical Record of January 19, 1907, commenting on my "facts," I would like to make the following observations

It is very refreshing to learn that Dr. Morton is willing to admit that one-third of my claims are founded on fact, and that in so far his statements were not strictly correct.

In answer to Dr. Morton's statement, substantiated by the unreliable letter of the patient, to the effect that I did not "attend the patient at her home and did not examine her during this time, except at my (his) office, and in the early stage of treatment," I have to say that, during the seven weeks in question, I examined the patient at her home, and with her consent measured the tumor to learn what were the effects of the *x*-ray in the hands of a specialist. The period in question is the seven weeks following July 3, when the patient first visited Dr. Morton. The dates of my visits were July 3, 6, 7, 10, 14, 17, 21, 24, 28, 31, and August 4, 7, 10, 11, 14, 16, 18, 21, 23, 24, 25, 28, and 29. I stated in my letter that the tumor increased or decreased in size according to the menstruation. I drew a diagram of the tumor July 7, when largest diameter was four inches; diameter at right angles to this was three and one-half inches. July 14 the patient menstruated, and the tumor measured in the same diameters nearly one-half inch larger. After that the tumor diminished in size till August 4, when it began to enlarge, and remained larger till menstruation again occurred, when it began to diminish in size. Perhaps even Dr. Morton will believe that I had opportunities to make these "careful notes" when I state that from them I am able to tell him what drugs he or his associate gave the patient, who showed me the prescriptions.

Dr. Morton asks what has this to do with trypsin. In my first letter I avoided any discussion of trypsin, saying that I was using it, as are many other men. Trypsin doubtless furnishes certain ferments which enable the body to assimilate more of the food taken, thus prolonging the struggle between the tissues and the cancer. My purpose in writing these communications is to guard against hasty and misleading conclusions in experiments with remedies which follow one another in such quick succession as to be a menace both to the public and to the profession. No

personal animus actuates my letters, but a conscientious desire to record my observations for the value other surgeons may find in my experience.

EDWARD W. PEET, M.D.

HYOSCINE AND SCOPOLAMINE.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the MEDICAL RECORD of January 12 is an article by Dr. Birchmore, of Brooklyn, on "The Hyoscine Sleep in Obstetric Practice," in which the writer warmly advocates the use hypodermically of morphine and hyoscine hydrobromate as a means of producing profound and anesthetic sleep during the painful period of labor; this he recommends as being "without risk to mother or child." In the latest revision of the U. S. Pharmacopœia, hyoscine hydrobromate is said to be identical with scopolamine hydrobromate, and the latter is said to be identical with the former. Potter, in his "Materia Medica," seventh edition, page 340, says "nearly all the hyoscine hydrobromate supplied by manufacturing chemists consists of scopolamine hydrobromate (Schmidt)."

A number of articles have recently been published on the use of morphine and hyoscine hydrobromate in obstetric practice, and in every instance the procedure is recommended as being perfectly safe. From the number of deaths reported from the use of morphine and scopolamine hydrobromate anesthesia, which have caused it to fall quickly into disrepute, I feel that attention should be called to the identity of these drugs before we begin to hear of accidents from this anesthetic which is "without risk."

H. W. CHAPMAN, M.D.

WHITE HALL, ILL.

A COMPLETE EDITION OF THE ANCIENT GREEK MEDICAL WRITERS

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the Greek journal, *Medical Progress*, the editor, Dr. J. Phoustanos, writes: "The complete edition of all the ancient Greek medical writers which we have been preparing for many years will go to press within a few months, all the preliminary work being accomplished. We give this good news to our readers, who, for a very insignificant amount, can acquire now a complete and most precious library in which will, within a few years, be collected all the works of the ancient Greek physicians, not only those already published and of which some are out of print and difficult to obtain, but also some which exist only in old manuscripts and will now appear in print for the first time. The attempt of this publication involves enormous expense, but it will honor greatly our country to which alone belongs the right to preserve and to transmit thus the admirable work of some of her best men. We hope that this undertaking will be brought to a successful end by the aid of Greek physicians in all parts of the world, who will thus bring honor on themselves and on their country."

I know from Dr. Phoustanos that he began the preparation of this edition about ten years ago, and has had the assistance of the leading medical men and philologists of Greece in the work. The patriotic men of science who cooperate with Dr. Phoustanos are not only honoring their country, but render an exceptional service to true lovers of science all over the civilized world.

A. ROSE, M.D.

OUR LONDON LETTER.

(From Our Special Correspondent.)

ARMY MEDICAL ARRANGEMENTS—MANAGEMENT OF NATURAL LABOR—JOURNAL FOR TUBERCULOSIS—APPENDICITIS—LIVINGSTONE COLLEGE—INQUESTS—OBITUARY.

LONDON, January 4, 1907.

THE army would seem to be always in need of reorganization—or is it rather that every new war minister thinks he must alter what his predecessor has done? Not a few officers complain that the force suffers from these constant changes, and some of them say it is just a round of meddling and muddling. When one considers the subject attentively it does seem remarkable that every civilian who takes the responsible office of a minister seems to imagine himself at once qualified to set at nought the views of military experts. It accords with our parliamentary system to set a politician over the army that he may be responsible to parliament for administration, but it is an abuse when a civilian is permitted to override the judgment of the most distinguished soldiers without stating in writing his reasons for such supersession. The medical department of the army is dealt with on similar lines, and it is now officially stated that the War Secretary has decided to reconstruct the advisory board and to make it more distinctly advisory in its functions. This probably means that the politicians shall be at liberty to set aside the advice of the medical board without question. It would be no novelty were such the intention, and the way in which former administrations have been ignored is not encouraging. Still it is possible that Mr. Haldane may intend to follow the advice of his reconstructed medical board, in which case he should see that his successors in office shall be compelled to do so or to record their reasons for not doing so. The necessity of leaving a record for the guidance of their successors would be a most valuable safeguard against the propensity to meddle and muddle. If Mr. Haldane is in earnest he might gain the confidence of the department by replacing its director-general on the army council. His new advisory board is to have that officer for chairman, and he could represent the opinions of it with authority and explain its recommendations to the council as occasion might require. The other members are a civil sanitary expert, a civilian physician, a civilian surgeon, an officer of the R. A. M. C., with special knowledge of tropical diseases, an officer of the R. Engineers, the president of the Indian Medical Board, and the deputy director-general, who will act as vice-chairman. The Army Hospital and Sanitary Committee is to be dissolved and its duties transferred to the Medical Advisory Board. An officer of the R. A. M. C. is to be appointed to act on the staff of the inspector-general of the forces, as an inspector of hospitals and army sanitation.

The management of natural labor is a subject of interest to every practitioner and which it might be supposed is well understood in this century. It came up for consideration last month at the Harveian Society and produced some interesting observations. Dr. Boxall opened with a reference to the mortality in lying-in hospitals thirty years ago, which then averaged fourteen per cent. This rate has greatly diminished, but it is still high in cases treated in hospital, the main cause being, according to Dr. Boxall, septic absorption from lacerations, or the use of instruments or imperfect methods of employing antiseptics. It was, he said, not merely the use, but the proper use of antiseptics which had led to such a great improvement in statistics of hospital cases. Training in the use of antiseptics he declared to be as necessary for students as for midwives or nurses, and neglect of such training might account for the comparatively high mortality of private cases.

Dr. Horrocks said that 100 years ago pyrexia after delivery was the rule, and lying-in hospitals were hotbeds of infection. The proper use of antiseptics had effected a great improvement. Syringing was tried, but abandoned when it was seen that the hand of the accoucheur introduced septic material. He thought nature managed delivery better without artificial aids. He did not approve of chloroform or the use of forceps unless absolutely necessary. Even with strict antiseptic precautions forceps might produce lacerations or tears, which gave trouble later on. At Guy's Hospital forceps were resorted to only in four or five per cent. and the mortality was low. He did not consider gonorrhea gave rise to puerperal fever, though it did to ophthalmia neonatorum, but he depreciated the routine dropping of irritating lotions into the eyes of newborn children, for in the absence of gonorrhea they set up ophthalmia.

Dr. H. Phillips said his case mortality was only one per cent. He usually examined more than one, but used strict antiseptic precautions. He left delivery as far as he could to nature, only douched after instrumental delivery and then only once.

Dr. Adams disapproved of chloroform as having a marked effect in diminishing the pains and as often necessitating the use of instruments.

Dr. Bluett said rupture of the perineum should not often occur, even in primiparæ, when forceps were used or sufficient care was taken.

Dr. Payne asked about the use of ergot as a routine measure.

Dr. Handfield-Jones referred to the difference between hospital and private cases. He found chloroform seldom necessary in hospital, but often beneficial in private practice. In moderation it did not interfere with the progress of the first and second stages, in the third it might prevent rupture of the perineum. So with ergot, seldom required in hospital, but often in private cases. He could not agree with Dr. Boxall as to deficient training of students in the use of anti-

septics, for statistics showed that the mortality of cases treated at their own homes by students at the large hospitals was very low. Where high mortality occurred was in the unsanitary surroundings of the poorest classes, and still more fatal was examination by ignorant midwives, who infected patients before they were seen by a doctor.

Dr. Lewers said vaginal examination was a source of risk, as it was impossible to render the hands absolutely aseptic. It was therefore desirable to make out the position of the child as far as possible by external examination. When it was possible sterilized rubber gloves should be worn. Some cases of sepsis occurred in spite of all, perhaps from organisms from the vulva, by douche or finger.

Dr. W. F. Cock (president) said most cases of sepsis were due to infection by a midwife. He said to all: "Mark well your hands—there the danger lies."

The *British Journal of Tuberculosis* has made its appearance as a quarterly under the editorship of Dr. T. N. Kelynack. Contributions from our leading authorities on the subject are included in No. 1.

Sir James Sawyer attributes the increase of appendicitis of late years to chips of enamel from cooking vessels getting into the food and finding their way to the appendix. He says the enameled cooking ware came into use coincidently with the increase of appendicitis. An eminent medical friend of mine used to assure me that tomato seeds were the real culprits, and he arrived at his conclusions by precisely the arguments put forth by Sir James Sawyer. Tomato seeds are very hard and indigestible. It is known that they will pass unchanged through the bowels, but neither they nor enamel have, I think, been found in the appendix.

The report of Livingstone College for last year has been issued. It appears that there is a larger deficiency than in the previous year, perhaps due to a special appeal in the latter. Mr. J. Cantlie, editor of the *Journal of Tropical Medicine*, who has had long experience in the tropics, has emphasized the advantages of the training at the college, and the report says: "If only Mr. Cantlie's views were fully understood and acted upon Livingstone College would soon need to enlarge its borders."

The Imperial Cancer Research Fund has received a donation of £40,000 from Mr. and Mrs. Bischoffsheim, who have chosen this method of celebrating their golden wedding.

At an inquest this week on a laborer who died of consumption evidence was given that he doctored himself, as he had no faith in doctors. Asked what he took his widow said anything he was told of. The last thing he tried was an inhaler for the nose, for which he paid 3 guineas and 8 shillings a bottle for the fluid. It was said the whole lot would not cost more than three or four shillings. The coroner said he had had many cases in which credulous people were deceived by quacks. They saw the government stamp on quack medicines and thought it was a guarantee. The government gained by the stamps, but the public were deceived.

The death of Dr. Andrew Balfour, J.P., on the 26th of December, at the age of fifty-seven, has cast a gloom over the district of Portobello, and indeed of all Edinburgh. He graduated in 1873 as M.B., C.M., and proceeded to M.D., 1877. He had a large family practice and held many appointments in his district but his energies were also directed to all philanthropic work in the district. He was president of the Workingmen's Institute and directed its Sunday Bible class. He founded a branch of the Boys' Brigade and organized other valuable social and religious efforts, and has left a name which will long be cherished by his fellow citizens.

Dr. Herbert Kendall, F.R.C.S., surgeon to the Royal Hospital for Children at Bristol, died on December 22, aged only thirty-nine. He was busily engaged in his practice when he was attacked with abdominal pain and high temperature. There was some abatement of symptoms, which proved deceptive, and in a few days operation became necessary. This was successful, but pulmonary symptoms followed and he died unexpectedly of thrombosis. He was described by his pastor at the funeral as "the friend of all who knew him, true, able, highminded, strong, and tender, very fit for life or for death."

Dr. T. H. Cheatle, J.P., died on the 15th ult., at Burford, Oxon, where he had spent his professional life, taken part in all social and religious work, and endeared himself to the population far and near. He was in his seventy-sixth year.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

INDIGURIA—FUNCTIONAL EFFICIENCY OF THE KIDNEY—CAUTERIZATION OF THE LARYNX BY ETHER—MUSCULAR ATROPHY AND JOINT DISEASES—UNIVERSAL GIGANTISM—ADENOMA SEBACEUM.

VIENNA, DECEMBER 23, 1906.

A CASE of indiguria has been reported by Dr. Adolph Hecht, who observed it in Escherich's clinic. The patient was an otherwise normal boy, three and a half years old, who, according to the statements of his mother, had not suffered from intestinal disturbances. A few hours before bringing him to the clinic the mother had noticed that the child was passing green urine. Urine voided in the clinic showed the same tinge, though to a less marked degree. The urine was clear, acid, of normal odor, and on standing a green sediment composed of urates and amorphous blue masses was deposited. Chemical examination revealed nothing except a marked indican reaction. On shaking the urine with chloroform the latter acquired a distinct blue color, and the urine became lighter in color while the indican reaction was lessened. The chloroform gave the absorption spectrum of indigo. The occurrence of indigo in undecomposed urine is very unusual. One autopsy reported by Wang appears to show that the oxidation takes place in the kidney; at any rate the cut surface of one of the kidneys became blue on exposure to the air. In the present case it was not possible to demonstrate the presence in the urine of an oxydase.

Interesting observations on renal functions have been made by Dr. Schur. Both pathological and clinical observations indicate that arteriosclerosis is usually accompanied by changes in the kidney. In order to investigate the matter of renal insufficiency, Schur tested the dilution capacity of the organ, that is, the changes in diuresis caused by the administration of water in the healthy, in those with renal disease, and in those with arteriosclerosis. The persons under observation were directed to void at 6 o'clock in the morning, and after that once every hour. At 9 o'clock, one half liter of water was drunk and the urine collected during 3 or 4 hours more. These different specimens were then tested physically and chemically, and the reaction of the kidney to diuretin was also investigated. The following results were obtained: In the normal individuals pronounced diuresis followed the ingestion of the water, so that the entire quantity of fluid had been excreted within four hours, but the process of elimination was delayed in the nephritics, and in most of the persons with arteriosclerosis. The administration of diuretin gave similar results. It was found that in a large number of cases of arteriosclerosis the same conditions were observed as in dealing with nephritics. The chemical examination of the urine did not reveal anything characteristic. While a test of this sort is not of direct value in determining the anatomical disease of the kidney, it is of importance when it is desired to discover any possible disturbance of renal function in cases in which no other evidence of disease is present, for example, in arteriosclerotic changes of the organ. According to the results of these investigations we are justified in referring to renal insufficiency those symptoms which are common to both arteriosclerosis and nephritis, and also in applying the same mode of treatment to both conditions. In explaining the phenomena of urinary secretion and of renal insufficiency, Schur suggests a theory according to which processes of imbibition and deimbibition of the renal epithelium form the most important feature in urinary secretion.

Dr. Menzel has observed a case of cauterization of the larynx by ether during anesthesia. The patient was a man of advanced years, who was subjected to a severe operation requiring ether anesthesia for an hour and a half. The anesthesia was stormy and the patient repeatedly suffered from asphyxia so that artificial respiration became necessary. When the patient became conscious he was totally aphonic and also suffered from dysphagia. Examination of the pharynx showed that the palate and tonsils were reddened, and on inspecting the larynx it was seen that all parts of this organ were swollen and congested, while the vocal cords were covered with a thick white eschar. The pharynx also showed such white patches shortly after the operation so that the possibility of a diphtheritic infection was considered, but evidently these lesions also were the results of the cauterization.

Observations on animals have been carried on during several years by Anton Bum in the Institute for General and Experimental Pathology, in order to determine the mode of causation of the muscular atrophy which nearly always promptly appears after diseases and injuries of the joints. The question is whether these are to be regarded as trophoneuroses or as the consequence of the inaction of the member produced either by pain or the surgical dress-

ing. His experiments seem to show beyond a doubt that the most important part is played by the muscular inaction. Possibly, however, reflex stimuli may be concerned in articular atrophies, but it is a question whether they are of great importance in this connection. While it is true that acute trophoneurotic changes in the skin, hair, nails, subcutaneous tissues, muscles, and bones occur in articular disease, these are not constant, or even very frequent.

A six-year-old boy, presenting universal gigantism was demonstrated by Dr. Knoepfelmacher before the Gesellschaft für Kinderheilkunde. The child has been under observation for three years, and now has a height of 146 cm., the upper extremity has a length of 57 cm., the lower of 67 cm., the hand measures 15 cm., and the foot 16 cm. The entire skeleton is extremely heavy and broad, and the body is developed proportionally in all respects. The musculature is well developed, and the strength is far in excess of what corresponds to the patient's age. Particularly conspicuous is the enormous development of the genital organs, the penis being about 10 cm. in length, the testicles of the size of a pigeon's egg, and the pubic hair being present in abundance. There is no axillary hair, but there is a suggestion of mustache and beard. The child is an imbecile. Examination with the *x* rays showed advanced ossification of the hand and foot, but the epiphyseal lines are still open. Knoepfelmacher considers that the case is one of gigantism secondary to precocious puberty.

Five cases of what is called adenoma sebaceum, Pringle, have been observed by Prof. Riehl. This observer has already pointed out that in these cases there is neither an adenoma nor a disease of the sebaceous glands. Two of the patients were twin sisters, and a similar occurrence of the disease in four brothers and two sisters has already been reported. In most cases the disease has begun in infancy, in others it has commenced at the time of puberty, or in connection with some acute infectious disease. Particular interest attached to two of the patients, a girl and her father, because they demonstrated in a striking manner the hereditary nature of the disease. Three brothers of the father, the daughter, and he himself, as well as his own father and grandfather, suffered from the same affection. The brothers died without leaving any descendants. From his observations in these cases Riehl believes that the underlying condition is a much more deep-seated one than has heretofore been supposed, and he regards it as being embryonal in its inception and becoming manifest congenitally or later on in life. It is an abnormality of structure depending on an inherited tendency. According to this view the other terms applied to the disease, such as nævus sebaceus, or multiple symmetrical facial nevus, do not at all express the true nature of the disease.

OUR LETTER FROM THE PHILIPPINES

(From Our Special Correspondent)

FATAL INOCULATIONS WITH PLAGUE-CONTAMINATED CHOLERA VACCINE.

MANILA, November 17, 1906.

While Dr. R. P. Strong, chief of the Biological Laboratory of the Bureau of Science, was making inoculations with cholera vaccine upon prisoners confined in Bilibid Prison, he was unfortunate enough to use a vaccine that in some way had become contaminated with other organisms, possibly plague. In all twenty-four prisoners were inoculated, and ten have died, all with symptoms which have been attributed to the inoculation. The matter became so serious that the Governor-General issued the following official statement:

"On November 16 Dr. R. P. Strong, Chief of the Biological Laboratory of the Bureau of Science, inoculated twenty-four prisoners in Bilibid Prison with an anticholera vaccine, with which he made inoculations before, and the use of which is well known in several countries in Europe, particularly in Spain, where inoculations of this kind have been made with beneficial results. On November 18 and 19, two and three days after the inoculation, a number of these prisoners became acutely ill, and on the evening of the following day, November 26, two of them died, apparently from the results of the inoculation. Subsequently, on various days, seven more prisoners died in the prison hospital, and one prisoner, whose sentence had expired and who had been released from Bilibid, died on November 21 at 152 San José. These inoculations were made by Dr. Strong under authority dated March 1, 1904, which authority was for 'the carrying on, under the supervision of the Director of the Biological Laboratory, of the investigation among inmates of Bilibid Prison with reference to diseases which prevail among them, as outlined within.' Since this authority was granted, over half the prisoners at Bilibid have been inoculated against cholera without any harmful results whatever.

"All these cases of death were promptly referred to the Coroner for proper action by him, and under his instructions autopsies had been made in each instance. An investigation is now being made under his direction to determine the exact cause of death in each instance, and upon that information being obtained, the coroner will render the verdict required by law.

"It appears that probably these deaths have resulted from the anticholera vaccine which was used, having in some way become contaminated with plague germs while the vaccine was being prepared in the government laboratories. A number of years ago thousands of inoculations with this same anticholera vaccine were made by Dr. Ferrán in Spain, and similar instances of contamination occurred and some deaths resulted. I wish it understood, however, that the accidents which resulted from this inoculation were not due to the method itself, but to the contamination of the vaccine just before final preparation. No test as to whether the vaccine has been contaminated can be made on animals, for the reason that the Ferrán virus must be prepared for use and used while fresh. Immediately after being notified that the prisoners inoculated had become sick, Dr. Strong laid the matter before the proper authorities for investigation and action by them.

"It is needless to say that Dr. Strong is grieved beyond measure at the unfortunate accident which occurred with these twenty-four inoculations. Dr. Strong has made, in the past few years, thousands of inoculations with anticholera and antiplague vaccine, and never before have any untoward results followed. These particular inoculations were made on his own responsibility, under the authority above described, and were in no way authorized by or participated in by the Director of Health or by the Director of the Bureau of Science. I am immeasurably grieved at the unfortunate result of this accident, and it is unnecessary to add that every possible step has been and will be taken by the government to care for the other patients who have suffered from this inoculation, and to relieve, as far as possible, any distress which may have been caused the families of those who have been affected."

Since the statement was made by the Governor-General another prisoner has died, and the thirteen remaining are still in a very serious condition. The cases have all been isolated and every reasonable precaution has been taken to guard against the spread of the infection among other prisoners.

Progress of Medical Science.

New York Medical Journal, January 12, 1907.

The Untrained Nurse; Her Legitimate Field and Her Opportunity for Self-improvement.—J. H. Wiggins discusses the question of nursing as it affects small communities in which the patients are unable to pay the usual city price for nursing. He declares that so far as remuneration is concerned, the city nurses are practically maintaining a trades-union state of affairs in that they are not willing to work for less than twenty-five dollars per week, a price prohibitive for most people in small communities. He believes that there is a field for the nurse who has not had the training of a city hospital and that the correspondence schools for nursing have a legitimate field in supplying the theoretical portion of instruction. The practical portion must be given by the country physician at the bedside of his patients, and he claims that if physicians will take the trouble to do this in case of such women as may show an aptitude for this work, he will go far to solve the question for small communities and make his own work much more satisfactory by developing the material at hand.

The Insanity of Inebriety.—According to T. D. Crothers the term inebriety describes a pathological condition demanding alcohol for its anesthetic effect and refers to some depressed state or psychic condition which consciously or unconsciously calls for relief which alcohol gives with satisfaction. Alcohol is not the cause, but merely a symptom. Hence the condition must be one of disease and organized degeneration. The author then goes on to describe various types of this form of insanity and the proper methods which should be followed in controlling it. He notes that to all ordinary observation a periodical drinker resembles the insane in conduct and rea-

soning. Such persons use spirits to extreme toxic states for a brief period, then rigorously abstain for a while and then relapse. This resembles acute mania in the dominance of the drink impulse overwhelming the mind and body for a period, then subsiding. It also resembles epilepsy in its sudden convulsive onset, and inability to reason and control up to a certain point. Often the periodical drinker is unconscious of the import and meaning of these symptoms. He will suffer from insomnia, headaches, great irritability, intense nervous anxiety, and dread of loss. He will consult physicians, believing he has serious organic diseases, go off on vacations, make changes in his surroundings and business relations, then all unexpectedly, will drink to great excess, when all these symptoms will disappear. In most cases there are distinct premonitions of the drink storm in conduct, reasoning, and appearance, which the friends recognize, but the victim does not. A large class of the periodical drinkers seem to have some consciousness of the coming attack, and use means to avert it. They often go to hospitals and sanatoria, particularly where they have had some experience before, appearing in a state of great fear and excitement, which quickly disappears. The storm is averted for the time being, and such cases are always very hopeful. In many persons of this class of periodical drinkers, the premonitory symptoms take on the form of reasoning manias. Thus they make elaborate preparations in business affairs, providing for their absence during drink attacks. Many of these persons are active in social and religious work, but a period of unusual fervor is often a precursor of a drink storm. Some show great exaltation of mental activity; others take on a different personality while drinking. With some certain atmospheric and electric conditions bring on an attack. In all there is an unstable highly sensitive brain and nerve organization with a tendency to exhaustion on the slightest occasions. A clinical history shows that heredity is a very large factor in this instability and feeble pain resistance, it also shows that injuries, irregularities of living, defective nutrition, sleep, and excessive strains and drains with other causes predispose to a convulsive condition of nerve energy and depression, for which spirits is a grateful narcotic.

The Pathogenesis of Facial Hemiatrophy.—A. Gordon reports a case occurring in a negro male, aged forty-two years. He cannot believe in the exclusivism of the sympathetic origin of the malady, as his own case seems to controvert such a theory. According to some observers a primary atrophy of the subcutaneous cellular tissue is the essential feature of the condition. Others believe that it is of a nervous origin and may follow affections of either the sympathetic, trigeminus, or facial nerves. The majority of cases reported point to an involvement of the inferior sympathetic ganglion. Concomitant pulmonary lesions are found at the apex in many of these cases. This is accounted for by the relations between this ganglion and the pleura at its apex. The author's case presented not only a trophic disturbance of the facial muscles, but also sensory disturbances over the area covering these muscles. That the lower cervical ganglion did not play a rôle in the causation of the disease in this case was evident from the fact that there were no pupillary changes nor vasomotor disturbances on the affected side. It is possible that the sympathetic fibers found in the fifth nerve may play a certain rôle in the disturbance of nutrition of the facial muscles, but association of sensory disturbances and the neuralgic pain in the same area immediately preceding the beginning of atrophy present a strong presumption in favor of the trigeminal pathogenesis of the affection. As to the question of facial nerve it cannot be admitted in this case, as there was no genuine palsy of the affected muscles. The patient had preserved the ability of contracting them, but the degree of contraction was, of course, smaller by reason of the atrophy. The sensory disturbances also were against this view. The author concludes that hemiatrophy of the face may be caused by the lower sympathetic ganglion with its nerve, by the fifth nerve, by the Gasserian ganglion, finally by a central lesion. The tendency of some writers to attribute Romberg's trophoneurosis exclusively to the sympathetic nerve fibers is erroneous.

Certain Diseases of the Peritoneum.—J. G. Mumford considers acute, subphrenic, diffuse, chronic, and exudative peritonitis, chronic adhesive sclerosing peritonitis, and tuberculosis of the peritoneum. He describes the pathological changes in each of these conditions, their symptoms, and gives his own ideas as to the proper treatment of each. Referring to the old medical treatment by opium, he notes its modification by some physicians who limit the dose of opium to that which will allay pain and they give the remedy hypodermatically. They attempt to relieve the intestinal distention by giving high enemata of salts, glycerin, or turpentine; they nourish the patient by enemata or by small quantities of liquids by the mouth; and they allay thirst by allowing the patient to suck cracked ice. The author believes that if a physician proposes to treat a case without operation no such half-way measures are permissible. The proper nonoperative method is to put the intestines at rest by emptying the stomach through lavage, and then keeping it empty. The stomach washing may be repeated if that organ fills up again with material regurgitated from the intestine. After washing out the stomach, put into it nothing until convalescence is established, no water, no food, no cracked ice. Give morphine for pain, if there be pain. Nourish the patient by nutrient enemata, in four ounce doses every four hours. Relieve his thirst by subpectoral infusions of normal salt solution, or by intravenous infusions. Stimulate him with strychnine. Such treatment, heroically followed, often will head off and subdue an advancing peritonitis. Most surgeons, however, are loth to adopt these measures as a routine, because they feel that the fountainhead of the trouble, the local lesion—perforated appendix, duodenum, or whatever it may be—is thus left to keep up its contribution of poison to the peritoneum. The author expresses himself as in hearty sympathy with this latter view.

Journal of the American Medical Association, January 19, 1907.

Blood Cultures in Children.—T. M. Rotch and H. C. Low have been particularly impressed with the value of blood cultures in children in cases with indefinite and misleading histories, in their hospital service. In some obscure cases it may be the only means by which one can say whether sepsis is or is not present, and it may also reveal the etiological factor. They have found the method more practicable in children than has been supposed, though least so in the younger ones. In the first four years of life it was found possible to obtain sufficient blood for a culture in 21 per cent. of the cases tried, in the second four years 72 per cent., in the third 86 per cent. Their technique is described in detail: the blood is taken from a vein in the arm with all precautions against contamination, and directly inoculated into the culture medium. With this technique, they believe a negative culture is of value in prognosis, if not in diagnosis and treatment. The cases in which it promises to be of most help are the obscure conditions of so-called cryptogenic septicemia and autointoxication. The uncomplicated cases of endocarditis, chorea, arthritis and obscure septic infections offer a large field for its use.

Improved Technique in Otology.—W. S. Bryant reviews the improvements that have been made, but not yet incorporated generally into practice. These include: (1) The complete mastoid operation; (2) the improved instruments, such as electric burrs, Richard's curette, and the author's hand-driven front-bent gauge, which greatly increase the safety, speed, and facility of the operation; (3) rational disposal of the soft parts; (4) preservation of the sound-conducting mechanism in selected radical cases; (5) ligation of the jugular vein as high up as infection will allow before opening the sinus and exenteration of the jugular bulb; (6) management of brain abscess by the open method; (7) blood clot, drained blood clot, and the author's modification of the drained blood clot in the simple mastoid operation; (8) Reik's "protective sheet"; (9) blood clot in cases of epidural abscesses; (10) cosmetic results of the blood clot, drained blood clot, and evened-up bone wound; (11) lessened shock and jar; (12) shortened convalescence; (13) elimination of secondary operation; (14) avoidance of accumulated cicatricial tissue to interfere with the sound-conducting mechanism. All these measures, he thinks, tend to encourage earlier operations and favor better results than could be secured without them.

The Railroads and Tuberculosis.—J. R. Haynes advocates, as protection for the public, that purchasers of long-distance tickets should be questioned as to whether they have a cough, and if they have, that passage be refused, unless the applicant can show a certificate from the Board of Health or some reputable physician stating the cause of the cough, and that for those allowed to travel, special cars on specified trains should be provided. For consumptives traveling short distances cars with special nonupholstered compartments might be provided on certain trains. "Sentiment must be brushed away and tuberculous passengers must travel in such a manner as society may prescribe, in order that the many shall be protected." He would have it provided that any tuberculous passenger evading by false representations these provisions should, if discovered, be put in the hospital car, or if there be none, be put off at a station where he can be cared for and compelled to wait until the first hospital car going his

way arrives; and Haynes would have a heavy fine imposed on any physician who would connive at any evasion of these protective regulations. The hospital cars should be specially constructed and upholstered with leather or washable fittings, and carry a trained nurse and apparatus for disinfection. All compartments that have been occupied by the tuberculous should be thoroughly disinfected as soon as vacated.

The Sanatorium in the Tuberculosis Crusade.—C. L. Wheaton considers the sanatorium one of the most important aids in the crusade against tuberculosis; climate can no longer be considered the one great factor in the cure. The sanatorium has shown that pure air in any climate is the essential thing in the arrest of this disease. It is not, however, through the private sanatorium that the most beneficial results are to be obtained, there should also be public sanatoria for indigent consumptives, without depending altogether on antituberculosis associations taking the initiative and asking only for a certain amount of government aid. While a future successful serum treatment of the disease is a possibility, we should at present rely on the rational methods at our command and discourage the tendency to faith in nostrums and quacks.

Aerotherapy and Tuberculosis.—S. A. Knopf describes a window tent for the fresh-air treatment of the patients with tuberculosis, which is practically an awning put up inside of the window, instead of out of doors, to cover the patient's bed. By lowering or raising the window sash, sufficient air space can be left to ventilate the room also, without interfering with the open-air treatment, the air of the room not being allowed to mix with the air breathed by the patient. A transparent pane is made in the tent so as to enable the patient to be observed, without disturbing the arrangement. Knopf describes the advantages of the contrivance at length, its inconspicuousness, the shelter from room draughts, the opportunity for observation to patient, the prevention of drop infection by coughing, and chiefly its comparative inexpensiveness. The contrivance, though now obtainable from the manufacturers, the Kny-Scheerer Company, is not patented, and a similar arrangement can be improvised if necessary. In conclusion, he refers to the value of carefully conducted respiratory exercise and of solar therapy, in the treatment of consumptives

Painful Heel.—In defining this condition, J. J. Nutt says the term is not exactly descriptive or distinctive, as not all pain referred to the heel is due to the same condition. Young's definition, which is clear and exact, is "severe pain, accompanied by tenderness, in the center of the heel about the posterior attachment of the plantar fascia." It is probably not a rare condition, the milder cases are likely to be self-treated, and therefore do not come to the knowledge of the physician. Usually the only abnormality found on examination will be a limited range of flexion of the ankle; in other words, nondeforming club foot, or as he prefers to call it "Shaffer's disease" exists. He admits that other causes are possible; exostosis, bursitis, or neuroma may be the primary lesion, but he believes they are more often secondary to the traumatism to the plantar fascia. Nutt thinks that it is usually produced in those cases, in which the shortening of the gastrocnemius—the *sine qua non* in Shaffer's disease—exists to a slight extent, and that the plantar fascia, instead of becoming weakened and lengthening throughout its extent, has given way at the calcaneum attachment. This he does not find due to any sudden traumatism, but rather to the repeated slight strains of continuous stepping. The rational treatment is the relief of the strain on the shortened gastrocnemius by Shaffer's traction shoe with its steel arch, and by directions as to the proper method of walking.

The Lancet, January 5, 1907.

Pathology of the Liver in Cardiac Disease.—R. N. Salaman presents a paper based on the post-mortem records and detailed clinical histories of over sixty cases. He speaks of the ordinary case as the "back-pressure" liver, discussing the general "nutmeg" appearance, with its fat absorption through the hepatic lobule and its fresh fat deposition as the center. The main factor predisposing to the accumulation of fat in the central zone is undoubtedly stasis. The capsule is generally thickened, although this is slight in the case of Glisson's capsule. Fibrosis is found in varying degree about the sub- and central lobular and hepatic veins. His division of these livers is into three classes: first, the engorged liver; second, the nutmeg liver proper, and, third, the cirrhotic nutmeg liver. The author believes that the liver acts as a safety valve to the heart and that the various changes in structure undergone after prolonged back pressure modify that safety-valve action and seriously alter the clinical course of a given case. His experiments (detailed in the paper) show the following results: (1) that under conditions of cardiac stress the liver will draw off a large volume of blood from the right auricle; (2) that after a time certain changes take place leading to fibrosis which very materially affects the distensibility of the liver; (3) that the fibrotic process, by increasing the force of the liver's recoil, prevents the use of the latter as a reservoir in which blood may accumulate; (4) that in complete compensation there are no engorgement of the liver and no back pressure; and (5) that while the liver may be looked upon as a spongelike safety valve to the heart, continued use of this safety-valve action leads to its own abolition. The author then takes up the familiar clinical signs, such as superficial tenderness from extreme liver distention, tenderness of the liver on palpation, deep abdominal tenderness, onset of edema, etc., and claims that they bear out his theories. He divides the ascites of cardiac disease into (1) that of acute, and (2) that of chronic back pressure. The first type is characterized by the following features: (1) small in quantity, averaging one pint or in one exceptional case four pints; (2) it is of a high color and often bloodstained; (3) the peritoneum of the gut is opaque with engorged veins marked on it, or of its normal semitransparency, but with engorged veins, and (4) in all cases there will have been edema at the time of death, and in nine out of ten cases it will be of such amount as to be found post mortem. In this type meager ascites only appears after the utmost expansion of the liver has taken place, and this failing entirely to relieve congestion, the pressure has been transmitted through into the portal vein and its tributaries, some of the fluid coming from the intestinal peritoneum and some from the liver capsule. Ascites of the second type is characterized by: (1) being very large in amount, often requiring tapping; (2) of a clear yellow color; (3) the peritoneum of the intestines is invariably opaque and thick, peritoneal adhesions are very common (the veins may not be engorged to any great degree); and (4) the liver is invariably of the cirrhotic type. Ascites associated with this condition of liver is not necessarily the result of an increase in back pressure; it may and does often occur while the heart is compensated, so that some cases, notably one of the author's, spent the last year of his life being tapped and ended it with septic peritonitis, the heart being compensated the while. The effusion of fluid is in this type comparable to that in ordinary cirrhosis of liver, due to the difficulty experienced by the portal blood in making its way through the fibrosed organ, a difficulty that may be doubtless increased by some degree of back pressure.

Hyperplastic Tuberculous Pericolitis.—Three cases are reported by F. S. Kidd, who reviews the literature of the disease and gives a general description of it. The main points brought out are the following: first, that there arises a peculiar form of localized chronic hyperplastic inflammation in the submucous, muscular, and subserous coats of the bowel, which may lead to intestinal obstruction and its consequences, and which affects the mucous and serous layers to but a small extent. Secondly, that this is in all probability due to a localized infection of the wall of the gut with an attenuated form of the tubercle bacillus. Thirdly, that this form of inflammation is very liable to be mistaken for carcinoma or sarcoma either at operation or at necropsy. Fourthly, that by careful examination with the naked eye this form of disease can often be distinguished at the operation from a malignant growth, when once it is realized that such disease exists and the appearance it presents is borne in mind. Fifthly, that it can always be recognized with certainty by microscopical examination, which will prove of advantage in prognosis and treatment. Other features are that the thickening of the bowel consists of firm connective tissue and fat, affects the muscular, mucous, and subserous coats of the bowel, and rarely shows any "tubercles" or caseation. The ileocecal region is the most common site for this disease, but it is found at times in any part of the large bowel, especially the sigmoid flexure and rectum, and less commonly in the ileum. The mesenteric glands which drain the area of gut affected undergo a similar change or may present the usual picture of gland tuberculosis. In the rectum it has been mistaken for tertiary syphilitic thickening. A precisely similar hyperplasia caused by the tubercle bacillus occurs in other parts of the body, such as in the larynx, peritoneum, pleura, joints, and lymph nodes. The condition is not usually discovered until the peritoneal cavity is opened. Apart from excision, or after it, the treatment to be followed is that usually adopted for tuberculous lesions, perhaps combined with tuberculin injections. In one case the tumor was brought out on to the skin at the first operation, and was removed later. By this means all shock was avoided in the patient, who was in a condition of low vitality.

Bronchiectasis in Childhood with Some Observations on the Condition Known as Honeycomb Lung.—C. R. Box notes that the cavities in a so-called "honeycomb" lung may be of at least three different kinds. Some are bronchiolectases; some are atriectases combined with emphysema, and some are formed by necrosis of lung tissue. The frequency with which the bullæ project beneath the visceral pleura is in itself evidence that all are not simple bronchiolectases, for the bronchioles do not abut upon the serous membrane. The formation of a honeycomb lung is due to bronchopneumonia. Pleural adhesion plays no part in the initiation of the condition, although it may develop later, for in many cases there is no pleural adhesion at all. The question naturally arises whether these lungs are the antecedents of the chronic bronchiectases of childhood and later life. There is strong presumptive evidence that some at least of the cases do arise in this way. Comparison of a honeycomb lung with a saccular bronchiectasis from an adult makes it appear almost certain that the latter is but an advanced condition of the former. The shape, grouping, and communications of the cavities are similar, even the falciform septa may be recognized, but in the adult the walls and septa are thicker and the lining membrane more opaque in consequence of the long duration of the inflammatory process. Concerning treatment, the author notes that since most of the cases follow the bronchopneumonias of measles and pertussis, the indications are suggested by the features of these diseases. While the bronchiectases themselves represent permanent changes, much can be done to render the patient comfortable. The routine procedure should consist in regularly emptying the cavities as far as possible, and the administration of such drugs as are excreted by the lung and presumably exert an antiseptic influence on the bronchial tubes and their contents. The best method of emptying the cavities is by the process of inversion. Children can easily be taught to invert the body by leaning, face downwards, over the side of the bed with the hands resting on the floor. By this method considerable quantities of pus may be evacuated which would otherwise stagnate in the tubes and infect adjacent areas of lung. The best times to practise inversion are on rising in the morning, to get rid of the accumulated secretions of the night, and on retiring to bed, in order to avoid as far as possible overflow of the contents into adjacent bronchi and the irritating and disturbing cough excited by the presence of the pus. An alternative method of getting rid of the secretions is by the use of emetics, but in comparison with the method of inversion emetics are both uncomfortable and uncertain. The emetic usually advised is vinum ipecacuanhæ, and it is surprising what amounts of this preparation children will swallow without any result at all. The drugs which yield the best results in practice are garlic, creosote, turpentine, and cod-liver oil.

British Medical Journal, January 5, 1907.

Functional Albuminuria in Athletes.—W. Collier presents the results of his observations on Oxford University students in training for boat racing. Tests were made of the urine of 156 men. With the cold nitric acid test 49 showed no trace, 24 a slight ring, 54 a definite ring, and 27 a very thick ring; in other words, with this particular test 81 specimens out of 156 contained a very definite amount of albumin. With the heat and nitric acid test 24 showed no trace, 41 a faint trace, 58 a definite cloud, and 31 a thick cloud: that is, 89 out of 150 showed a very definite amount, or 57 per cent. of all the cases. The better the crew the more constantly did the albuminuria show itself. The author is aware of the incompleteness of his observations, for he says it would have been more satisfactory to have examined the men in the morning, before their rowing, and again in the afternoon, after it. He asks, ought we longer to advise young men who pass large quantities of albumin after severe muscular exertion to give up all hard athletic competition? He thinks not. It would appear that just as we may expect to get evidence of hypertrophy of the left ventricle and emphysema in the man who habitually indulges in violent athletic contests, so we may expect to find a definite amount of albumin in his urine for a few hours after violent exercise. Finally, he asks, ought the assurance companies to continue to refuse to consider the acceptance of the lives of young men between the ages of say 18 and 30, whose urines are found to contain albumin after exercise when it can be shown that no albumin is present after rest or after a meal? He thinks not.

Age Incidence of Gastric Ulcer in the Male and Female.—W. Calwell notes, regarding the age incidence in the female one fact of importance, namely, the sudden and profuse hemorrhage occasionally attacks the adolescent female who has made little or no complaint of stomach trouble; it is quite possible that this blood may come from an oozing, but in other cases it has been clearly demonstrated that it is from an ulcerated blood-vessel. The author regards it as very credible that small ulcers form and heal with great rapidity. Clinical histories would lead to the belief that they may break down in a few hours, and it can be understood how healing might occur in the same period of time if the edges of the ulcer could be kept in apposition, assuming that the pathological changes had ceased. The author presents a chart showing the age incidences in 200 cases, the time taken being that of the onset of symptoms. In many cases of hematemesis it may be possible that repeated bleeding may be brought about by alternating distention and contraction of the stomach, and that attention is to be paid to the extent of gastric resonance, and frequent sippings of a mild carminative tried as a treatment. Such cases are not rare, although a fatal termination is rare; but there is still the much larger class of cases, which resemble this case in their often slight, evanescent dyspepsia, and in their chlorotic condition, but do not complete the picture by an attack of hematemesis; they are mostly classified as "tea," "anemic," or "neurotic dyspeptics." The simplest explanation seems to be that many of these cases are really cases of ulcers, and that the accident of hematemesis depends on whether the ulcer is situated on a vessel or not, and the accident of perforation, which also occurs unexpectedly, on the depth of the ulcer. In such acute cases where, as happens in the very large majority, no complication occurs, recovery is rapid with rest and a little starvation. Each time, however, these attacks recur, the symptoms of chronic ulcer become more apparent. Nearly every one of these female patients is chlorotic, and if we pursue our investigations, nearly every chlorotic, in marked contradistinction to the adolescent male, has, or has had, some stomach trouble. The author's chart shows that ulcer in the female increases in frequency coincident with the increase of chlorosis. After the ages of 25-30 the onset of ulcer is about the same in the two sexes. The author declares that there is presumptive evidence that if we exclude all cases of ordinary gastric catarrh or dyspepsia from irritant food, and of dyspepsia of neurotic origin, we have still a large number of cases of "dyspepsia" in the adolescent female which are really due to ulcer; that these ulcers rapidly form and probably as rapidly heal, and that it is only by the accident of hemorrhage or of perforation, or of repeated relapses leading to chronicity that we recognize their real nature; and, lastly, that there are apparently two kinds of ulcer—one connected in some mysterious way with chlorosis and frequently with amenorrhea, probably being a developmental disease; and the other being a type which occurs pretty equally in both male and female, and is not often seen till after 20.

Pythogenic Pneumonia.—H. Freeth reports the case of a woman of 28 years with a severe catarrhal throat. The plumbing in the house in which she lived was not properly flushed. The day after she was first seen her husband came down with a lobar pneumonia, which ran a favorable course and defervesced on the ninth day. The wife's throat had meanwhile become well, and she nursed her husband, but on the ninth day after his defervescence she was attacked with pneumonia at the right base, and in about another week the left lung became involved, but she recovered without incident. The author notes the following points: (1) The almost simultaneous infection of the wife's throat and the husband's lung at a time when the house drains were dry and foul, favoring the opinion that the nature of the infection was the same in both (septic?), and fixing the incubation period of the pneumonia to within three days. (2) The infectiousness of the disease, as proved by the wife's attack, unless it be supposed that her system had been infected from her throat, and that the disease had developed later in the lung—a supposition, I think, rendered of little value by the fortnight of health she enjoyed between the two complaints. (3) The influence of insanitary conditions as a source of the infection, lending weight to the term "pythogenic pneumonia."

Filaria Among the Troops in Jamaica.—C. F. Wanhill presents the following conclusions: Although the majority of the dogs of the island are infected with *Filaria immitis*, human filariasis is comparatively unknown. Although, since the slave days, the disease must have been continually introduced into the island, there are some local factors which are against the successful development of the parasite in the human body. One factor may be the malarial poison, which must be present in most of the native population at some period of their lives. Dogs do not suffer from malaria, and their universal infection with filaria may be thus accounted for. The disease is so rare that no special precautions to permit its introduction among the British troops on the island have been thought necessary.—*Journal of the Royal Army Medical Corps.*

Book Reviews.

THE MEDICAL STUDENT'S MANUAL OF CHEMISTRY. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics, and Toxicology in Cornell University. Sixth Edition. New York: William Wood & Co., 1906.

IT is only four years since the fifth edition of this work appeared. On that occasion the section on chemical physics was enlarged and that on organic chemistry was rearranged and largely rewritten. At the same time a section on physiological chemistry, consisting of over one hundred pages, was added. In the present edition the section on chemical physics and general chemistry has been entirely rewritten and rearranged, and also considerably extended in scope. The section on inorganic chemistry is practically unchanged; and that on organic chemistry has been extended and rearranged where necessary. The section on physiological chemistry has been greatly enlarged and almost entirely rewritten; it is a subject of vast importance, and is here treated most admirably; and although the section occupies two hundred pages, it is difficult to see where condensation or elimination could have been effected. Indeed, the student will probably find that the matter here presented is already in a sufficiently concentrated form. The book has, for a long time, been well known as a first-class textbook; and those who have made acquaintane with the earlier editions can be assured that the present volume exceeds even the high standard attained by its predecessors. The book is literally full of chemistry; and if physicians expect to be able to understand present-day medical problems they must be well equipped in this branch of science. We know of no book which will give the physician as much solid information on this line as the volume before us. The arrangement of the subject is logical, the typography is excellent, and the book contains everything on chemistry that the student or practitioner is likely to require. At the same time the volume contains nothing extraneous or superfluous, and nothing that will have to be unlearned. In addition to its scientific value, the book has literary merits of a high order which go far toward making the study of the subject more attractive. To the physician in search of an up-to-date chemistry, which is adapted to his particular and peculiar needs, and is also authoritative and readable, and which is neither weighted down with academic discussions nor diluted with the facts, fancies, or fictions of pharmacy and therapeutics,—we would say, get this book, and study it.

THE PATHOLOGY OF THE EYE. By J. HERBERT PARSONS, B.S. D.Sc. (London), F.R.C.S. (England), Assistant Ophthalmic Surgeon, University College Hospital; Assistant Surgeon, Royal London (Moorfield) Ophthalmic Hospital; Ophthalmic Surgeon, Hospital for Sick Children, Great Ormond street. Volume III. General Pathology.—Part I. New York: G. P. Putnam's Sons, 1906.

THE third volume of "The Pathology of the Eye," by J. Herbert Parsons, contains 352 pages of text. It treats of the "general" pathology of the eye. The consideration of congenital abnormalities occupies 137 pages. The different parts of the eye are considered separately. A short bibliography, which in the rarer conditions covers all of the published cases, is found at the end of each article. The description and the known facts are given completely but briefly. The deductions drawn are logical and show evidence of a wide grasp of the subject and a rare discernment. The illustrations, which are in black and white, are sufficiently numerous, are well chosen, and properly supplement the text. A chapter is devoted to the pathology of myopia, one to hypermetropia and astigmatism, one to the normal circulation of the eye, including the arterial, venous, and lymphatic systems, and one to the nutrition of the eye, taking up the nutrition of the cornea, lens, and conjunctiva. The theory of immunity, normal intraocular pressure, and glaucoma receive a chapter each. This volume is one of much interest, the descriptions of congenital anomalies presenting rare conditions. The consideration of the circulation and nutritional conditions introduces questions that are of the greatest importance in the study of the morbid processes of the eye. This series of books is of exceptional worth to the ophthalmologist, and is also of value to the general pathologist.

PREVALENT DISEASES OF THE EYE. By SAMUEL THEOBALD, M.D., Clinical Professor of Ophthalmology and Otology, Johns Hopkins University. Philadelphia and London: W. B. Saunders Company, 1906.

THE matured experience of a well-informed, careful worker in ophthalmology is manifest in the pages of this excellent work. While the optical part of ophthalmology may be written, and well written, by one who has but recently completed the study of physiological optics, the clinical part cannot be well presented by any other than one who has had many years of practice with abundant material for observation. The volume before us is one of 551 pages. It is well printed and abundantly illustrated. Chapters on "Methods of Examination" and "General Observations Upon Treatment" are followed by chapters on "Diseases of the Eyelids and Orbit," "Diseases of the Lacrymal Apparatus," and diseases of other parts of the eye in natural sequence. A special chapter is devoted to glaucoma. Anomalies of refraction and anomalies of the muscles are then described. Then comes a chapter devoted to injuries of the eye and its appendages. An appendix devoted to formulæ and an index follow. The descriptions of the diseases of the eye are concise and up to date; facts with very little theory are set forth. The operations on the eye and adjacent tissues which have been proven to be of greatest value are described at considerable length and the technique is made sufficiently plain to enable any one possessing general surgical skill to perform them with promise of success. The work is an excellent one of its kind and may be read with profit by all who are doing practical work in ophthalmology.

AIDS TO GYNECOLOGY. By ALFRED S. GUBB, M.D. (Paris), M.R.C.S. (England), Late Senior Obstetric Physician, Westminster Hospital, etc. Fourth Edition, Tenth Thousand. New York: William Wood & Co., 1906.

As an outline for further study, or in the place of notes of lectures, this volume will serve a useful purpose. As a rule the salient features of each disease are presented in such a way that they may impress themselves upon the memory of the student. There are several tables of classification and of differential diagnosis, and illustrations are inserted where necessary.

BUFF. A Tale for the Thoughtful. By a Physiopath. Boston: Little, Brown & Co., 1906.

THIS is a farrago of nonsense, antivaccination rot, and tirades against scientific medicine, yet it contains some sound doctrine regarding diet, fresh air, and exercise. It will probably do a lot of harm to the ignorant, just as Christian Science does, but it contains some nuggets which might be of service to the physician who is too wedded to the materia medica and neglects the dictates of commonsense. But the man who is in such a parlous state is not likely to be converted by a book with so much error and so little sense as this.

SAUNDERS' POCKET MEDICAL FORMULARY. By WILLIAM M. POWELL, M.D., Author of "Essentials of Diseases of Children"; Member of Philadelphia Pathological Society. Containing 1,831 Formulas from the Best Known Authorities. With an Appendix Containing Posological Tables, Formulas, and Doses for Hypodermic Medication, Poisons and their Antidotes, Diameters of the Female Pelvis and Fetal Head, Obstetric Table, Diet Lists, Materials and Drugs used in Antiseptic Surgery, Treatment of Asphyxia from Drowning, Surgical Remembrancer, Tables of Incompatibles, Eruptive Fevers, etc., etc. Eighth Edition, Adapted to the New (1905) Pharmocopœia, Philadelphia and London: W. B. Saunders Company, 1906.

IT is a poor physician who has to resort to ready-made prescriptions in his treatment of disease, yet a formulary of this kind is not without its uses. Even the best of therapeutists sometimes fails to get the results he expected from the remedies provided, and he may in such a case find a hint in looking over the formulæ in this book which will put him on the right track. The diseases are arranged alphabetically, and under each are given a number of remedies and combinations of remedies which have been found serviceable in treatment. The book is interleaved with blank pages, upon which the possessor may record his "favorite prescriptions" and those which he has found of service in special cases. A thumb index facilitates ready reference. In addition to the formulæ there are a number of useful tables indicated in the title of the book.

BLAKISTON'S QUIZ COMPENDS. A Compend of Genito-urinary Diseases and Syphilis; Including Their Surgery and Treatment. By CHARLES S. HIRSCH, M.D., Assistant in the Genitourinary Surgical Department, Jefferson Medical College Hospital. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1906.

THIS is the latest addition to the well-known series of quiz compends, and it is up to the standard of the best volumes of the set. The book contains all that the student is likely to want on the subjects in question. The text is clear, concise, and readable; and the illustrations are well selected. In case another edition is called for, the publishers should have the ten pages of prescriptions, at the end of the volume, thoroughly overhauled. Chemical formulæ, English, and Latin (often incorrect) seem to be thrown together in haphazard fashion, and the result is a style of prescription writing which should be carefully shunned by students and authors alike.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Annual Meeting, Held January 3, 1907.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

Address of the Retiring President.—Dr. CHARLES L. DANA chose for the subject of his address "The Academy of Medicine," and said that the custom of having a retiring address was not a widely prevalent one, but that it was not an unwise one if the President retired without too much forensic effort, and used the opportunity chiefly to tell what his experience as an executive officer had suggested for guidance and inspiration. Bearing upon the latter, he said that the dominant feeling created in him by his two years association with this body was one of enthusiastic conviction that this Academy did extraordinarily important work for the profession and community, and had the capacity to do more. Few could realize how far-reaching and effective this organization had been. The management of so complex a body, with its thirteen constituent societies, its building, its books, involved no small amount of anxiety and responsibility. He confessed that after these years of rather strenuous attempt to bring out all that was possible in the Academy, there had come to him a real affection for what was technically only a soulless corporation. As he left the Presidency this was his feeling: That the Academy of Medicine was an organization wisely planned and unselfishly and effectively organized to bring out what was best in scientific and practical medicine in this community, and he said he could not finish his task without expressing his awakened enthusiasm in the Academy, knowing so well the work it did for professional progress and the betterment of the entire community. He was imbued with the Academy idea, and thought that all communities large enough to form a nucleus of physicians would be better off if the physicians organized on basic Academy principles. It was the Academy or its equivalent that humanized and elevated the medical profession. He did not mean to belittle the regular and necessary State and County organizations. We must have these, but must not stop with them. The doctor needed to have his social instincts properly satisfied. The change in the conditions which affected medical societies in their work was a matter which must seriously interest those who were responsible for their success. The demands upon the doctor's time made it necessary that a medical meeting should mean something to him, or he would not come to it. This had led to the appointing of a Council of the Academy, which met twice a year at least and formulated lines of work and subjects likely to be most interesting and important. It had to be taken into consideration that to a large extent clinical or descriptive medicine, and even gross pathology, was a finished story. The modern clinician had to work with the laboratory at his side in order to make progress in the knowledge of disease. There was still a field of prevention and therapeutics where much work remained to be done. It was true that we had not yet learned to interpret accurately what the patient said he felt. It was easy enough to recognize a crepitant râle or a cardiac dilatation, but not so easy to explain what was the matter when a patient said he had a persistent pain in the back, a continual pressure on the top of the head, or nervous indigestion, etc. Some, indeed many, doctors assumed that if nothing could be seen, heard, felt, or precipitated in a test tube, there was nothing the matter with the patient, whereas exactly the contrary was true. The exact interpretation of subjective complaints furnished a wide and perhaps the only wide field left, calling for original, careful, and acute clinical investigation. The annual reports had shown the prosperous condition of the Academy at the present time. Soon they would have a waiting list, although the limit of membership had been increased. Three new sections had been organized and had begun work. The attendance and interest in the sections had never been greater. Although it cost much money to run the Academy, yet its income paid its current expenses, and had allowed money to be put away this year in the sinking fund, and over $5,000 to be added to the library fund. There had been established a course of public lectures. Fresh interest was shown in the museum and historical department of the library. In closing, Dr. Dana said they needed the sum of $200,000 with which to enlarge the Academy and furnish room for the growing library. They also needed $200,000 as an endowment fund with which to publish a monthly bulletin of the work done.

Address of the Incoming President.—Dr. JOHN A. WYETH gave this inaugural address and spoke on "The Value of Organization in Medicine." He said that intelligent cooperation between individuals for the accomplishment of a given end had marked every step in human progress. Beginning with the organization of families into tribes, and these into States and nations, the more enlightened people of the earlier days became masters of the world about them. Scarcely a page in history failed to convey the lesson of the value of organization, but it was left to modern times, to a higher civilization, and chiefly to the profession of medicine, to apply the lesson to the amelioration of suffering and the saving of life. Toward the latter part of the eighteenth century and in the earlier years of 1800 there were signs of dissatisfaction with existing conditions in the profession, but there was really no great awakening until our own times. At the annual meeting of the Medical Society of the State of New York, in 1844, attention was strongly directed to the subject of medical education and the necessity of a higher standard of qualification, both preliminary and medical; at the meeting of this society in February, 1845, Dr. N. S. Davis, a delegate from Broome County, introduced a resolution, recommending a National Convention, to convene in the City of New York in May, 1846, for the purpose of adopting some concerted action towards elevating the standard of medical education in the United States. In 1846 the proposed organization of a national body took definite shape, and in 1847 the American Medical Association was organized. Among the definite subjects then stated were the following: (1) The standard of preliminary or preparatory education should be greatly elevated, or rather a standard should be fixed, for there was none then, either in theory or in practice. (2) They should elevate the business of private teaching to that position which its intrinsic importance demanded. (3) A more uniform standard of qualification should be required of the candidates for medical honors. (4) They should devise some mode to stimulate the ambition and arouse the energies of the profession to a higher state of intellectual activity and scientific inquiry. While this proposed organization of a national association was exciting much interest, a number of distinguished physicians in New York City, on November 18, 1846, met and proposed the foundation of the New York Academy of Medicine, and this organization was completed on January 13, 1847. From these dates the influence of these two bodies made itself felt in the profession. As far as the history of the medical profession in the United States was concerned, in his opinion the most important event occurred in 1900, when the American Medical Association appointed a committee on reorganization, which committee submitted its report at the annual meeting of the Association at St. Paul, in 1901. Dr. Wyeth then reviewed some of the difficult problems connected with this great undertaking, especially the differences which had divided some of the State societies into factions, and especially that which had prevailed in the Empire State. The real value of organization in medicine was in the influence they could bring directly to bear upon the body politic, and through this medium secure the legislation which would solve these serious problems,

and they could only do this by intelligent cooperation and by the sacrifice of much of their material interests to the public good. Organized medicine should take more note of politics than it had hitherto affected.

Reminiscences of Surgical Practice in New York During the Period of the Early History of the Academy.—Dr. Stephen Smith said that they could get a good idea of surgery as a science and an art in New York City in the middle of the last century by a study of the qualifications of the representative surgeons of that period, by the character of the teaching in the medical colleges, by the methods of practice in the hospitals, and the surgical literature. The three groups of representative surgeons were according to their ages, those over 50, Valentine Mott, J. Kearney Rogers, and Willard Parker; those over 40, Alfred C. Post, John Watson, and Guerdon Buck; those over 30, James R. Wood, John M. Carnochan, and William H. Van Buren. The first group represented the teaching and practice of the school of Hunter.

Valentine Mott owed his success to his aptitude, training, and opportunity. He gave extraordinary attention to order, detail, and cleanliness. He prepared for operation even of an unimportant character by the most painstaking dissections and review of the simplest details. He invariably cleaned his instruments before, as well as after an operation. His operative wounds rarely suppurated, which was the result sought by the school of Hunter, but never completely secured by other operators as by Mott. We now discover that his habits of personal cleanliness and attention to minute detail secured, in a large measure, asepsis. His pioneer work began with the ligature of the innominata in 1818. This was not only his greatest achievement in operative surgery, but the most brilliant operation ever undertaken by any surgeon up to that date. It was by no means suddenly conceived and executed as an emergency operation, but was the ripe fruit of years of study and preparation. They who knew him honored him for the breadth of his studies, his love of scientific truth in every department of research, his humanity as shown in his lecture on the condition of the tenement population, and his efforts to secure our present Health Department, his patriotism so conspicuous during the Civil War, and his devotion to the highest interests of his profession. J. Kearney Rogers' reputation rested upon a single operation of ligation of the left subclavian artery within the scaleni muscles, in 1845. This operation was only second to that of ligation of the innominata in the difficulties attending the dissection necessary to expose the artery. Sir Astley Cooper had attempted the operation and failed. In operating, Rogers was very dextrous and expeditious, two qualities most prominent in the preanesthetic period. Willard Parker was professor of surgery in the College of Physicians and Surgeons. He was not a scholar nor an investigator, but an intensely practical surgeon. His teaching was also practical rather than theoretical and speculative.

The second group of surgeons was different from the first. They were all connected with the New York Hospital, but none of them took special interest in operative surgery. Post's clinica were of interest chiefly because of his accuracy of statement in explaining the nature of disease. Buck was a laborious and painstaking practitioner, whose clinics were entirely wanting in everything like glamour. His success depended chiefly upon the extreme care of his patients. He would often awaken the house surgeon at the hospital at a late hour at night by a visit to a patient in a critical condition. Watson was generally regarded as the most scholarly surgeon of the entire series, his reputation resting on an address on the history of medicine in the early times.

The third group of surgeons found their opportunities at Bellevue Hospital. Wood's great service to the profession was the conversion of Bellevue from an almshouse into a modern, well organized hospital, and then making it a clinical school. His clinics were made attractive by the variety of operations performed, the brilliant display of instruments, and the frequent dramatic instances which occurred. Carnochan received his education at Edinburgh and London, and was a brilliant scholar, thoroughly equipped by nature and training for a great career, both as a teacher of the science and a practitioner of the art of surgery. He was acceptable in the former, and eminently successful in the latter. Van Buren was regarded as giving promise of a career second only to that of the senior Mott. He descended from a long line of eminent physicians, and no surgeon in the entire list combined so many qualities making for success, whether as a teacher or as a practitioner. He was more thoroughly familiar with the advanced opinion of surgeons than any other clinical lecturer, and his classes were always large and attentive.

In the medical schools of New York were found as professors of surgery, Willard Parker in the College of Physicians and Surgeons, and Samuel D. Gross in the University Medical College. Parker's lectures were almost wholly devoted to practical subjects, the principles of surgery being very briefly discussed. Scrofula was much dwelt upon as a dangerous complication in surgical diseases, but syphilis received only a passing notice. Gross, unlike Parker, was a student and investigator, and discussed broadly the principles of surgery as illustrated by the pathology of diseases, and hence, he gave less time to the details of practice.

The most accurate knowledge of the status of surgery at any time or place was gained from the viewpoint of the wards of the hospitals. The New York and Bellevue Hospitals were, in 1850, rival centers of surgical instruction and practice. They were very unlike in organization and management. The New York Hospital had been established on the basis of the London hospitals, and everything about it had the air of age and respectability. The practice of surgery was along conservative lines established by Wright, Post, Mott, and Stephens. In the wards the greatest interest was manifested in fractures. Compound fractures of the leg were treated in boxes partially filled with bran, as an absorbent of the abundant flow of pus. Fractures of the thigh and its neck were treated with the long side splint, extension and counterextension being made from its extremities by straps and bandages which created such excoriations as greatly to impair its usefulness. Ligation of arteries, trephining for fractures of the skull, excision of bones were major operations. At Bellevue many of the vices of the almshouse still persisted, and the service was largely confined to chronic diseases. Abscesses, ulcers, caries, syphilis in every form and stage, and similar pus-generating affections filled the wards. There was pus everywhere. Healing of wounds by first intention was unthinkable. Amputation was the favorite operation, and the clinics were most brilliant and spectacular affairs.

Looking backward from the viewpoint of half a century the surgeons of 1850 appeared like men of heroic mould, and their achievements, under conditions almost absolutely prohibitive of success, even more marvelous than the remarkable deeds of to-day.

Reminiscences of Medical Practice in New York During the Period of the Early History of the Academy.—Dr. A. Jacobi read this paper (see page 129)

Fracture of the Clavicle.—It is frequently difficult especially in children, to secure adequate fixation of the fractured bone by any of the ordinary methods. Cordua says that in many instances good results may be obtained by putting the arm of the injured side behind the back in such a position that the finger tips touch the angle of the opposite scapula. It is not necessary, in most cases, to continue this form of dressing longer than the first few days, and it should not be kept up any longer than is required, as the patient is thereby prevented from sleeping either on his back or on the injured side.—*Zentralblatt für Chirurgie.*

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Held at Baltimore, Md., December 11, 12, and 13, 1906.

THE PRESIDENT, DR CHARLES H. NOBLE OF ATLANTA, GA., IN THE CHAIR.

(*Concluded from p. 122.*)

Puerperal Thrombophlebitis of the Pelvic Veins.—This was the title of the President's address, delivered by Dr. George H. Noble of Atlanta, Ga. Attention was directed to the surgical aspects of this question. Of the 32 cases of puerperal sepsis collected the infection was divided as follows, with reference to location: Metrophlebitis, 11; metrolymphangitis, 4; abscess in parametrium, 8; thrombophlebitis (suppurating) of broad ligament, 2; suppurative peritonitis, 7; and deep laceration of vagina, 7. Thus of the entire number there were thirteen cases of pelvic phlebitis, two of which were in the large veins of the pelvis. If thrombosis of the pelvic veins occurred in 6 or 7 per cent. of puerperal infection, the mortality being high, the author thought considerable saving of life might be brought about by early recognition of the disease and prompt interference. He thought the showing should be greater, for the number of cases coming under his observation did not correspond with the percentage given in the above list. Thrombosis might begin early, but usually the symptoms were not clearly defined until late in the puerperal state, making a distinction between it and other clinical manifestations of sepsis, excepting intramural abscess of the uterus. But exceptionally the symptoms might appear earlier. In one case the chill came on on the third day, and on the ninth the thrombus had advanced to such an extent that resection of the left side of the uterus and of the corresponding broad ligament was acquired. The disease was often complicated with other septic conditions, such as involvement of the tubes, ovaries, suppuration in the parenchyma of the uterus, parauterine tissues, or the clot itself might be permeated with pus, the latter escaping directly into the circulation. In differentiating between thrombosis and intramural abscess of the uterus, uncomplicated by peritonitis and adhesions, small, rounded, flat elevations on the surface of the uterus might be felt in patients with very thin or relaxed abdominal walls. Such cases presented the ordinary septic pulse and temperature curves, and did not have the distinct interval of nonsuppurating thrombus. When complicated by adhesions, or diseases of the appendages with tense abdominal walls, exclusion of intramural abscess, and detection of tortuous veins, were extremely difficult. Suppurating thrombosis very likely might be overlooked when complicated with peritonitis, pus tubes, etc., unless the symptoms of pyemia supervened, or the pulse showed a tendency to become climbing in character. These were suggestive of the true condition. Any puerperal case with pelvic lesions, variable temperature, and climbing pulse of three to four weeks' duration, without signs of improvement, justified an operation of some kind, especially if the uterus proved negative as the source of trouble. If a mistake was made in diagnosis, and the location of the infection was found in the Fallopian tubes or abscesses in other parts of the pelvis, no surgical error was committed, for they too were in need of serious attention. There were several plans of procedure. First, excision of the thrombosed veins; second, ligation of the thrombosed veins; third, hysterectomy. In addition to these, attention should be given to the complicating conditions. One author objected to excision on account of the liability of reinfecting the wound by soiling the parts with the clots. In two of the author's cases in which the veins were lacerated by digging the clots out of the broad ligament with the fingers, the temperature range for two or three days was quite irregular and reached high marks at short intervals (103°-105°), but some of this temperature might have been due to the extensive surface involved. Each of these had numerous abscesses in the uterus, ovaries, and pus collections between the coils of the intestines; besides, the omentum and intestines were softened and adherent from the umbilicus down. As the chill was not repeated in either case, it was likely that soiling the wound with clots had little to do with it. The number of cases in which excision had been resorted to was too small to draw accurate conclusions. Ligation of the veins was not satisfactory, especially if the clots became infected with pyogenic cocci. Hysterectomy was extremely dangerous in this condition. In the first place, it was often delayed too long to remove successfully all the infected centers. When thrombosed vessels were confined to the uterus, there were some chances of success, but propagation through the vessels into the broad ligament extended the infected field into the pelvic veins, and at times the uterus might not be at fault, for the thrombi might lie exclusively in vessels outside of that organ. Removal of the uterus under such circumstances was worse than useless, as it would leave the thrombosed vessels undisturbed. On the other hand, excision of the diseased veins without hysterectomy was promising except in extreme cases. In the summary of the small number of cases accessible, the results were as follows: Resection of vein, a mortality of 28 4-7 per cent.; ligation of veins, 44 4-9 per cent.; hysterectomy, 64 1-4 per cent. He ventured the assertion that until further experience shall have worked out the solution of this problem, the opinion must be accepted that early recognition of septic thrombosis of the pelvic veins, followed by prompt excision, was the best method of relief we could offer our patients in this disease.

Surgical Treatment of Tuberculosis of the Kidney.—Dr. HOWARD A. KELLY of Baltimore reported a surgically-treated series of sixty-two cases of kidney tuberculosis from the gynecological clinic at the Johns Hopkins Hospital and from his private sanatorium. This list embraced fifty-seven nephrectomies—including simple nephrectomy, and those combined with removal of the ureters, and in a few cases also parts of the bladder—four nephrotomies, and one partial nephrectomy. The extreme rarity of a spontaneous healing, even by a complete destruction of the kidney and occlusion of its ureter, was emphasized. The author in a large experience had never met with this condition, which agreed with the statements of most others who had extensively observed the disease. With the rare exception of a kidney so sequestrated, the disease in all cases sooner or later involved the bladder, and from that led to death, either by infecting the sound kidney, or by extensively metastasing to other parts of the body. Of the operative procedures considered, nephrectomy must be regarded as merely a palliative measure to be employed in pyonephrosis cases. When the second kidney was sound, it was preliminary to a subsequent nephrectomy; when the sound kidney was diseased, it relieved suffering, and to some extent prolonged life. In the four cases in which it was the sole operation, the second kidney was involved, and all of these patients died within a year. Of the seven cases in which it was performed as a preliminary operation, and nephrectomy done later, all had recovered and were cured. Partial nephrectomy was indicated in cases where both kidneys were involved by tuberculosis, and both were secreting about equal amounts of urine. In the one case, where the author employed it, the patient died eight months after operation. A study of the specimens obtained by nephrectomy showed that in five kidneys the disease was localized to one pole, and that a partial nephrectomy sometimes offered the hope of eradicating the disease. Tuberculosis involving one-half of a horseshoe-shaped kidney presented another condition where partial nephrectomy was positively indicated. Nephrectomy was the operation of choice, and it should be employed first under all circumstances if the second kidney was sound; second, even when the second kidney was diseased, if the kidney to be removed was not functioning or only slightly functioning, and the other but slightly involved. The presence of albumin

and casts in the urine from the kidney not tuberculous was not a contraindication to operations. They usually disappeared after the removal of the tuberculous kidney, as was shown in four of the five cases. In the fifth case they persisted, and demonstrated a genuine nephritis, but this patient was actively engaged in teaching school seven years after her operation. Infection of the second kidney by the ordinary pyogenic organisms was not a contraindication to a nephrectomy, as was shown by three cases of the series. One of these was living, thirteen years after operation, another seven years, and another four years. Involvement of the bladder, far from being a contraindication to operation, was a most urgent indication, as bladder tuberculosis was not healable in the presence of a tubercular kidney above, whereas it did heal under proper treatment after nephrectomy. Coexistent involvement of the genital organs was not a contraindication. The author's experience in this class of cases was confined to women; five such cases were treated; three were permanently cured; one had only been recently operated on, and one died from the operation. Tuberculous genitalia must be removed as well as the kidney. This same complication in men, as shown by Rovsing's report of ten cases cured, could not be held as a contraindication to the operation. The presence of tuberculosis in the lungs, glands, joints, bones, and elsewhere, provided it was not very active, was no contraindication to the operation. Out of eighteen such cases treated by nephrectomy, and subsequent general treatment, thirteen were permanently cured from periods of two to ten years, and two had only been recently done. As tuberculosis of the kidney once started destroyed the kidney, and as the cases became more unfavorable after bladder involvement, a nephrectomy should be done just as soon as the diagnosis was made. The importance of this early operation was shown by the results in the twenty-one cases treated comparatively early in the course of the disease, *i.e.* with no bladder involvement, or only slight involvement around the ureteral orifice of the affected side. There had not been a death in this group, and all had been cured. Contrasting with this thirty-six cases with extensive bladder involvement, there were four primary, and within four years five secondary deaths, making a total mortality rate of 25 per cent. By reason of the fact that some of the author's cases were private patients, it had been possible for him to follow them all after operations. These observations after operation did not consist only of the reports of the patients, but also of careful urinary examination. The statistics from the nephrectomies were: Fifty-seven cases, 4 primary deaths, or 7 per cent. mortality; a total of 7 deaths within six months, 12.2 per cent. mortality; and a total number of deaths of 9, 16 per cent. mortality. Excluding from the series nine cases with residual bladder trouble still present, all of which except one had been operated on within a year and a half, there remained forty-eight cases, with thirty-nine complete cures, and nine deaths, a cure rate of 76.93 per cent. It was only by a knowledge of the frequency of such permanent cures that a just estimation of the operation could be arrived at, since the vesical irritability, owing to involvement of the bladder and other disagreeable symptoms, might be as great after the operation as before, unless a cure was obtained. As to the method of operating, when it was possible to do so without adding to the dangers of the operation, the ureter should be removed with the kidney, as by this means it had been found that the incision healed more promptly and the bladder tuberculosis, if present, was more amenable to treatment. In view of the remarkable results of surgical treatment, and the hopelessness of all medicinal measures, tuberculosis of the kidney more positively indicated operation than did acute appendicitis, and the realization of this fact by the profession, with the consequent possibility of early operations, would lead to better and better results.

Tuberculosis of the Kidney.—Dr. CHARLES P. NOBLE of Philadelphia reported ten nephrectomies for tuberculosis, nine of the patients being women and one a man. In each of the ten cases the tuberculosis of the kidney was primary, but in the man the lungs were also involved. This case ended fatally six weeks after nephrectomy in the natural course of the disease. The nine women not only recovered from the operation, but were restored to health. Three of them suffered from permanent loss of capacity in the bladder, due to the healing of extensive ulcers. In most of the cases the complicating cystitis and ulceration underwent a spontaneous cure after the nephrectomy. The following points were emphasized: No evidence of ascending tuberculous infection had come under the writer's notice. In each of the cases the tuberculosis of the kidney was primary, and the bladder, when involved, was infected by pus discharged through the ureter. The results of early nephrectomy for tuberculosis of the kidney were very satisfactory. The profession should be educated to appreciate these facts and to diagnose tuberculosis of the kidney at an early stage, before extensive involvement of the bladder or general dissemination of the disease had occurred.

A Study of Vaginal Cesarean Section With Especial Reference to Subsequent Pregnancy and Labor.—Dr. JOHN F. MORAN of Washington, D. C., after referring to the literature of this subject, stated that at the last meeting of the association he reported two cases of vaginal cesarean section, performed for eclampsia, both successful, and he now reported a subsequent pregnancy and labor occurring in one of them. He said it could not be denied that complications and sequelæ attended vaginal cesarean section, but that was also true of all the methods of accouchement forcé. Each had its value, and should be employed only after a thorough examination had determined its suitability. An exact knowledge of the condition of the cervix before acting was the essential prerequisite to success. The bougie, tampon, and metreurysis might be used when the cervix was undilated, provided time was not a necessary factor. Manual and instrumental methods should be applied only when the internal os was effaced or effacing. If applied while the cervix was intact they acted by divulsion, rather than by dilatation, with its consequent dangers of hemorrhage, laceration, and infection. It was in the latter class that vaginal cesarean section was particularly indicated, and, further, had the advantage that in case of urgency the uterus could be emptied at any period during pregnancy or labor in a given time. It was therefore a meritorious operation, and a valuable addition to our obstetrical resources.

Dystocia Following Fixation and and Suspension of the Retroflexed Uterus.—Dr. J. WHITRIDGE WILLIAMS of Baltimore, in a paper on this subject, reported four cases in his own experience, and collected thirty-four from the literature, in which cesarean section had to be done following some method of fixation for suspension of the uterus.

Dr. HENRY O. MARCY of Boston gave a brief sketch of one of Baltimore's greatest men—Dr. Horatio Gates Jameson, whose greatest contribution to surgery, he said, was the occlusion of arteries by buried animal ligature.

Hodgkin's Disease; A Type of Sarcoma.—Dr. WM. B. COLEY of New York referred to the fact that at present both pathologists and clinicians were widely at variance as to what constituted Hodgkin's disease. The theory that Hodgkin's disease was a form of tuberculosis, strongly advocated a few years ago by Sternberg and others, had been practically disproved by the work of Dorothy Reed. The theory which at the present time received the greatest support both by pathologists and clinicians was that Hodgkin's disease was a separate entity in the nature of an infectious process. This was the position held by Reed and the majority of recent writers. The only other theory that had received much consideration was that Hodgkin's disease was in the nature of a malignant tumor, or a variety of sarcoma. While this was the view originally held

by Virchow, who called it lymphosarcoma, and Billroth, malignant lymphoma, the same had been practically abandoned by later writers, and only recently had again begun to receive serious consideration. In favor of the infectious theory of the origin of the disease, Reed cited the facts: (1) That fever was frequently associated with Hodgkin's disease; (2) that the frequency with which the disease started in the cervical region suggested the possibility of infection gaining entrance through the mucous membrane of the mouth; (3) the absence of capsular infiltration and implication of adjacent structures; (4) the peculiar giant cells found in the tumors. Finally, and most important of all, the fact that metastases occurred only in preexisting lymphoid tissue. Dr. Coley, who strongly believed in the malignant nature of Hodgkin's disease, in answer to these objections, stated that his observation had been that fever was not an infrequent occurrence in malignant disease; especially in sarcoma if generalization had taken place. As to the neck being the frequent starting-point of Hodgkin's disease suggesting the possibility of infection, he stated that the same reasoning would apply to cases of sarcoma of the neck, which bore such a large proportion to the total number of cases. Coley had observed seventy cases of sarcoma of the neck in a total of 615 cases. As to the absence of capsular infiltration, this was by no means a universal characteristic of the tumors of Hodgkin's disease, as shown by the recent and very valuable contribution of Gibbon of San Francisco, whose report covered nine cases. His cases showed marked evidence of capsular infiltration and also answered a more important objection: that metastasis occurred only in preexisting lymphoid tissue. In some of Gibbon's cases metastases occurred where there was no possibility of the presence of lymphoid tissue and not only infiltrated the capsule but the surrounding structures, even the periosteum and bone. As another reason for regarding the process of the nature of a sarcoma, Coley cited several cases in which the clinical diagnosis was sarcoma, while the pathological report read Hodgkin's disease. Cases of Hodgkin's disease pursued a clinical course identical with that of sarcoma, infiltrating the surrounding tissue and causing death in precisely the same way. The recent work of Banti went far toward proving that not only Hodgkin's disease but also leukemia, both lymphatic and myelogenous, were really forms of sarcomatosis. Coley's conclusions, based upon a study of upward of six hundred cases of sarcoma, of which seventy originated in the lymph glands of the neck, are that Hodgkin's disease was merely a special variety of sarcoma, representing a fairly definite clinical and pathological type, but in many cases shading off into other types that corresponded most closely with that of an ordinary round-celled sarcoma. The evidence brought forward by Reed and others in favor of the infectious origin of Hodgkin's disease need not be disproved. Most of it held true in the case of sarcoma, and all of it but added to the slowly-accumulating mass of evidence in favor of the infectious or microparasitic nature of sarcoma, a conviction which the writer had long held.

The Surgical Aspects of Gastric Carcinoma.—Dr. JOHN B. DEAVER of Philadelphia said that from twenty-five to forty per cent. of all cancers of the body were primary in the stomach. Bryant, quoted by Van Valzah and Nisbet, showed that in Baltimore there were 200 deaths annually from cancer; Boston, 300; Philadelphia, nearly 500; New York City, nearly 900. Of these, perhaps almost one-half were directly due to cancer of the stomach. Chronic gastric dyspepsia was the chief predisposing cause of cancer. Cancer of the stomach presented clinically two forms. In one, a patient past middle life, without having suffered previously from indigestion, suddenly lost appetite, especially for meats, grew progressively weaker, more emaciated, developed epigastric pain, possibly a palpable mass; became subject to vomiting spells; vomiting a mass of foul-smelling and fermented coffee-ground material, and quickly developed cancerous cachexia. This was the classical picture of gastric carcinoma. The second and much larger class was composed of patients who had been lifelong sufferers from dyspepsia. Usually there were no definite symptoms, the patient having been treated for chronic gastritis. Patients who presented symptoms of gastric indigestion, which would not yield in a few weeks to medical treatment, should be subjected to operation. Timely resort to gastroenterostomy would save many patients from the development of gastric carcinoma. Until operation was more frequently undertaken in the very early stages of gastric carcinoma, gastroenterostomy must still be the operation most often adopted. It was rare in the author's experience for a patient in whom cancer had been certainly diagnosed before operation, to present conditions admitting of gastrectomy. A palpable tumor felt before operation would naturally suggest cancer, yet these tumors had been known to disappear after a gastroenterostomy; therefore, all palpable tumors were not carcinomatous in nature; and it was in this class of patients that exploratory laparotomy found its most legitimate field. Total gastrectomy must remain an operation of the utmost rarity. Personally, he did not approve of it. Subtotal gastrectomy was, in his opinion, as extensive an operation as it was wise to adopt. To sum up: By timely operation for the various causes of persistent indigestion, many a patient would be saved from developing gastric carcinoma. Early diagnosis of gastric carcinoma being so extremely difficult, and radical removal being only highly promising when an early diagnosis had been made, partial gastrectomy should be an operation limited to cases of malignant disease operated on for symptoms of pyloric obstruction or other gastric affections supposedly benign, in which the existence of cancer, though perhaps suspected, could not be certainly diagnosed before operation. Partial gastrectomy was the preferable treatment for these cases. In cases moderately far advanced gastroenterostomy should be preferred. Where the indication was to prevent starvation, jejunostomy was to be performed.

Vaginal Section as an Operation of Choice.—Dr. HENRY T. BYFORD of Chicago called attention to the fact that whereas vaginal section became quite popular among gynecologists a few years ago on account of its low mortality, the improved technique of abdominal section soon brought the latter into favor again and relegated the former to a comparatively limited field of usefulness. The cases adapted to vaginal section were mostly those in which the parts affected were more accessible from below, namely, those connected with prolapse and retroversion of the uterus, with prolapse of the ovaries, or with adhesions low down in the pelvic cavity, and cases of hysterectomy or myomectomy for small fibroids as well as hysterectomy for other small neoplasms and malignant diseases of the uterus. When the uterus was not to be removed the author preferred the incision posterior to the cervix for those cases in which the uterus was retroverted or readily retrovertible, and the cervix could be drawn well down near the vulva. The anterior incision had the advantage of enabling the operator to deliver the fundus into the vaginal entrance and also to draw the ovaries and round ligaments forward within easy reach. Among the disadvantages of the latter were a complicated wound which could not always be as satisfactorily sutured as the posterior incision, and the presence of the fundus in the vagina to interfere with manipulations, etc. When there were special reasons for avoiding abdominal section, the field of vaginal section might be extended by removing the uterus or if it be desirable to preserve the uterus by lateral colpotomy in connection with the anterior or posterior incision, or both. By ligating and severing the uterine artery, or by skirting or shaving the edge of the cervix with scissors or a sponge, and separating the broad and sacrouterine ligaments from the cervix, space could be obtained for the introduction of the whole hand into the

peritoneal cavity and for the employment of intraperitoneal illumination. The author had even extended the incision completely around the cervix, as for vaginal hysterectomy, separating the bases of both broad ligaments as well as of the sacrouterine ligaments and bladder, and afterward suturing the parts back to their original relationship without any bad results. Through the opening thus made the torn or perforated rectum could be successfully sutured. The author believed that while the utility of vaginal section would diminish with the perfection of the technique of abdominal section for pelvic conditions, there would always be a place for it, and the time had not yet come when a special training in gynecological surgery could be considered as superfluous.

Dr. JOHN C. MUNRO of Boston reported an unsuccessful case of aneurysmorrhaphy for abdominal aneurysm.

Appendicitis in the Negro.—Dr. HUBERT A. ROYSTER of Raleigh, N. C., said that in order to obtain some information on this subject he wrote to several surgeons practising in southern cities having a large proportion of negro inhabitants; the replies were unanimous in regard to the rarity of the disease in this race. During the ten years in which the author had practised he had removed the diseased appendix from negro patients fifty-four times. In forty of the cases a pathological appendix was found while operating for other conditions, such as pus tubes, fibroids, etc. Besides a few of these which contained pus, over one-half of the others were filled with fecal matter, usually soft. Practically none of these cases presented a definite history of appendicitis, but only that of the original lesion. Fourteen cases of primary appendicitis in the negro were operated on, three in the first seven and a half years, and eleven in the past two and a half years. During the latter period, two and a half years, the total number of appendix operations on both whites and negroes was 123, giving a relative frequency of practically 9 per cent in the colored race.

Injuries and Diseases of the Hyoid Bone.—Dr. RANDOLPH WINSLOW of Baltimore reported six cases, one that had come under his own observation and in his practice, and five from the literature. He said that tumors of the hyoid bone were both malignant and innocent in about equal proportion, and both required thorough removal with as much of the contiguous tissue as might be necessary. An early operation was as much to be desired in neoplasms of this bone as in those occurring in other parts of the body. The author's case was one of sarcoma of the hyoid bone and larynx. He excised the tumor of the hyoid and base of the tongue, larynx, and part of the pharynx under local anesthesia. The patient recovered from the operation, but died two months later from metastasis. The patient was a man forty-five years of age, who entered the hospital on January 9, 1906, suffering from dyspnea due to a growth in the region of the hyoid bone on the left side, which obstructed the larynx. Thirteen years ago a lump was removed from the hyoid bone and the side of the larynx, and patient was discharged cured in six days. It began to recur in three years, and had been in existence for ten years and slowly increasing in size. The voice was altered; there was dyspnea with stridor, cough, dysphagia; pulse rapid and weak. There was a lump found in the region of the hyoid bone projecting more to the left than to the right side; it was globular, and as large as a goose egg, hard and movable, but not painful. A skiagraph failed to show the hyoid bone, but a shadow of a growth was seen between the jaw and the larynx. On January 11 tracheotomy under cocaine was done to relieve the urgent dyspnea. Patient improved somewhat and desired a removal of the growth. It was thought inadvisable to administer an anesthetic; hence morphine-scopolamine was injected hypodermically and the skin infiltrated with Schleich's solution. Operation on February 1, 1906. Hyoid bone, base of tongue, whole larynx, and part of pharynx were excised without difficulty whilst the patient was conscious. The trachea was attached to the skin at the lower part of the neck and a large tracheal tube introduced; pharynx and skin sutured. There was no shock. At first the patient was fed through a large, soft catheter passed from the mouth into the esophagus; but later the pharynx opened and a tube was passed from the neck into the esophagus. Patient did well and soon sat up and was able to walk about the ward; but recurrence occurred in the neck, and he gradually failed and died in eight weeks. An autopsy showed extensive metastasis in the lungs, bronchial glands, liver, and mesenteric glands, whilst the microscopic examination of the growth showed it to be a round-celled sarcoma.

The following papers were also read: "Conservative Method of Managing Undescended Testicle," by Dr. Joseph Price of Philadelphia; "Gallstones without Symptoms and Symptoms without Gallstones," by Dr. Maurice H. Richardson of Boston; "Two Simple Surgical Tricks Worth Knowing, with Instruments Used," by Dr. Ap Morgan Bance of Louisville, Ky.; "Report of a Case of Ruptured Ovarian Tumor with Complications," by Dr. Rufus B. Hall of Cincinnati; "Hodgkin's Disease—A Type of Sarcoma," by Dr. William B. Coley of New York City; "Cysts of the Omentum," by Dr. R. E. Fort, of Nashville; "Some Disjointed Observations upon Our Technique," by Dr. A. Morgan Cartledge, Louisville; "Influence of Respiration upon Development of the Chest Deformity in Scoliosis, with Its Relation to Application of Plaster Jacket," by Dr. Michael Hoke of Atlanta; "Some Suggestions in Regard to the Surgical Treatment of Empyema," by Dr. Samuel Lloyd of New York; "Normal Involution of the Appendix," by Dr. Robert T. Morris of New York; "Splenectomy, Indications, and Results: Report of Five Successful Cases," by Dr. W. P. Carr of Washington, D. C.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Howard A. Kelly of Baltimore, Md.; *Vice-Presidents*, Dr. R. E. Fort of Nashville, Tenn., and Dr. Hubert A. Royster of Raleigh, N. C.; *Secretary*, Dr. W. D. Haggard of Nashville, Tenn., reelected; *Treasurer*, Dr. Charles M. Rosser of Dallas, Tex., reelected.

New Orleans, La., was selected as the place for holding the next meeting; time, second Tuesday in November, 1907.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held December 17, 1906.

THE PRESIDENT, DR. THOMAS E. SATTERTHWAITE, IN THE CHAIR.

A Modification of the Obstetric Forceps, Eliminating the Danger of Excessive Compression.—Dr. A. ERNEST GALLANT read this paper, in which he described a safety lock on the obstetric forceps for the prevention of dangerous compression of the fetal head. After a brief historical review of the development of the obstetric forceps since 1733, Dr. Gallant demonstrated that the great danger of the so-called English lock lay in the fact that after the forceps were locked and traction applied the lateral pressure exerted by the uterine and vaginal walls on the convex surface of the blades forced them together to a degree which was highly dangerous to the fetal head, especially at those portions within the grasp of the tips of the blades, and frequently caused depression, fracture, and intracranial hemorrhage. The speaker presented two devices for avoiding this otherwise uncontrollable pressure: On the long-shanked forceps, by placing a "shoulder" at the junction of the shank with the blade of the left forceps, which prevented them from overlapping, and the blades from coming together any closer than it was originally designed that they should. For the same purpose, on the forceps made with the Chapman or loose lock, as was usually found on the Elliott forceps, he had combined

the English with the French locks, the thumb-screw of the latter being inserted, free, through a hole in the flange of the left blade, and screwed into the main portion of the shank. The right blade was provided with a notch on its inner side, partially countersunk, which embraced the thumb-screw, and when that was screwed home it fastened the blades together as in the Hodges forceps, and in that way maintained the fulcrum at the lock and prevented compression of the head. With this combination lock it was claimed that we could secure the head from injury and have all the advantages of the loose lock, the button lock, the set-screw lock, and at the same time bring into play Elliott's pivot at the extremity of the handles for holding the blades as widely apart as was deemed advisable.

Immediate Repair of the Soft Parts after Labor.—Dr. Henry C. Coe introduced his paper with the remark that the subject was so trite that it was impossible to do more than to emphasize anew old, familiar teaching. There could be little room for difference of opinion among obstetricians as to the advisability of repairing lesions of the soft parts after labor, but writers by no means agreed as to the best time at which the operation should be performed, nor did they all adopt the same technique. In discussing the subject, therefore, Dr. Coe said he would limit himself to his own experience. Immediate repair of laceration of the cervix was still a mooted question. In the presence of arterial hemorrhage there could be no doubt that it should be at once controlled by the passage of deep sutures. He did not believe it was necessary to repair every lacerated cervix at the time, but it was now his custom in every case of difficult delivery (high forceps or extraction) to be prepared to suture at once the extensive bilateral tear which was to be expected. With the present aseptic technique primary union was to be looked for, nor was drainage from the uterus interfered with if the operation was properly performed. It was exceedingly simple. The speaker said he preferred to operate as soon as the placenta was delivered, and not to wait until several hours, or even days afterwards, as some writers advised. Of course, there were cases in which the conditions would render it inadvisable to add even a few minutes to the anesthesia. Lack of assistance, bad light, and other complications incident to private practice might also prevent the accoucheur from repairing a torn cervix, excepting as a life-saving measure. But in the class of cases in which extensive tears were apt to occur no one should attempt a difficult obstetric operation without the assistance of a colleague. With regard to lacerations of the vagina, the speaker said he wished to emphasize the fact that their extent was often not fully realized until the parts were thoroughly exposed with a speculum and retractors. This applied especially to occipitoposterior cases in which the head was rotated with the forceps. Not only were deep and ugly rents produced by the most skillful hands, but they were too often only partly sutured, with the result that healing by granulation took place, and the production of extensive cicatrices. It was important not only to expose the entire length of the tear, but to keep the field of operation clear by placing a tampon against the cervix. One must not neglect to examine the anterior, as well as the posterior wall, for many lesions of the former were overlooked. Dr. Coe said he had nothing to add to his paper on "Immediate Repair of Injuries of the Pelvic Floor," printed in the *Transactions of the American Gynecological Society*, Vol. 29, page 219, and would only reiterate his opinion that it paid to do the work thoroughly, having ever in mind that the object of the operator was not merely to suture raw surfaces, but to go deeper and to pick up the torn fascia and muscles outside of the vaginal tube. It was now a truism that the submucous lacerations of both the anterior and posterior vaginal walls were of far more importance than the visible superficial lacerations. He believed that the time had come when, even in the absence of the latter, the careful accoucheur would seek to prevent subsequent cystocele and rectocele, and prolapsus by performing at once the operations usually done months later to correct these conditions, provided always that the patient's condition was such as permitted one to spend an additional quarter of an hour in the work after delivery was completed. He had, of course, had good results in intermediate operations, but he preferred the immediate.

Dr. Charles Jewett of Brooklyn said he respected the rule that the obstetrician should, if possible, dismiss his patient in as good condition as he found her, but his experience with cervical lacerations led him to refrain from immediate repair, owing especially to the risk of infection. Directly after labor, in addition to the fact that the wounds were all fresh, the general resistance was lowered, the local resistance in the bruised and greatly softened cervical tissue was at a minimum, the operative field was in close proximity with the wounds of the uterine cavity, and the resorptive activity was at a maximum. For these reasons he dreaded the possible consequences of much intervention in the upper part of the birth canal immediately after labor. Ample experience had shown that the best puerperal results were attained only when the parturient tract had not been invaded at all during the birth, or at its close. In case of arterial hemorrhage from the torn cervix, usually immediate suture was of course imperative. In other parts repair was better deferred, at least until the tissues had in great part recovered their normal resistance, and the wounds of the uterine cavity were healed, or healing. In one case in which he had sutured the cervix the day following labor, and with the usual aseptic care, the woman developed a mild septic phlebitis. One of his colleagues had a similar experience. He preferred to wait not less than two or three weeks. Dr. Jewett said he agreed with Dr. Coe as to the importance of carefully searching for the location and extent of lacerations at the vaginal orifice at the close of labor, both anterior and posterior injuries, and of their immediate repair. This part of the tract could immediately be restored without risk of infection. The consequences of neglect were worse than in ordinary injuries of the cervix, many of which did not require repair at all. With reference to the time for operation on pelvic floor lacerations, the speaker said that some years ago, for teaching purposes, he adopted the plan of operating in most of his hospital cases several hours or days after delivery, and he had found that even after as many as seven days union occurred, and the results were entirely satisfactory. When necessary, the wounds were revivified by rubbing them with a gauze sponge. While he would not recommend this plan for general use, in simple cases he thought it had many advantages in dealing with extensive tears. It was often difficult to restore the parts properly at the close of labor, with perhaps a poor light and scant help, when the structures were badly distorted and the work obscured by the bloody flow from the uterus. A few hours or days later the operation was usually found to be a very simple matter. The condition of the patient sometimes contraindicated immediate repair. She might be too much exhausted. If the wounds became infected they would not unite, and the danger was increased by suturing. With reference to methods of repair, it was very essential in complete lacerations that the internal, as well as the external sphincter be restored. The normal control of the bowel depended in no small measure on the integrity of the internal sphincter. Instead of suturing the rent in the rectal mucosa, he liberated the lower portion of the rectal mucous membrane anteriorly, drew it down, and stitched it at the anal orifice. This shut off the wound from the rectum, and insured almost certain union.

Dr. Francis Foerster said the immediate repair of the soft parts after labor depended primarily upon the surroundings and environment of the patient, as well as her

condition. The proper method of procedure in the hospital could not always be carried out in private practice, especially in tenement houses. Hemorrhage, of course, demanded immediate attention. The speaker referred to the fact that after tears of the cervix of even considerable extent the organ apparently resumed its normal appearance when the congestion had disappeared, and for that reason he did not always consider it essential to repair these ruptures. In dealing with lacerations of the pelvic floor, they should, under favorable conditions, be repaired immediately. If that was impracticable, it was better, he thought, to wait two, three, or even four months before undertaking the operation. By that time the parts would be restored to their normal condition, having undergone similar changes as the uterine muscles, and better results could be obtained.

Dr. FRANK R. OASTLER said that personal observation of several thousand cervices in women who had had children demonstrated, (1) that a very large majority of cervical tears healed, leaving the laceration present, but giving no symptoms; (2) that of the others there were some where bilateral tears had extended to the vaginal vault and had healed, causing eversion of the cervical mucous membrane, and consequent disagreeable discharge and irritation; some where there was considerable scar tissue in the angle of the healed tears, accompanied by cervical metritis, leaving a large, congested cervix; and still others where the tear had extended deep into the broad ligament on one or the other side, causing considerable scarring. Extensive bilateral tears should be repaired immediately after labor, for by approximating the torn surfaces with one or two sutures the resulting eversion of mucous membrane was avoided. Where lacerations, however, extended into the broad ligaments it was better to pack and drain, for sutures were very apt to catch the uterine artery or ureter. There was no difficulty in obtaining free drainage following suture. Dr. Oastler said he believed that the ordinary bilateral and central tears involving the perineal body and extending into the lateral sulci for a short distance were of minor importance in causing perineal relaxation. The relaxation was found not at the vaginal outlet as a rule, but in the upper two-thirds of the vagina. He was inclined to attribute the latter to a weakness of the levator ani muscle resulting from minute subcutaneous muscle fiber tears in the upper two-thirds, or by partial paralysis of the muscle itself. This condition was caused by the constant pounding of the child's head upon the perineal floor, and stretching of a poorly developed muscle in a poorly developed patient. This stretching, or paralysis of the levator ani, could be avoided to a considerable extent by hastening the second stage of labor, even at the expense of a tear of the perineal body or its extension into the lateral sulci. The latter condition could be repaired immediately and successfully, but the former was often repaired with extreme difficulty. All vaginal tears should be repaired immediately after labor, unless the condition of the patient contraindicated it. They healed rapidly and well.

Modern Obstetric Technique.—Dr. GEORGE L. BROADHEAD, in this paper, limited himself to a few of the more important points in obstetric technique. Normal labor, naturally, received first consideration, and this subject, for convenience, he divided into three subdivisions: first, the preparation of the patient; second, the preparation of the accoucheur, and, third, the preparation of the lying-in chamber. In speaking of episeotomy, Dr. Brodhead said that in properly selected cases, and correctly performed, the operation deserved a distinct place in obstetric technique. Where there was need of haste, or when the head was large and the perineum began to tear when there was but little distention of the vulva, the operation was so easy and the results so good that he felt it ought to be performed more frequently. After discussing version, the various kinds of forceps operations, and the dangers incident thereto, Dr. Brodhead said that craniotomy had been regarded too long as a procedure so difficult and dangerous that it was considered only after all other measures of extraction had failed. As a matter of fact, the operation was frequently much easier than the high forceps operation, and, again, it was much safer for the patient than podalic version. In any labor where the child was dead craniotomy was to be preferred to a difficult forceps or breech extraction. For the induction of labor, of the three well-known methods, the gauze tampon, the bougie, and the hydrostatic dilators, the speaker said his preference was for the latter. The bags of Champetier de Ribes, in their present modified form, had given so much satisfaction that he used them almost exclusively. Under the heading *accouchement forcé* Dr. Brodhead discussed the various methods for the rapid dilatation of the cervix, namely, manual or digital dilatation, the use of a steel dilator such as the Bossi, and third, the use of rubber dilating bags. When there was no need of great haste, the Champetier de Ribes bags had been very useful, but for rapid dilatation the digital method was preferable. In speaking of cesarean section, Dr. Brodhead said the operation had grown steadily in popularity, and the results, for both mother and child, were sufficient to justify it. Symphyseotomy was now performed very seldom. Hebotomy or pubiotomy had been done about 300 times since 1894, when Gigli first proposed the operation as a substitute for symphyseotomy. Jewett claimed that it offered no advantages over the latter operation, and that it was open to all the objections which obtained in the usual median section. Personally, the speaker said, he believed that the field for the operation was very small, and that more satisfactory results were to be obtained by the induction of premature labor; or, if the patient had gone to full term, by the operation of cesarean section.

The Urine in Pregnancy.—Dr. FREDERIC E. SONDERN read a paper on this subject, in which he stated that recent advances in the chemical investigation of urine in pregnancy had resulted in much of value to the obstetrician as an aid to his work, and in the correction, or, more properly speaking, modification of previously held views. When dealing with laboratory aids in diagnosis or prognosis, to prevent being misunderstood, it seemed necessary to frequently repeat that they were aids only, and it was well to add with all possible emphasis that all laboratory procedures, no matter how important, never took the place of clinical observation. It was the clinician who was the most acute bedside observer that received the most help from laboratory aids, for he was generally also well informed as to the value and significance of the changes from the normal noted in laboratory investigations. While the periodic examination of the urine in pregnancy, for gravity, albumin, sugar, and casts no longer met with the exacting demands of present day diagnostic methods, on the other hand no specified change from the normal in any respect could be accepted as a prime indication for drastic therapeutic measures or operative procedure, though it was oftentimes a material help in concluding the existing necessity for such. The demonstration in general that intestinal intoxication, intestinal toxemia, or faulty intestinal metabolism, whichever term or view one might prefer to accept, was the cause of a distinct train of symptoms, and often explained other obscure manifestations, was now a recognized fact. When it was recalled with what facility disturbances of the gastrointestinal tract were occasioned in pregnancy, and mindful of the experience that intestinal autointoxication frequently seemed to be the forerunner of the toxemia of pregnancy, if not more closely allied in the etiology, the necessity for early diagnosis of this condition was evident. The clinical manifestations which directed attention to this intestinal autointoxication were not within the province of this paper, but the laboratory aid in its diagnosis was imporant, and it was the recognition of a relative excess of ethereal sulphates in the urine. As

indoxyl sulphate and skatoxyl sulphate were the varieties most frequently present in excess, a test for this excess should form part of every urine examination in pregnancy. As in general medicine, so in obstetrics, the occurrence of albumin in the urine, alone or associated with casts, was no longer the bugbear it formerly was, as we knew that it did not necessarily indicate an inflammatory lesion of the kidney. While the occurrence of a so-called physiological albuminuria was open to question, on the other hand, with comparatively slight disturbances in circulation, in innervation, or in the quality of the blood offered it for the exercise of its function, the kidney passed smaller or larger amounts of albumin, with or without casts, indicating disturbed function not necessarily due to an inflammation of its parenchyma. It was essential to keep these general considerations in mind when attempting to interpret a urinary picture. The frequency with which albumin was now found in the urine as compared with former times was due to more diligent search, rather than to its more common occurrence. Recent investigations had shown that approximately 50 per cent. of pregnant women showed albumin in the urine at some time during pregnancy. These high figures were easily understood when considering the many causes occurring in pregnancy, such as circulatory disturbances, faulty innervation, irritating excretory products, and increased functional activity, in addition to the presence of actual renal lesions. The numerous possible causes rendered the differential diagnosis by no means an easy matter, and the apparently physiological retention of nitrogen toward the end of pregnancy added another difficulty. Dr. Sondern said that continued experience in the analytical work in connection with these cases would seem to indicate that the practical conclusions were that the routine urine examination of pregnant women should include a search for evidences of faulty intestinal metabolism, so that this apparently predisposing factor might have early attention. On occurrence of any of the clinical signs of toxemia of pregnancy, the degree of acidosis should be determined, and should this increase, then a repeated nitrogen partition would lend aid in determining the point beyond which it was not safe to allow the patient to go.

Dr. Samuel M. Brickner said he agreed essentially with Dr. Sondern, and referred to the recent advances that had been made in our knowledge of the urine of pregnancy. As late as 1850, Schroeder, in referring to this subject, simply said that most pregnant women had a little albumin in the urine, and that the urine was apt to be a little more watery than usual. Now, in addition to the search for albumin and casts, it was essential to obtain an accurate determination of the nitrogen partition, and the actual chemical examination of the urine during pregnancy had become such a complex matter that it was scarcely within the field of the general practitioner or of the obstetrician. In connection with this subject, Dr. Brickner said, there were two or three points that he wished to emphasize. One was that there could be no decided pathological change in the urine without some corresponding clinical manifestation. Whether the reverse of this held true he was not prepared to say, but where the urine showed an acidosis, or where the relation between the total amount of nitrogen output and ammonia was at fault, we could expect to find corresponding clinical manifestations. They would be revealed by close questioning, although the patient may not have complained of them. There would perhaps be headache, mostly frontal, nausea, or vomiting, or both; or we might find scotomata or some abdominal pain in the epigastric or hepatic region. These he regarded as the cardinal symptoms in cases of this kind. Some of the most serious cases he had seen were in elderly primiparæ, and they were more apt to be met with in women above the age of 30 or 32. The speaker said it had occurred to him that the various types of the so-called toxemia of pregnancy were apt to merge into each other.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 19, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	450	181
Diphtheria	313	37
Measles	186	6
Scarlet Fever	239	9
Smallpox	—	—
Varicella	125	—
Typhoid Fever	34	12
Whooping Cough	68	9
Cerebrospinal Meningitis	16	9
Malarial Fever	..	..
Totals	1431	263

Traumatic Decapsulation of the Kidney.—M. K. Helly reports this case. The patient, a young man twenty-one years old, fell from the first story of a house and was carried to the hospital with symptoms of abundant intraperitoneal hemorrhage. Laparotomy revealed the existence of an extensive rupture of the liver. The patient succumbed soon afterwards. At autopsy there was also discovered a total decapsulation of the right kidney without any other lesion of this organ. This decapsulation had probably been produced by the strong compression made by the floating ribs at the time of the fall. The kidney had been expelled from its torn capsule as neatly as the stone from a cherry.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 18, 1907:

SMALLPOX—UNITED STATES

			CASES.	DEATHS
Arkansas, Fort Smith	Dec	1–15	2	..
Georgia, Augusta	Jan.	1–8	11	..
Illinois, Galesburg	Jan	5–12	13	..
Sandwich	Dec.	1	1	..
Viola	Oct.	1–Jan 8	5	..
Indiana, Indianapolis	Dec.	30–Jan 6.	2	..
South Bend	Jan	5–12	3	..
Louisiana, New Orleans	Jan	6–12	6	..
Michigan, Detroit	Jan.	5–12	1	..
Missouri, St. Joseph	Dec.	29–Jan 5	7	1
New York, New York	Jan.	5–12	3	.
Wisconsin, La Crosse	Jan.	5–12	1	

SMALLPOX—FOREIGN

Africa, Cape Town	Dec.	1–8	2	..
Brazil, Pernambuco	Nov	15–30		26
Canada, Nova Scotia:				
Colchester County	Jan	7		Present
Cumberland County	Jan.	7		Present
China, Chefoo	Nov.	13		1 (From S. S. Raleigh
Shanghai	Nov.	24–Dec. 2	1	..
Cuba, Habana	Jan	5	From Kronprinzessin Cecilia.	
Cuba, Habana	Jan.	7	1 Fr. S. S. Pu'to Rico	
France, Paris	Dec	15–29	9	1
India, Bombay	Dec	11–18	..	1
Calcutta	Dec.	1–8	..	4
Madras	Dec.	8–14	..	1
Italy, General	Dec.	13–20	3	..
Netherlands, The Rotterdam	Dec.	30–Jan 5	1	1 Imported
Russia, Moscow	Dec.	8–15	1	..
Odessa	Dec	15–20	11	3
St. Petersburg	Dec.	1–15	7	4
" "	Dec.	16–22	5	1
Spain, San Feliu de Quixols	Dec.	22–20	..	1
Syria, Beirut	Dec	15–20	..	Present

YELLOW FEVER

Salvador Republic	Jan	14	Epidemic

CHOLERA—INSULAR

Philippine Islands, Manila	Nov.	18–24	.	1
Provinces	Nov.	18–24	70	45

CHOLERA—FOREIGN

India, Bombay	Dec.	11–18	..	4
Calcutta	Dec	1–8	.	01
Rangoon	Dec.	1–8	..	20

PLAGUE

Brazil, Bahia	Nov	25–Dec. 8	6	5
China, Hongkong	Nov	25–Dec 1	1	.
Egypt, Alexandria	Dec.	22–26	1	2
Keneh	Dec	22–27	6	8
Menoufith	Dec.	21–27	1	2
India, General	Nov	25–Dec 8	16041	12090
Bombay	Dec.	11–18	..	13
Calcutta	Dec	1–8	..	19
Rangoon	Dec.	1–8	..	13
Peru, Chicama Valley	Dec.	11	14	..

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Original Articles.

THE INTERLUDE OF CANCER.

BY JOHN BEARD, D.Sc.,

EDINBURGH.

In preda al duol non mi lasciar!
Intermezzo in *Cavalleria Rusticana*.—MAZZONI.

IT is a wise child of investigation which knows its own scientific godparents. Mine were two men of supreme brilliance and great eminence, Johannes Müller and Carl Ernst von Baer. What I owe to their examples and to their work can never be expressed adequately, and as little can it ever be estimated to what extent mankind is indebted to them. These deeds of theirs, which as I write pass through my mind, were all determined attacks, prolonged and well-sustained assaults upon the problems of the nature and mode of animal development.

Neither Müller nor Baer, it is true, laid down any law of the life-cycle from generation to generation, because each of them in his final research stopped just short of the point, at which the crux of the problem would have asserted itself. Neither investigator spared himself in the task. Indeed, von Baer writes: "Thus, it came about in a certain year, that I shut myself up in my shell, when the snow still lay on the ground, and that later on, going for the first time to a wall a few hundred steps away, I beheld the barley in the ear and almost ready for harvest. At this sight I threw myself on the ground, and made myself reproaches for my foolishness. 'The developmental laws of Nature will be discovered,' said I to myself in Epicurean or Mephistophelean fashion, 'and it is a matter of indifference whether it be by you or by others, whether this year or some time in the future.'"

Müller died in 1858, before my birth, and, although von Baer lived into the seventies, from the time of the Königsberg researches (1819-1834) he never again worked seriously at the problems of animal development. In a sense it looks like a mere accident that the thread of research, dropped by Carl Ernst von Baer so long ago, should have been taken up enthusiastically, under far more auspicious circumstances, by a young man of less than thirty years of age in 1888, who was working in the Anatomical Institute of the University of Freiburg, Berlin. Prior to then he had been trained severely by A. M. Marshall, Huxley, and Semper. At that time, and for many years afterwards, he little dreamt that, regarding the work from its human aspects as opposed to the far wider, higher scientific ones, he was really working out the problems of cancer. Indeed, without then knowing it, these had actually been solved in researches published by him in 1896 and 1897.*

The embryologist never tells the story of his work in the order of his researches. He cannot, for in these he pushes his way little by little, step by step, from the known to the unknown, and at any given time he may be working in two directions, upwards from the starting point of the fertilized egg, and downwards from the finished embryo. Thus, it happened, that what, logically regarded, should have been the first investigation in 1888, the history of the germ-cells, was actually the last, as it was also the coping stone, which crowned the work, and made it lasting.

The actual cancer-researches have been a mere interlude in the whole—an intermezzo. "The prey of pain let me not be!" The solution of the problems of cancer was but a corollary of what had gone before, and it followed naturally and irresistibly out of the germ-cell results, the course of the life-cycle, and the conclusions as to germinal continuity and heredity. Since the embryological theories of the textbooks are, to apply the words of Pasteur, a mass of baseless hypotheses, it follows

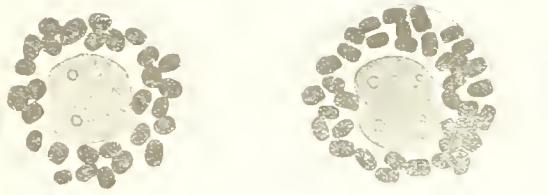

FIG. 1. FIG. 2.

Illustrating the Germ-cells of Fishes and Their Migrations into the Embryonic Body.

FIG. 1.—Primary germ-cell of a small dog-fish, *Pristiurus melanostomus*. The cytoplasm is glassy in character, and contains a large number of (blackened) yolk-plates. The nucleus exhibits chromatin, *i.e.* autonomy of paternal and maternal portions.

FIG. 2.—A similar primary germ-cell from the skate, *Raja batis*.

that the solution of the problems of cancer can be grasped properly only by a comprehension of the course of the cycle of life from generation to generation, as my researches of the past eighteen years have revealed it.

The starting point of a new cycle is the fertilization of an egg and the outline history of the cycle is not complete until we have shown how new eggs, new reproductive elements, arise, and until we have reached the point at which these are ready for fertilization, to start the cycle anew. An egg is fertilized and development begins by its cleavage, an ever-increasing number of cells is formed in this way, and anon we reach a point at which the orthodox embryologist says that the egg-cleavage is finished. What has then come into being? The usual reply is "a new organism, an embryo." No such thing! At the close of cleavage in none of the higher animals is any trace of an embryo present. Something is there, but not an embryo. I will ask the reader to regard this developing egg from the start of cleavage as a living organism, but not an embryo.

The criterion of anything in embryology is the fate or destination of the cells. In a worm's egg, which has cleaved five times, giving 32 cells, or in a skate's egg, which has undergone ten divisions, resulting in 1,024 cells, there is not a single cell

*J. Beard, On Certain Problems of Vertebrate Embryology (The Critical Period), and the Span of Gestation and the Cause of Birth, 1806 and 1897, Jena, Gustav Fischer.

present which is embryonic in destiny. Nearly all the cells are predestined to form portions of an asexual foundation or larva, termed by me the "phorozoon," or bearing animal. This is a transient organism, for as a rule its life is very brief. It has a part to play in the cycle, and, like the Moor, when it has done its appointed task, it can go. The results upon which, generally speaking, my conclusions are founded have been obtained by what my late friend and teacher, Professor George Bond Howes, Huxley's assistant and successor, was wont to term the comparative morphological (and physiological) method. Under it there is but one mode of development for all the higher animals, in essentials the life-cycle is always similar, not only from fishes to man, but from worms and even lower forms to fishes. These "phorozoa," or asexual generations of various marine organisms, have long been known. Often, and until a connection therewith was established, they received names distinct from those of the sexual generations. Thus, the larva, "phorozoon," or asexual generation of a brittle star is still known as a *Pluteus,* and so on.

The late Professor N. Kleinenberg first set up (1886) the doctrine of development by substitution of organs. Under this every organ of the larva (asexual generation) was ultimately replaced by a corresponding, but differently developed, organ of the adult form (sexual generation). For a variety of reasons, into which space forbids entry here, it soon became clear to the writer that Kleinenberg's doctrine was inadequate, and that, instead of a substitution of organs, there was in development in reality a substitution of organisms. The sexual organism replaced the asexual one. This was seen to be an alteration of generations, and as there was no homology or close likeness between the asexual generation or its organs and the sexual form or its organs, it was an antithetic alternation of generations.

Now that we have the first mention of the word "antithetic," it may be permitted in passing to point out how Pasteur's researches started in the antithesis of the two sorts of tartrate crystals, mine in that of two nervous systems in the life-history of a fish. Here we are dealing with anatomical antitheses; later we shall come to recognize physiological antitheses, that of two ferments.

The tracing of the asexual generation in the backboned animals or vertebrata, from fishes to man, was not without its own special difficulties. These were due rather to expecting too much, and to failing at first to realize that the higher one ascended in the scale of life, the greater became the organization of the sexual form or generation, and the more insignificant the asexual one, until in the highest animals, the mammals and man, the asexual generation became reduced to the almost structureless chorion or trophoblast, as Professor A. W. Hubrecht named it in 1889. Many people, quite ignorant of all the embryological advances of the past twenty years, appear to imagine that I not only introduced the name "trophoblast," but also invented the thing to which it is applied in embryology. These things are not true. The name was invented for a thing defined by Hubrecht in 1880, and the thing itself has existed for untold millions of years!

Quite eleven years ago, in 1895, the standpoint had been attained that in every life-cycle of a higher animal, such as man, there were two generations, an asexual one, the trophoblast, and a sexual one, the metazoan individual or person. The puzzle was not how the first of these arose, for clearly it could be demonstrated any day in the week that it was the direct product of the cleaved or segmented egg (vide Fig. 5, phorozoon or larva). Somehow or other there arose gradually upon it the sexual generation, by a process of evolution or unfolding.

TABLE OF REVISED COMPARISON OF ANIMAL AND PLANT LIFE-CYCLES.

	ANIMAL.	PLANT.	
Asexual Generation.	Zygote or fertilized egg (2n).	Zygote or fertilized egg (2n).	Asexual Generation.
	Phorozoon or trophoblast.	Sporophyte or flowering plant (2n).	
	Formation of primitive germ-cell (2n).	Formation of primitive spore-mother cell (2n).	
	Formation of primary germ-cells (2n).	Formation of spore-mother cells (2n). (Reduction and sex determination.)	
	"Apospory" (reduction postponed).	Spore-formation.	
Sexual Generation.	A primary germ-cell (2n).	A spore (1n).	Sexual Generation.
	Origin of embryo by unfolding of a primary germ-cell, inclusion of rest in the individual of the sexual generation (2n).	Origin of sexual generation or gametophyte from one spore (1n).	
	Ripening of germ-cells. Reduction and sex determination.	Ripening of germ-cells. Reduction previously effected.	
	Sperm Egg	Sperm Egg	
	Zygote	Zygote	

In the above table "n" equals the reduced number of chromosomes, and "1n" signifies the emancipated cell, "2n" the duplicated or conjugated cell, the "conjugation" or joining together being carried out at fertilization. The "reduction" is the undoing of the previous duplication effected at conjugation.

How? Something resembling the spore-mother-cells of plants was required. That was very apparent. (See the table of Revised Comparison.) It was not until towards the close of 1900, when the first harvest of the germ-cell-researches had been reaped, that the problem was cleared up. The germ-cells arose *before* the embryo, as products of a single cell, the primitive germ-cell (U.K.Z. of the diagram, Fig. 5). They came into being upon the asexual generation or trophoblast. To contain and to nourish these germ-cells for a brief span of time another organism was needed, a sexual one, endowed with sexual organs.

How was the sexual organism obtained? In embryology things do not come into existence out of nothing! True, there are embryologists who look upon holes or cavities as the sources of important organs, but the writer at all events is *not* a "hole-morphologist"! The unit from which anything arises is the single cell. There was only one source from which such a sexual generation could arise; this was by the evolution or unfolding, the self-sacrifice, of one germ-cell for the well-being of the rest, and to contain them. At the epoch of the formation of the primary germ-cells all were alike in origin and potentialities. All were so many potential individuals of the species. If two developed independently, the result would be identical twins, if three, triplets, and so on.

Reviewing matters, starting with the fertilized egg, this gives rise to an asexual generation, the trophoblast, upon which there arises an "apical cell," the primitive germ-cell. This latter divides a certain limited number of times, this number being a fixed one for the species, but while it is *n* in the male, it is *n* plus one in the female. The products are 2, 4, 8, 16, 32, 64, 128, 256, 512, etc. In the diagram it is depicted as 128. These 128 germ-cells are the primary germ-cells. It is they which enter the embryonic body (Fig. 4) when this arises, and it is some of them which come to occupy all sorts of abnormal positions. But all the line of primary germ-cells are not destined for future generations. Some few of them, 1, 2, 4, or 8, are embryonic in destiny. At least one of these must unfold to form an embryo. If any of the others do so, the result is identical twins, triplets, etc. If any of these "embryonic" germ-cells lie dormant within the developed embryo, they may become the seed of future tumors, as will appear later on. The line of heredity so far revealed leads from fertilized egg to the primary germ-cells, and thence through all the history of the germ-cells within the "reproductive glands" to new eggs and sperms. That is, all things considered, the cycle is one of unicellular organisms, the germ-cells, in the history of which the sexual generation of individual is but an incident.

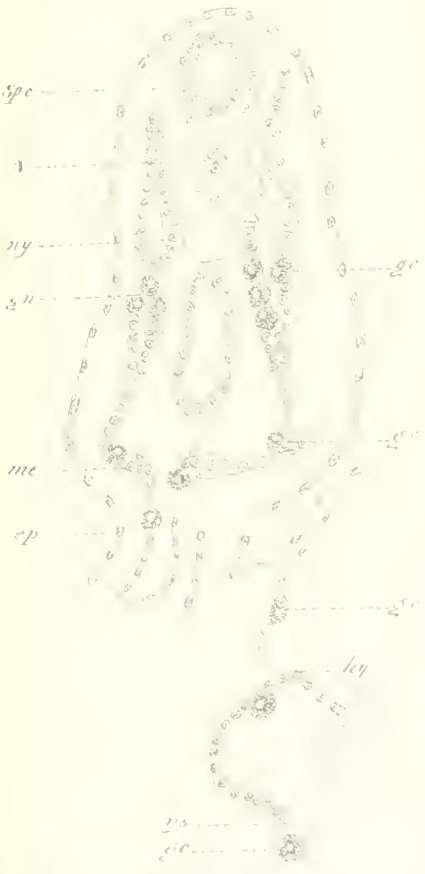

Fig. [illegible] Two conditions seen in two transverse sections of a 4½ mm. embryo of Perameles. The letters mean as in last figure: *spc*, spinal cord; *n*, notochord; *my*, myotome; *gm*, germinal mass; *me*, mesoblast; *ep*, epiblast; *hy*, hypoblast; *ys*, yolk-sac; *gc*, germ-cell.

Another important question to be solved more than ten years ago was the how and the when of the suppression of the asexual generation. This latter, whether represented by the transient nervous apparatus and other structures of a fish, or by the trophoblast of a mammal, went on flourishing for a certain, not very long, space of time, and then, quite suddenly, all growth was stopped, and its degeneration was initiated. In years long gone by how often have I not watched these asexual structures under the microscope, seen them flourish and bloom, and then—*subito*, as the Italians say—begin to fade away, as though blighted! The correlation of phenomena is often of the greatest importance to the embryologist in his work, and when this sudden fading away was first established, it was also noted that the commencing formation of the posterior fissure of the spinal cord was a concomitant phenomenon. This led to one of the many little research excursions I have made right up the backboned series to the mammals, and to the study of human embryos themselves. A whole array of interesting and connected events was soon unearthed, and the putting together of these culminated in the discovery of the critical period—one of the most momentous finds ever made!

"There is a period in the development of every vertebrate embryo, during which, and only then, it resembles the embryo of any other vertebrate in a corresponding phase in certain general features. But, while it thus agrees exactly with any other embryo of this period in characters, which are common to all vertebrate animals, it differs from the embryo of any other class in certain special class features, and also from any other embryo of the same class, but of a different order in other and ordinal characters. Immediately before this period is reached it begins to put on generic and specific characters, and thus it then begins to differ from all other embryos in these." In other words, the embryo then first asserts its presence, announces its own individuality. It is then first present as a complete thing. It then first begins to use its own digestive apparatus, especially its pancreas gland, and in a higher mammal to feed itself by means of the allantoic placenta. This critical period is common to all backboned animals in their development. At this period the average marsupial is born into the world, and then it first begins its long mammary nutrition. In so great a hurry is it to get into the world that it forms its anus in the act of being born. The human embryo does the same at the like period, in the seventh week of gestation, as though it were a marsupial, although it has no use for this aperture for many months to come. Then the allantoic placenta, an organ of the embryo or sexual generation, like the pancreas-gland, first begins to function, and then normally the trophoblast begins to fade, to be suppressed, and to degenerate.

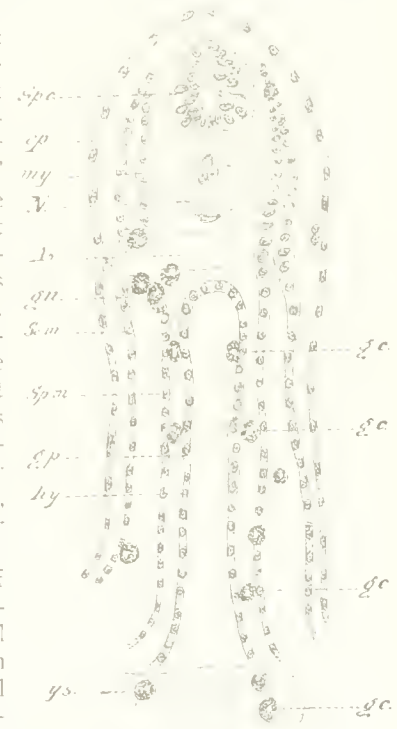

Fig. [illegible] A diagrammatic section of an early skate-embryo. The letters illustrate the migrations of the germ-cells along the germinal path, [illegible] the resulting germ-cells in various abnormal post-embryonic situations. The letters mean as in Fig. 1, except: *gm*, germinal mesoblast; *spm*, planc[illegible] mesoblast; *ao*, aorta.

Though ferments first made their appearance in my published writings in 1892, for I pride myself on having been one of the very few pupils the late Professor C. F. W. Krukenberg ever had, it was not until 1904 that their all-important bearings upon the critical period were evident. In human gestation, if at the critical period the embryo be wanting [illegible] very abnormal or very abnormal human embryo can only exist as one of identical twins), the characters of the critical period are lacking, and [illegible] always begins [illegible] the uterine epithe-

lium and wall, may go on with this process, exhibit indefinite powers of growth, and eat its way through uterus and other organs, finally blocking the lungs and brain of the mother. This is chorioepithelioma, recognized to be a form of cancer by Professor F. Marchand, in 1895. This is without doubt the most deadly form of cancer. Here the sexual generation being unable to suppress the asexual one or trophoblast, the latter exhibits the characteristics of asexual generations, the powers of indefinite growth and increase. Pathologists at present distinguish wrongly between two forms of chorioepithelioma, a malignant one and a benign one. The latter has no real existence, for in it the trophoblast cells are all dead and undergoing the characteristic degeneration due to the action of pancreatic ferments. A "benign" chorioepithelioma, as Professor Schmorl found, may happen in any gestation, for the trophoblast cells of the precritical periods, which have invaded the maternal organs, even the lungs, are normally also brought to commencing degeneration at the critical period.

In 1902 the conclusion was reached that cancer was an irresponsible trophoblast, and in these words for the first time in human history the *nature* of cancer was laid bare.

Its *origin* was not at first so clear, but by the year 1904 it was recognized that the problems of like or identical twins, upon which the writer was then and since engaged, threw light upon its origin. Owing to their extraembryonic origin aberrant germ-cells are quite common, and they may be met with anywhere in the embryonic body. The ordinary aberrant germ-cells, which usually degenerate, were much too abundant a source to furnish the origin of a cancer. *Entia non sunt multiplicanda.* The etiology of double monsters and of malignant tumors was traceable to the phenomena of like twins. The facts concerning these, as well as those relating to Hermann von Jhering's finds in the armadillo, *Praopus hybridus*, which my work has fully confirmed, furnished the key. This armadillo, the "tatu," produces all its young in one chorion or trophoblast, and therefore they are all identical, of the like sex, and all products of one egg. The whole doctrine of the tumors, benign and malignant, centers in the phenomena of like twins, that is, in a former multiplicity of embryos, all products of one egg. To-day the "tatu," *Praopus hybridus*, produces 7 to 12 such, all derived from a single egg, all of the like sex, and *some of them more or less rudimentary!*

These latter tell a very significant story* to the

*Because hypothetical, the following may find a place as a foot-note: From the consideration comparatively of a variety of embryological phenomena, well known to the investigator, it is obvious that the procedure where only a single embryo is going to arise from one of the primary germ-cells will not be quite the same when two or more embryos are destined to unfold. The setting apart of one cell will be preceded by one or two divisions, giving one functional cell and possibly three abortive ones. But if the development shall result in, say, triplets, there will be not merely two divisions, but at least three, if not four. Of the products which are all primary germ-cells, three will form the embryos, these may be abortive or rudimentary, and if there are eight cells, two will remain as germ-cells, which later on in some or other of the individuals arising may become the seed of tumors, benign or malignant. But these cell divisions have a curious tendency to be in twos or pairs, or even in threes, so that in the formation of triplets, instead of eight cells, there may be sixteen concerned. How many of these will be abortive, and how many "embryonic" in potentialities, it is at present impossible to say. The armadillo, *Praopus hybridus*, with its seven to twelve young in one chorion or trophoblast, affords an instance where at least sixteen cells must originally in every case have arisen at the line of primary germ-cells, and in addition to these cells destined

embryologist. They recall to him other similar phenomena in embryology. Reductions in numbers of units (cells), formerly of importance, but which now persist, not because they are really required, but because their existence and persistence are parts of an old scheme of the cycle of animal life.

The writer has had abundant opportunities of noting the liability of identical twins to cancer, but to state the matter in this way is misleading. Those individuals who develop malignant growths are as liable to such as are identical twins, and for the same reasons. Without doubt cancer is hereditary. This is abundantly borne out by clinical histories in my possession. There are records, where both parents died of it, where even one or other grandparent developed cancer, and it is only too commonly told the writer that in some particular case the father

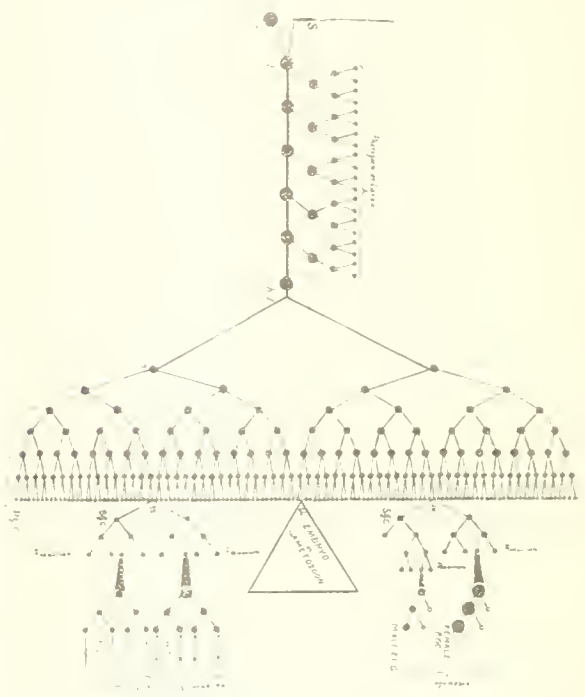

FIG. 5.—Diagram of the life-cycle of a backboned animal, such as a fish or a mammal, illustrating the union of egg and sperm, E. and S., to form the zygote, Z., the origin of the phorozoon or asexual generation (trophoblast), the germinal track from Z. to U.K.Z., the latter being the primitive germ-cell. The divisions of the latter are carried to seven mitoses or cell-divisions, as in some male dog-fish, in a potential female embryo there would be an additional division, giving 256 primary germ-cells. Diagrammatically, the unfolding of one primary germ-cell, the 65th, is depicted as forming an embryo or sexual generation. To complete the track of heredity from generation to generation through the morphological continuity of the germ-cells a diagram of oogenesis or egg-formation has been appended to the 96th germ-cell, and one of spermatogenesis or sperm-formation to the 32d. In the former the formation of a male-egg and of a female-egg is shown, in the latter the two forms of sperms (as in the fresh-water snail, *Paludina*, after the statements of F. Meves) i.e. the hairlike or functional, and the wormlike or functionless sperm. The additional division in the formation of functional male eggs should be noted. It accords with the additional division to form primary germ-cells in the development of a female.

or the mother was a victim of cancer. The most remarkable example known to me at present is in the family of a master-carpenter in Edinburgh. His mother died of uterine cancer, and he has lost all his brothers and sisters, seven in number, by some form or other of malignant disease. Embryologically regarded, persons suffer from cancer because they are at the basis members of a group of identical twins or triplets. It is, therefore, not from any and every aberrant germ-cell that a cancer takes its

become the sexual products. Of these sixteen cells, seven normally give rise to fully developed embryos, five to more or less rudimentary ones, and there still remain four, which, as cancer is not known here, may be abortive. But if the number of young here arising at every gestation were much reduced, while all the preliminaries were retained, what a rich harvest of tumors might be the result! In a case of identical triplets, cited by Prof. H. H. Wilder, at least two of the sisters died of cancer

start, but from one or other of some few germ-cells, embryonic in destiny, cells which should have given rise to twins, triplets, etc., identical with the embryo, which arose in any particular gestation.

The line of primary germ-cells of the diagram (Fig. 5) is not made up of one only, destined to form an embryo, and of *n* minus one, destined for a future generation, but it is composed of a limited number, 2 or 4 or 8—often not so many— embryonic in destiny, of which, as a rule, one only becomes a normal embryo, and n minus 2, or n minus 4, etc., are set apart to provide for the cycle of unicellular organisms or germ-cells. Such a persistent embryonic germ-cell, encapsulated within the individual, may at any time, by illness, injury, irritation, or other cause, such as declining years, weakening the system, be awakened into activity. The "age-incidence" of cancer is scientific nonsense, for it is only relative. Whenever this happens, the time is long past when it should have unfolded as an embryo, it attempts to resume the cycle, and its "unconscious memories" only enable it to try to repeat the asexual portion of the cycle. Such an encapsulated germ-cell can only do one or other of two things in the end, *and live*. It may develop, and it only does this congenitally with the developing individual, or it may attempt to go on with the life-cycle. Skipping the formation of conjugating cells or gametes, it is brought to the next portion of the life-cycle, trophoblast. In this way it becomes an irresponsible trophoblast, and it may imitate or mimic anything in its environment. Whatever it mimic, something existent or non-existent, it is always an "imitation tissue," and behind the domino or mask an irresponsible trophoblast.

In nearly all the foregoing morphological aspects have been under consideration. It now behoves us to take account of the physiological and functional ones. The critical period in a fish or mammal or man is that at which the embryonic organs as a whole first begin to function. The fish begins to feed itself, digesting the yolk by intestinal digestion. The mammal or human embryo begins to do the like (in the absence of food-yolk) by means of the commencing functional activities of the allantoic placenta. At this epoch in the fish the pancreas-gland manifests its activities by the presence of abundant zymogen granules in the cytoplasm of its cells. That these result in the secretion of pancreatic ferments is shown by the digestion of yolk within the gut. Owing to this digestion the fish, like the mammal, gets ever bigger and bigger. None of the yolk enters its stomach, for this has then as little functional activity as the stomach of a mammal has during fetal life. An internal yolk-sac is formed for the reception of the yolk from the external one, and the yolk duct opens into the duodenum. This fact alone indicates to the embryologist that the pancreas gland is functioning. In an average marsupial at the critical period this gland certainly begins its functional activities, for the animal is then born, begins its mammary nutrition, and digests the milk. If a certain thing happen at the critical period of a fish, or a marsupial, I know from experience that something corresponding to it will take place at the like period in a higher mammal or a man. A fish forms its anus at this period, so does a marsupial, while in the act of being born, and so does a man, although he does not need it for some seven months more. As the pancreas gland begins its functions in a fish or an average marsupial, so it must do in the development of a man. Otherwise there would be no essential unity in the mode of the development. Undoubtedly, under the action of the pancreatic ferments, the asexual structures of a fish development begin to degenerate, and, as represented by the trophoblast, they do the like in a mammal or a man.

This leads to an inquiry as to modes of nutrition, regarding which the reader may find much interesting information in Verworn's "General Physiology," and still more in Otto von Fürth's "Vergleichende chemische Physiologie der niederen Tiere, Jena, 1903. The unicellular organisms or protozoa, all asexual generations of animals, such as invertebrate larvæ, fish blastoderm, and mammalian trophoblast, not forgetting cancer cells, nourish themselves intracellularly and by means of a ferment acting in slightly acid medium. On the other hand, an extracellular digestion, by means of ferments, pancreatic enzymes, acting in slightly acid, neutral, or alkaline media, is restricted to the sexual generations or individuals of the higher animals (Metazoa) and man. In the former the ferment is possibly always the like one, and it would possibly be, to my mind, identical with the cancer-ferment, discovered by Eugen Petry in 1890, and which I have named "malignin." The ferments of the sexual generations being much more powerful than the intracellular one found in the forms referred to above, being, indeed, the most powerful things in the whole range of organic nature, it would follow that just as these higher ferments destroy in life the living cells of malignant tumors, pulling down their albumin, so also they must destroy the organisms, usually asexual generations, of tuberculosis, sleeping-sickness, malaria, yellow fever, etc., when injected into the blood by means of hypodermal medication. Regarded from the strictly scientific standpoint of the embryologist, who is "not even a medical man," the tubercle bacillus, like the trypanosome, or the organism of yellow fever, or that of malaria, etc., can no more live in the presence of these higher ferments than the cancer cell can. This has apparently been shown, in one case at least, clinically and pathologically for the tubercle bacillus by my friend, Dr. Margaret A. Cleaves of New York City. The first case of cancer which it fell to her able brain and skilled hands to treat by means of injections of pancreatic ferments, was also complicated by tuberculosis of the bowel. When, in August, 1906, the first communications passed between us, I informed Dr. Cleaves that, in my scientific opinion, whatever happened to the large masses of rectal cancer present, which appeared too great to leave room for hope of their entire removal, the tubercle bacilli would be bound to go. They disappeared, and after amylopsin had been injected for some little time the pathologists failed to find a single tubercle bacillus in the discharge, where previously they had been abundant. In our joint opinion the result was due rather to amylopsin than to trypsin, for the former is the medium of all others, in which the leucocytes can act. As in the treatment of cancer, the injection used against any of the above human inflictions should be an extract, freshly prepared from the pancreas-gland direct, and containing all the ferments especially the one in the presence of which the leucocytes act, *amylopsin*.

Of the ferments of the sexual generations by far the most important is that first discovered by the Court physician, Baron Corvisart, and to which afterwards Prof. W. Kühne gave the name of "trypsin." It is this enormously powerful ferment, trypsin, upon which Nature relies for the suppression of trophoblast in normal mammalian gestation. Lower down in the scale than the mammals she associates with it its complement, amylopsin. Fetal

blood of a mammal does not contain this latter, and the fetal pancreas-gland does not produce it. In the human pancreas-gland amylopsin is not formed until some few months after birth. The reason of this is not far to seek. When in the ancestral mammals uterine development was initiated, along with it and following its close there was evolved the mammary nutrition. In this amylopsin is not needed, and its production by the pancreas-gland was postponed until the milk-nutrition was done with. The mammary nutrition is (on the testimony of more than one embryologist, thus on that of my friend, J. P. Hill, as well as on my own) older in time than the allantoic placenta. The latter was introduced to defer the birth period, and by prolonging the gestation, as detailed in my "Span of Gestation," to bring the young into the world in a more perfect state. In prolonging the gestation, the mammary nutrition was postponed, and in this way the appearance of amylopsin upon the scene put off to an even later period. This has led to grave difficulties and dangers in human gestation, for there is no such thing in nature as a ferment possessing both proteolytic and amyolytic powers.

The proper scientific treatment of cancer is the enzyme or pancreatic one. If trypsin alone be used, bad symptoms very soon arise, all of which recall the vomiting of pregnancy and eclampsia. Trypsin alone is a very deadly remedy for cancer! The reason being that in killing the cancer albumin this enzyme does not split it up to harmless simple products. What the products of the action of trypsin alone are it is impossible to say, for they may quite conceivably vary with the amount of the injection and with its strength. Anyway, some of them are rank poisons to the organism, and they lead to nausea, vomiting, pain in the back, drowsiness, high arterial tension, albuminuria, edema, etc., and even to convulsions lasting several hours. The cause of such symptoms and of the eclampsia of pregnancy did not long puzzle the embryologist, who perceived that it was the absence of the complementary ferment, amylopsin, which induced them. Nature had committed a grave error in omitting amylopsin from fetal blood, and in relying solely on trypsin. In normal gestation if anything went wrong with the maternal pancreas-gland, and if the maternal supply of amylopsin became diminished or ceased, then serious symptoms were bound to follow. To my knowledge at the moment of writing injections of amylopsin have not yet been given in any case of eclampsia, but they have, whenever used in cases of cancer, removed all the bad symptoms named.

The preparations employed in the enzyme treatment of cancer should be like the sole ones in use in America, the Fairchild preparations. That is to say, they must be potent extracts, scientifically prepared from the fresh gland direct. The trypsin injections must contain all the enzymes and be especially rich in trypsin and amylopsin. The injection of amylopsin is to be used at all times to meet and remove all bad symptoms, and in the later periods of treatment, when all the cancer albumin has been destroyed, and it must be an extract of the pancreas-gland free from trypsin.

This treatment is not intended for use against benign tumors, which are composed of real or somatic tissues and which are not killed or broken up by trypsin. Owing to this the injections furnish a chemical test of the true nature of a tumor, whether it be benign or malignant. Thus, some pathologists look upon adenomata as benign, or at all events as only potentially malignant. To my mind they are "imitation tissues," and I should anticipate that any and every adenoma would yield to the chemical test.

Owing to the circumstance that the cycle of life is really a continuous procession and succession of unicellular organisms, germ-cells, from which there arise asexual generation or trophoblast, and embryo or sexual generation, the tumors can be classified into three groups, as follows:

(1) *Embryomata.* Benign neoplasms. Pathological manifestations of some greater or less portion of the sexual generation, "the embryo." They are composed of real tissues, that is, normal or somatic ("embryonic"), cells or tissues. At its basis each is a greater or less portion of a twin, triplet, etc., identical with the individual containing it. They are now endowed with indefinite powers of growth, and they nourish themselves like other normal tissues.

(2) *Amphimixomata.* Malignant neoplasms. Combinations of embryomata and trophoblastomata. Pathological manifestations or attempts to reproduce the whole life cycle, including trophoblast and embryo. They are transitional forms. (The mixed tumors of Wilms are not all malignant, some being merely embryomata.)

(3) *Trophoblastomata* (cancer and sarcoma). Malignant neoplasms. Pathological manifestations of the asexual portion (trophoblast) of the life cycle. They are not known to differentiate functional gametes, eggs, or sperms. They never include or repeat any part of an embryo. They are never composed of somatic ("embryonic") cells, though they may mimic such or even resemble no other cells in the body. As Fleischmann, Paget, and Bland Sutton pointed out, they are "imitation tissues." They exhibit powers of unlimited growth and increase, and they nourish themselves by eroding and destroying normal cells and tissues in a manner exactly like that of the trophoblast of normal gestation, and by means of a ferment acting intracellularly, viz., malignin.

As the two latter divisions are made up of malignant tumors, it is for them, and not for the members of the first group, that the enzyme treatment is intended.

In the foregoing simple story I have endeavored to the best of my ability to give in outline some idea of the course and nature of my scientific work and conclusions since the days of May-June, 1888, when I worked on the shores of Black Lake, New York. Much has happened since then, not only in my own little field of work, but outside of it. It is since that time, that is, in 1889, that Hubrecht set up the name "trophoblast" to replace with a different significance the older term "chorion." Long after then came the period of my germ-cell researches, not yet completed. These have, however, extended so far that they are revolutionizing embryology. In the light they throw on phenomena, the old Wolffian idea of epigenesis, and the allied Cohnheim hypothesis of embryonic "rests" as the sources of tumors, along with many other things, become memories of the past in science. The night is far spent; a new sun is arising. Epigenesis, somatic origin of germ-cells, and recapitulation in development are fading away into thin air before the mighty powers of Evolution with predestination, an actual tangible continuity of germ-cells from generation to generation, and an antithetic alternation of generations as the mode, the only possible one, of animal development.

This present writing is not the record of my scientific work. It is but a brief sketch of some of

the things my "brigades" and "divisions" have done or can do. He who would venture to attack them may be invited to turn his attentions to the original memoirs, representing the military "brigades" and "divisions," for these are in the field and ready to meet all comers.

Let not the reader imagine that my main scientific work has been the elucidation of the problems of cancer. Not at all! This portion of the work was a mere side-issue—an interlude. One, undoubtedly, of overwhelmingly momentous import for human interests, but one, regarded in the cold, clear light of science, which had to the investigator as such, and not as a fellow-creature, merely the import of furnishing a confirmation of the truth and validity of his conclusions in other and more fundamental directions. When I think of this there passes through my mind the picture of Carl Ernst von Baer, groping year in, year out, always groping to discover the laws of animal development. What was denied him has in the fullness of time been vouchsafed to one who, in admiration of his genius, followed humbly in his footsteps.

THE THEORY OF THE TOXIC ORIGIN OF PERNICIOUS ANEMIA.

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Pernicious anemia is defined by Sidney Coupland[1] as "a variety of primary anemia which arises insidiously, and is characterized by progressive diminution in the number, and changes in the form, of the red corpuscles of the blood, together with similar but generally less marked diminution in the amount of hemoglobin; which changes apparently depend upon undue hemolysis combined with inadequate compensatory hemogenesis—a condition which, in the majority of cases, passes more or less rapidly to a fatal termination, the progress being, in some cases, interrupted by periods of improvement, followed by relapse, but rarely resulting in permanent restoration to health, whatever the method of treatment." This definition, while very satisfactory in many ways, is not as concise and complete as that of Ewing[2], who calls attention to the changes in the bone marrow which have come to be considered characteristic of this condition.

To make complete the definition of that form of pernicious anemia which it has frequently been the custom to describe as "primary," "idiopathic," "cryptogenetic," or "essential," attention might well be called to evidence of a toxic element entering as a cause into the symptom complex.

Most authorities now exclude from the type of disease known as pernicious anemia those forms of anemia the causes of which have been well established, and reserve the term pernicious anemia, or, more frequently, primary progressive pernicious anemia, for that type long known as idiopathic or cryptogenetic. Strümpell[3] is among the most prominent of those who hold this view. On this basis would be excluded the grave anemias due to ankylostoma and bothriocephalus latus, repeated hemorrhages, and pregnancy. Wood[4] classifies these under the head of secondary anemias of the pernicious type, and considers them as more aggravated forms of the anemias to which group belong those due to chronic hemorrhage, tumors, lead poisoning, syphilis, malaria, typhoid fever, and chronic atrophy of the stomach. All of these differ in some way symptomatically from primary pernicious anemia.

That repeated hemorrhage is a cause of pernicious anemia was claimed by Habershon[5], Quincke[6], Schepelern[7], Finney[8], Greenhow[9], Stockman[10], and is still affirmed by some; but since the morphological changes in the blood and bone marrow have been required to establish completely the character of these anemias as pernicious very few have been seen. Ewing[2] states that he has never seen a case of pernicious anemia directly referable to hemorrhage.

Pregnancy as a cause of pernicious anemia is also fast becoming less important. Eichhorst[11] claimed that 35 per cent. of the cases published by him were caused by pregnancy. The genuineness of some of these cases may now be doubted; and at any rate the patients suffered from a variety of severe symptoms not at present regarded as belonging to the disease, so that Lazarus[12] classes many of them as examples of secondary anemia and exhaustion. Cases of progressive anemia accompanying pregnancy have gradually disappeared from recent literature, Ehrlich being able to find only one case of this description (Laache, Case 9)[13]. At the Sloane Maternity Hospital, from 1892 to 1899, Ewing saw no cases of anemia of the progressive pernicious type, and from 1902 to the present time none has been seen by the present pathologist of that institution.

That ankylostoma and bothriocephalus latus may of themselves give rise to a progressive pernicious anemia is possible; but the fact that the latter exists frequently in the intestinal canal without producing this result would imply a variation in virulence of the parasite, an increased susceptibility of the host, or a coexistence or symbiosis with some other organism in the intestinal tract. There remains then a group which to the present time has still been designated idiopathic or primary progressive pernicious anemia.

Addison[14] classed as idiopathic those cases where there had been no previous loss of blood, no exhausting diarrhea, no chlorosis, no purpura, and no renal, splenic, marantic, glandular, strumous, or malignant disease. Musser[15] cites as other occasional preexisting causes, great physical overexertion, exposure, great shock or fright. Stockman[10] suggests that repeated small capillary hemorrhages—chiefly internal—play an important rôle in the causation of idiopathic pernicious anemia, and also claims that as a result of anemia, fatty degeneration of the walls of the small blood-vessels occurs, giving rise to greater hemorrhage, which by increasing the anemia completes a vicious circle, terminating ultimately in the pernicious grade of anemia and death. Stockman's views, however, have never been widely accepted.

The infectious origin of pernicious anemia has been advanced by Klebs[16], who claimed to have found an organism—*Cercomonas globulus*—in the blood; by Frankenhauser[17], who found an organism which he identified as *Cercomonas navicula*, and by Petrone[18], who reported the isolation of leptothrix in several cases. The fact that pernicious anemia is more frequent in some countries than in others Strümpell[3] considered to be one argument for assuming that the disease is an infectious one.

It has been maintained that unfavorable hygienic surroundings and insufficient nourishment promote the development of the disease. In this connection

it is well to consider that when an individual obtains insufficient nourishment that nourishment is also liable to be poor in quality, thereby creating greater opportunity for the introduction into the intestinal canal by this means of deleterious bacterial and chemical agencies.

F. P. Henry[19], Stephen Mackenzie[20], and Rindfleisch[21] are advocates of the view that the essence of the disease is in defective hemogenesis, in consequence of which the red blood corpuscles are abnormally vulnerable. Such a case was cited by P. Grawitz[22] of general sarcomatosis of the bone marrow accompanied by typical changes in the blood. Litten[23] and Waldstein[24] presented two cases which were obscure and of doubtful diagnosis.

The hemogenetic theory of the origin of the disease, as suggested by the remarkable reversion of the bone marrow to its fetal condition, first observed by Pepper[25] and Cohnheim[26], is one which has been advocated by some with considerable vigor. The significance of these bone marrow changes has been materially affected by the recognition of the part played by hemolysis in the disease as well as by the fact that they are not invariably met with, nor differ in kind, if they do in degree, from the changes in the marrow which occur in anemia experimentally produced by bleeding. Whenever these marrow changes are met with side by side with the characteristic hemolytic features of pernicious anemia they are more likely to be of a secondary nature, indicating an effort on the part of the hemogenetic organs to repair the waste that is in progress elsewhere.

Osler[27] believes that to explain the hemolysis, attention must be called to the condition of faulty gastrointestinal digestion which is so commonly associated with these cases, and that poisonous materials are developed which, when absorbed, cause destruction of the corpuscles. In Coupland's[1] opinion also the hemolytic doctrine assumes the operation of a specific toxic agency; and it is interesting to note that those who have studied the degenerative changes in the spinal cord, which are apparently more common in pernicious anemia than might be supposed from the clinical phenomena, believe also that these changes are best explained by a toxic influence.

Schuman[28] advocates the theory of the toxic origin of pernicious anemia, but believes with Immermann[29], Quincke[30], Lichtheim[31], and Fr. Müller[32] that it is not an etiological entity, but only a symptom complex which is brought about by various causes.

To suggest further the toxic nature of the disease it is only necessary to consider briefly some of the more marked and constant symptoms. And here it may be cautioned that toxic symptoms are not necessarily the result of the activity of organisms within the blood stream or tissue spaces alone, but may result from absorption of the products of bacteria which are on the surface of the body or in the alimentary canal—the most familiar type of surface absorption occurring, of course, in the infection by the diphtheria bacillus.

A peculiarity of the disease is the occurrence of fever of an irregular type which, though not constant, sometimes rises to 102° or 103° in the evenings, and is followed by a morning remission. A characteristic is its intermittence with fluctuations under slight influences. Another condition which occurs with even greater regularity is the digestive disturbance, which of all factors appears to point most closely to the toxic and gastrointestinal side of the etiology. Not only are the earliest symptoms connected with the digestive tract in a considerable proportion of the cases, such as vomiting, diarrhea, or irregularities of digestion, and loathing of food, but many cases exhibit also definite changes in the gastric or intestinal mucosa.

The reports of Sandoz[33] were apparently the first to strengthen the impression that some of the most typical cases of pernicious anemia are of intestinal autotoxic origin, this observer finding that apparently genuine cases were sometimes cured by vigorous gastric lavage, enteroclysis, and the administration of intestinal antiseptics and laxatives. This observation has since been verified and the opinion has steadily grown that the most frequent, if not the essential, cause of progressive pernicious anemia is found in a peculiar toxemia of intestinal origin, with or without organic lesions of the mucosa. The evidence supporting this opinion has accumulated from many sides. The results of intestinal antiseptic treatment have steadily pointed in this direction. Signs of increased intestinal putrefaction have been noted in the excessive indicanuria of the disease, and in the presence of cadaverin and putrescin in the urine of certain cases (Hunter[35]).

Hunter's studies (1901) in this field were undoubtedly the most important experimental contribution to the etiology of the disease made up to that time. His conclusions were, briefly, that pernicious anemia was a specific clinical condition resulting from excessive hemolysis, occurring chiefly in the portal system and brought about by intestinal intoxication in which the products of growth of specific bacteria are probably concerned.

Along this line Herter, in a lecture before the Harvey Society, entitled "The Common Bacterial Infection of the Digestive Tract and the Intoxications Arising from Them," has recently demonstrated the more or less constant presence of certain forms of anaërobic bacteria in the contents of the large intestine. These bacteria are Gram positive in their staining capacity and are represented most frequently by the *Bacillus aërogenes capsulatus*. These bacteria are able to break down proteids into a form suitable for the use of other putrefactive bacteria, among which are the indol-forming organisms, indol being a substance which, as stated before, occurs quite uniformly in excess in pernicious anemia. The significance of the presence of this excess of indol was shown by Dr. Herter by the production of toxic symptoms in animals whose oxidizing capacity had been reduced by small injections of potassium cyanide, causing a condition of diminished oxidation which it is more than likely occurs in conditions of blood poverty.

These anaërobic organisms produce substances which are strongly hemolytic, so that it only has to be assumed that these substances pass through the intestinal wall more or less intact to have access with destructive effect to the blood of the portal system—where Hunter has found the greater part of the hemolysis to occur. But the observation of greatest practical value which Herter has made in this connection was obtained by the demonstration of the action of methylene blue, which changes to a colorless leucobase upon reduction. By this means he found that oxygen occurred in the intestinal canal as far down as the ileocecal valve, but no further. As these anaërobic bacteria are confined for their place of residence to regions free from oxygen, they must be limited to the large intestine where they are within reach of therapeutic measures directed from the lower end of the gastrointestinal canal; hence, the possibility which he affirmed of removing them by irrigation of or local applications in the colon.

Upon his suggestion two cases of undoubted per-

nicious anemia were treated in this way in the wards of St. Luke's Hospital in New York, and the results obtained in these cases by means of colon irrigation were sufficiently noteworthy to merit permanent record.

The first case occurred during the medical services of Drs. Hollis, Norrie, and Janeway, and the late Drs. Davis and Spalding. The second case occurred during the fall service of Dr. Austin W. Hollis.

The first case was that of a man twenty-nine years of age, a laborer, born in Ireland. When he first came under observation, December 23, 1902, he gave a history of having had for three years shortness of breath, swelling of the feet and about the eyes. He complained of headaches and dizziness in the morning, numbness of the legs, constipation, and progressive weakness. Soreness and pain in the abdomen had caused him considerable discomfort.

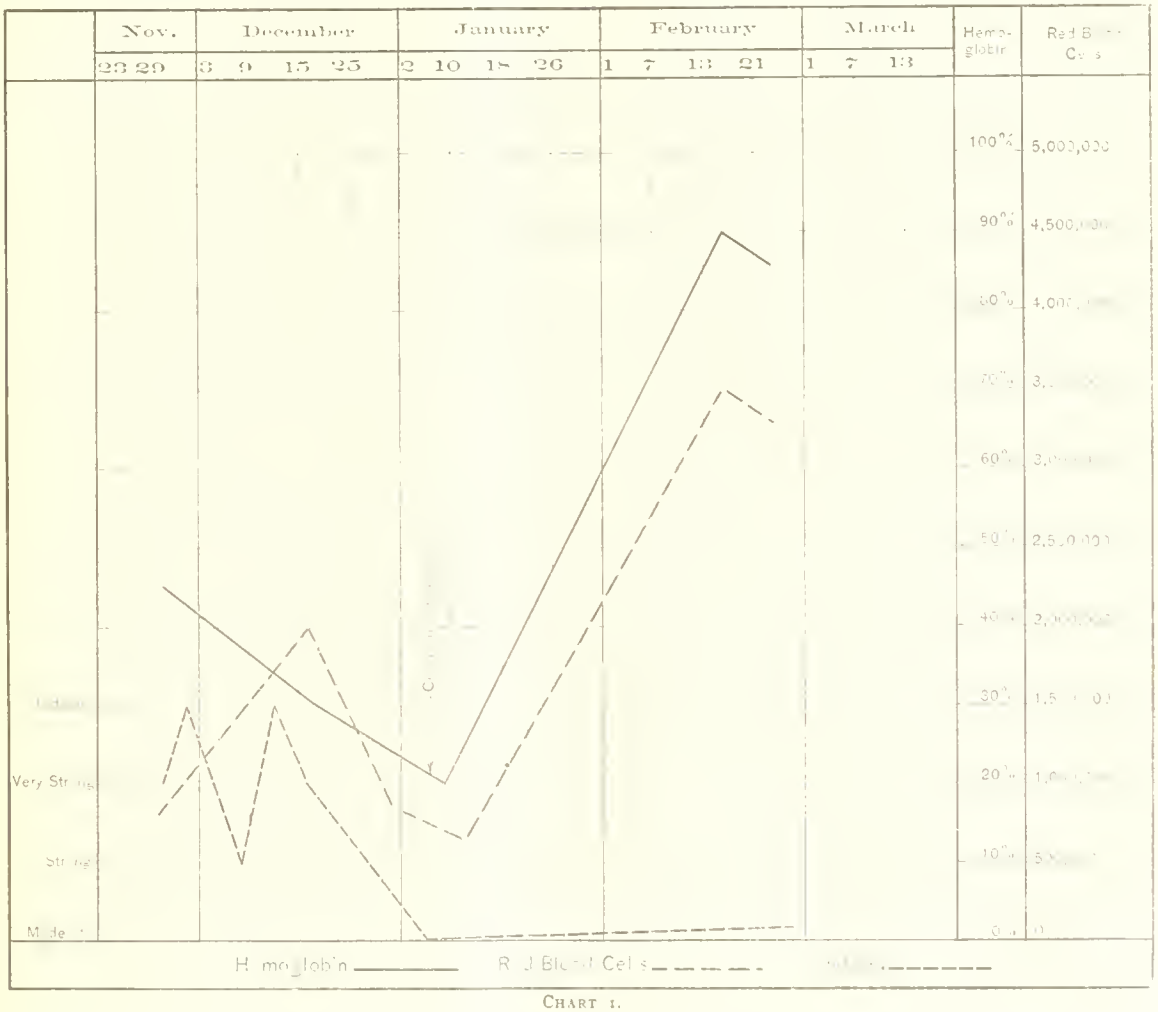

CHART 1.

His skin was pale, yellowish in color, and his tongue was slightly coated. His lungs were normal. A hemic murmur was heard over the heart. His feet and legs were edematous; knee jerks were not obtained. His physical examination otherwise showed nothing abnormal. The urine was normal.

At the time he was placed under observation his hemoglobin was 25 per cent.; red blood cells, 928,000. The differential leucocyte count showed 59 per cent. of polynuclears, 38 per cent. of lymphocytes, 2 per cent. of eosinophiles, and 1 per cent. of mast cells. Morphologically his blood was typical of pernicious anemia. A test meal showed an absence of free hydrochloric acid in the stomach. During the early part of his stay in the hospital his temperature occasionally rose as high as 101.6°. He was given arsenious acid and Blaud's laminoids upon admission, and these were kept up continuously, with lavage, and after February 2 atoxyl was given hypodermatically in doses of 25 minims.

The following table shows the course of the blood changes:

Dec.	27.	Hmglb.	25 per cent.	Red Blood Cells 928,000
Jan.	3.	"	27 "	" 1,612,000
Jan.	10.	"	22 "	" 1,310,000
Jan.		"	18 "	" 1,776,000
Feb.	2	"	20 "	" 828,000
Feb.	17.	"	20 "	" 1,080,000
Mar.	11.	"	30 "	" 1,202,000
Apr.	3.	"	30 "	" 1,696,000

There was moderate improvement at the time he left the hospital, but during each succeeding summer he was compelled to return for treatment, complaining of dyspnea, palpitation, dizziness, headache, and weakness. Each time his blood condition had deteriorated since the preceding stay in the hospital, although at one time his hemoglobin rose to 50 per cent. and the red blood cells to 2,372,000.

The gastrointestinal symptoms became more marked and during the year previous to the last term of treatment he suffered especially from constant morning vomiting, dizziness, headache, fever, weakness, and pain in the legs. A strong indican reaction was found in the urine. His medication had included from time to time Fowler's solution, iron, nux vomica, sodium cacodylate, and dilute hydrochloric acid.

The above symptoms were present on his admission to the hospital on November 23, 1905, and were accompanied by a hemoglobin percentage of 45, and 900,000 red blood cells. His condition was unimproved by the administration of arsenic and strychnine up to January 8, 1906. Irrigation of the colon

was then commenced, using once a day a double current of warm saline solution until the return flow was clear. Reference to the accompanying chart will show the almost immediate response to this measure with an ultimate rise in hemoglobin to 85 per cent. and in red blood cells to 3,400,000.

Since leaving the hospital this man has had daily colon irrigations, and eight months after his discharge from the hospital his hemoglobin was still 85 per cent. and the red blood cells 3,800,000. His health remained perfect.

Another case of a similar nature was that of a man aged fifty-three, a publisher by occupation, who, with the exception of habitual shortness of breath which prevented his taking any active exercise, had nothing in his previous history which could have any bearing on the disease. For a year previous to admission to the hospital he had been gradually losing energy and strength. This had been accompanied by a loss of twenty-five pounds in weight. The skin had become much pigmented. His appetite constantly decreased, and there was a good deal of distress after eating, with eructations of gas and frequent vomiting. Shortness of breath and headache became continuously more troublesome. A few days before admission weakness caused him to discontinue work and finally became so marked that walking was impossible. There had been slight fever (101°). His bowels were regular.

On admission his physical examination showed pallor and yellow tinge of skin; nutrition fair; tongue coated; pupils, pulse, lungs, liver, and abdomen normal. A hemic murmur was heard at the apex of the heart. The kidneys were not palpable, but the edge of the spleen—soft and thin—was just palpable below the free border of the ribs. Knee jerks were not obtained. Shortly after admission he suffered from pain in the legs, which was of about two weeks' duration.

On admission to the hospital his hemoglobin was 28 per cent., red blood cells 1,320,000, leucocytes 5,200. The differential leucocyte count showed 36 per cent. polynuclears, 64 per cent. lymphocytes. The red blood cells stained deeply, the central depression being very slight. Normoblasts and megaloblasts were present; poikilocytosis and polychromatophilia were marked. Indican was present in a trace in the urine and albumin was present to the extent of 10 per cent. by bulk.

His medication at first consisted of nux vomica and Fowler's solution, and dilute hydrochloric acid.

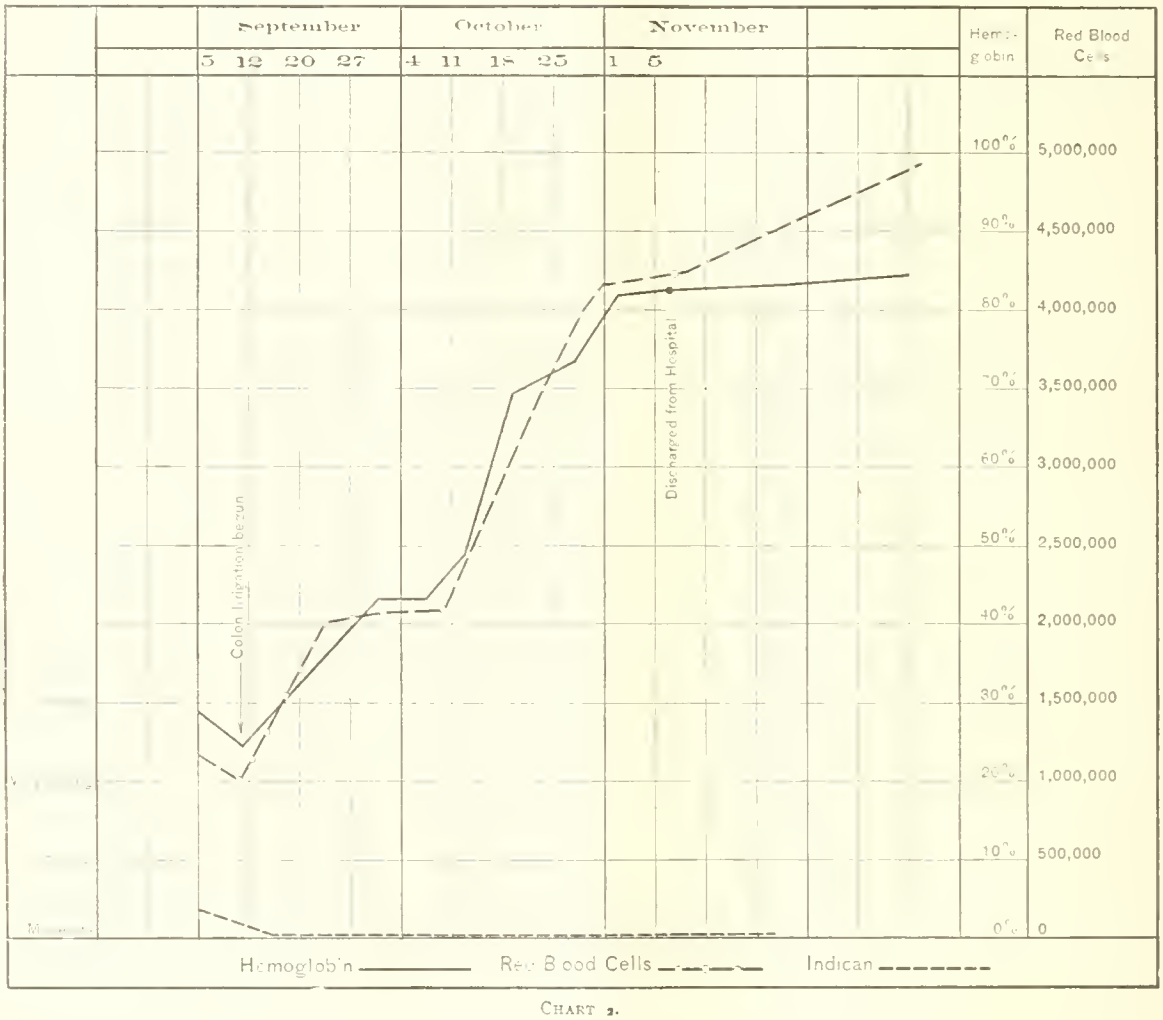

CHART 2.

On September 8, after slight diminution in the hemoglobin and red blood cells, colon irrigations were commenced. The trace of indican disappeared. The albumin was diminished to a faint trace in four days and disappeared in a week. Reference to the accompanying chart will show clearly the marked improvement in this man's blood condition.

On the 5th of November he left the hospital feeling perfectly well. One month later he had gained ten pounds in weight and his blood condition continued to improve as shown by the chart.

That these cases have been permently cured it is impossible at this time to say. It is evident, however, that since the introduction of the treatment by colon irrigation in these cases more marked improvement was obtained than by any other method employed. It is also evident that the fact that two

very severe cases of anemia of the pernicious type have been restored to perfect health and a normal blood condition by high colon irrigations, would seem to imply, for these cases at least, the absorption of some toxic substance from the bowel as a causative agent.

The practical difference between the old and more recent results is no more striking, however, than that between some of the older and newer theoretical conceptions upon which the therapy is based. This is very well illustrated by the fact that while in former times it was taught by some of the most prominent men of the time that the more food the patient could take the better, in the view of modern developments as emphasized by Herter, smaller amounts are better, especially of proteid food. For any excess of proteid food reaching the part of the intestinal canal occupied by the proteid splitting anaërobic bacteria of the lower bowel, simply furnishes material for subsequent decomposition into toxic and hemolytic substances as the result of bacterial activity.

The great value in the discovery that such a condition as pernicious anemia can be so benefited by removing intestinal bacterial matter lies in the fact that it emphasizes the possibility of attacking other obscure diseases on the same ground. The agency of bacteria in disease seems to be well appreciated when they occur in contact with the surface of the body, in the oral or genitourinary or respiratory cavities. Even the deleterious effect of the absorption of the products of the activity of nonpathogenic or saprophytic bacteria is appreciated when occurring within the uterus, to produce a sapremia. Yet few seem to appreciate what a great amount of absorption must occur where the area of absorption is as great as that of the intestinal mucosa, or what a diversity of chemical products, many the result of bacterial activity, present themselves for absorption. It is, however, of extreme importance to recognize this diversity of chemical products, many of which in conditions of health may not be toxic, but under conditions of slight impairment of the detoxicating or oxidizing action of the liver or intestinal mucosa, or when acting through long periods of time may be responsible for many of our unsolved symptom complexes of disease.

We take pleasure in expressing to Drs. A. D. Mittendorf, L. Hutton, and W. W. Herrick of the medical staff of St. Luke's Hospital, to Drs. F. Girard, C. Vail, and C. E. Lieb of the pathological staff of St. Luke's Hospital, and to the staff of Dr. Herter's laboratory, our appreciation of the assistance which they have rendered. To Drs. V. H. Norrie, T. C. Janeway, and the late Drs. G. A. Spalding and A. A. Davis we are indebted for the use of notes on the first case.

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THE ELECTRIC PSYCHOMETER.

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In Pflüger's *Archiv für Physiologie*, 1890, Prof. J. Tarchanoff published a paper on "Galvanic phenomena in the human skin in connection with irritation of the sensory organs, and in various forms of psychic activity." Like many discoveries of great importance, his remarkable work lay buried for years. Only lately has the full import of his experiments begun to be realized. They deserve a recapitulation here. The apparatus used was the minor galvanometer of Meissner and Meyerstein. The deviations of the mirror were noted by means of a telescope upon a scale three meters distant from the galvanometer. The scale was divided on each side of the zero point into 50 cm., and these again into millimeters. The galvanometer was so sensitive that the nerve-stream of a frog's sciatic nerve sufficed to deviate the mirror to such extent that all the divisions on the scale vanished from the visual field. Tubular unpolarizable electrodes of clay were brought into contact with the skin by means of hygroscopic cotton pads 10 to 15 cm. long, saturated with saline solution. The electrodes were applied at different times to various parts of the body, such as the hands and fingers, feet and toes, face, nose, ears, and back. The results obtained were as follows:

Light tickling of the face, ears, or soles of the feet with a camel's hair brush or a feather produced, after a latent period of one to three seconds, a deviation of the galvanometer to the extent of the whole 50 cm. of the scale. The same results were obtained by irritating the skin with a faradic brush, by applying hot and cold water, and by pricking with a needle. The other senses—hearing, smell, taste, and sight—responded in the same way on the

galvanometer scale when similarly irritated. The experimenter thus discovered that the irritations themselves were not necessary, but that their presentation to the imagination also sufficed to induce the same deviations of the mirror of the galvanometer. Furthermore, he found that the recollection of some fear, fright, or joy, in general any kind of strong *emotion*, produced the same result. The next point of interest brought out by Tarchanoff was that ordinary abstract mental exercise, such as multiplication, had no effect upon the galvanometer, unless accompanied by exertion. He also found that the emotion of expectation or anticipation deflected the galvanometer. Tarchanoff explained the phenomenon observed as due to a secretory galvanic stream connected with the sweat-glands. He was probably unaware himself of the extraordinary value of his briefly described piece of work.

His report remained unnoticed for seven years, until Sticker (*Wiener klinische Rundschau*, 1897, Nos. 30-31) again brought the subject into medical literature, if not to the attention of medical men. He repeated the experiments of Tarchanoff, and came to the conclusion that the capillary system of blood-vessels was a factor in the perturbations of the galvanic current, by changing the conditions of resistance. He opposed Tarchanoff's idea of a centripetal excitation of a secretory stream, because he found that the same deviations in current were to be observed when the electrodes were applied to anesthetic and analgesic areas (functional or organic).

Five years more passed before this interesting topic again appeared in literature. Sommer of Giessen (*Beiträge zur psychiatrischen Klinik*, 1902, p. 157) made experiments in the same direction, but seems to have failed altogether to grasp the really important feature of the situation, losing himself in details of a physical character. At the same time he arrived at the erroneous conclusion that, except for a reaction on tickling, no psychic influence on the current was to be established with certainty. He observed fluctuations which he ascribed to changes in contact between skin and electrodes, and to changes in resistance of the skin. Any apparent psychic influences he thought due to involuntary muscular contractions inducing increased pressure on the electrodes. He therefore missed the one essential point.

About two years ago E. K. Müller, an electrical engineer at Zurich, read a paper before the Swiss Society of Natural Sciences, Medical Section (1904), on "The Influence of Psychic and Physiological Phenomena Upon the Electrical Conductivity of the Human Body." Happening to make certain experiments upon himself in relation to the resistance of the human body in the alternating magnetic field, he rediscovered the extraordinary variability of the mirror-galvanometer under psychic or nervous conditions, as established by Tarchanoff fourteen years before. Mr. Müller then induced Dr. O. Veraguth, a neurologist of Zurich, to experiment on the same lines. Veraguth gave the name "galvanic psychophysical reflex" to the phenomenon, and he published the results of his researches in the *Archives de Psychologie* (Geneva), in August, 1906. Veraguth employed the Deprez-d'Arsonval mirror galvanometer, nickel-plated brass cylinders for electrodes, a feeble current, a horizontal glass scale on which a light reflected from the mirror registered its movements, and an apparatus for photographic registration of the curve. Veraguth corroborated the findings of Tarchanoff. One or two of his experiments are especially striking. If the individual under observation is read to, deviation is noted when passages of particular interest are reached, that is, when accompanied by any emotional tone. Or, if a series of unselected words is pronounced, a test suggested to him by Jung of Zurich, the words associated with an emotional complex produce an effect upon the galvanometer, whereas others without emotional tone have no effect. Veraguth concludes from his studies that only such irritations as are connected with sufficiently intense and actual emotional tone produce a galvanometric deflection. He states in his report above mentioned that he is not yet in a position to explain the phenomenon, but if it is to be explained by simple change in resistance, then it presents manifold contradictions to our present conceptions of the resistance of the human body. He felt it not to be due to changes in the quantity of blood in the hands of the individual experimented upon, for the phenomenon occurs whether the hands be emptied of blood by an Esmarch bandage, or overfilled with blood by artificial venous stasis. Veraguth excludes the participation of perspiration in the effects, for the results he found to be similar after drying the hands with formalin.

In the Psychiatric Clinic at Zurich, under the direction of Prof. Bleuler, Dr. Jung has of late been studying the relation of the galvanometric deviations to psychic processes, and in conjunction with Dr. Jung, Dr. L. Binswanger has been experimenting upon the physical and physiological problems connected therewith. In a forthcoming number of *The Journal of Abnormal Psychology* of Boston, Dr. Jung has an article upon association experiments in which he employed the galvanometer, and the apparatus and curves obtained are therein illustrated. Dr. Binswanger's paper is not yet published. Both of these gentlemen placed at my disposition all of their own work and conclusions, as well as the apparatus of the laboratory, and Dr. Jung and myself have gone over together many experiments with the instrument in normal individuals and in cases of dementia præcox, while I have reported with both of them some of the physical and physiological experiments. Dr. Jung and I are now using the galvanometer in these cases, together with Morey's pneumograph and reaction time apparatus for kymographic curves with various irritations, both sensory (pricking, noises, and the like) and psychic (series of words and questions which are either indifferent or calculated to induce emotions or arouse emotional reflexes). This work involves so much study and detail that it will be some time before it is published.

As far as the physical side of these galvanic reactions is concerned, the problem cannot be said to be solved, but Drs. Jung and Binswanger have certainly excluded some of the alleged causes, viz., muscular contractions and variations in blood supply, and their conclusion so far is that the cause is probably a variation in resistance, depending upon changes in the amount of secretion in the sweat-glands. They consider that the formalin experiments are not sufficiently certain to exclude the perspiration theory.

The apparatus we are using is a Deprez-d'Arsonval mirror galvanometer; and a horizontal glass scale (made in Zurich) placed about one meter from the galvanometer (divided into centimeters and millimeters), to which a lamp is attached. The light shines upon the mirror, and is reflected back upon the scale, on which the ray of light travels to and fro like a magic finger, marking the fluctua-

tions in the organism of the individual experimented upon. We usually put the galvanometer into circuit with one or two Bunsen cells and a rheostat to reduce the current if necessary, the patient's hands making contact upon copper plates on clasping nickel-plated brass electrodes. Sometimes no cells at all are used, but the patient places one hand upon a zinc plate and the other upon a carbon plate, these plates with the warm, moist hand sufficing to produce a current. But like results may be obtained simply with monopolizable electrodes as established by Tarchanoff and corroborated by Jung and Binswanger (with another species of galvanometer). By an ingenious mechanism devised by Dr. Jung, the movements of the finger of light upon the scale may be registered in curves on the drum of the kymograph. The manner of contact with the body makes no particular difference in the phenomena; whether in the manner just described, or by water electrodes, or whether by thimbles placed upon the fingers and connected with the theophores.

Now, I am going farther than my conservative Swiss friends, in proposing the name "electric psychometer" for this apparatus, but it is a name that I feel sure, from my own observations, is warranted, and that it is a remarkable adjunct to work in normal and morbid psychology is not only already assured, but will ere long be firmly established. One is, in fact, overwhelmed with astonishment at its manifestations, as this ray of light glides to and fro in response to the emotional changes going on within an organism.

There are minor oscillations, which practice and observation exclude, due to the usual familiar factors which modify resistance, such as hot and cold, and dry and moist skin, varying surface of contact, and varying pressure, but these are, as stated, minor movements, and do not interfere, when understood, with the extraordinary deflections in connection with the emotions. These emotions must be actual and real. The emotion of expectant attention or anticipation (as in the threat of a needle-prick or apprehension of a noise) has a voluntary influence on the psychometer. There is usually a latent period of one or two seconds before the deviation begins, after the irritation has occurred, but the latent period is reduced by the intensity of the emotion aroused.

It is almost like sorcery to observe the behavior of the instrument with a series of words, some purposely chosen to be emotionally indifferent and others to strike some emotional complex deep in the soul of the individual experimented upon. The patient is required to respond to any word uttered with the first word that comes into his consciousness. Indifferent words produce no effect upon the finger of light in the psychometer, but words associated with an emotional complex send the light along the scale for a distance of one centimeter up to six or eight or more, in proportion to the intensity and actuality of the emotion aroused.

Using these series of words is like fishing. Each word is bait on a hook thrown into the sea of the unconscious, and the species of fish that likes the bait is immediately caught and brought to the surface. This method of study of associations in the mind of man, so effectually carried out by Jung before the discovery of this new instrument of precision, is now doubly efficient in that the emotional value of each word may now be *seen* and accurately recorded.

I have not observed anything thus far in my *Studienreise* that has interested me quite so much, and I felt that I should at once place the matter before my colleagues as a new field for their research, a new avenue by which to approach the secrets of the nervous system.

A FEW REMARKS ON MEDICAL EXPERT TESTIMONY.*

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PROBABLY there is no subject in the medical curriculum which is so much neglected as medical jurisprudence, and no branch of it so little considered as that which deals with medical evidence. As a result the graduate begins practice with practically no knowledge in this direction, and, if he be lucky, may go through life without being placed in a position to regret his lack of learning; on the other hand, he may at any moment be called into court as an expert witness, and in the hands of a clever lawyer may be made the object of ridicule. Remembering this, it would seem that an occasional paper on some branch of the subject is not amiss, and so I shall ask you to bear with me while, out of the many, I try to point out a few of what seem to me important phases of the question. This I will do under the following headings:

(A) Compensation of the medical expert.

(B) Points referring to the attitude and rights of the doctor while on the witness stand.

(C) Especial points in trials involving the question of insanity.

(D) The value of medical expert testimony as now introduced.

Before going further it will be necessary to make clear the difference between a witness, as to fact, and an expert witness, since the laws which govern these classes are widely different.

A witness as to the fact is one who sees, hears, or knows either actual facts connected with the case at issue, or facts from which legal inferences applicable to the case may be drawn. This witness, whether ignorant or learned, poor or rich, young or old, must give evidence when called upon, and should he refuse to answer questions which the court rules proper to be answered, he is liable to be punished for contempt of court.

An expert witness is one who, through especial study or experience, is particularly instructed in some art or trade, and may give his opinions on questions of science or skill relating to such art or trade.

Now, since every business or employment which has a particular class devoted to its pursuit is an art or trade in the legal sense, it can be readily understood that a medical man, when called upon to give his opinion evidence connected with his profession, is an expert witness.

(*A*) *Compensation of the Medical Expert.* In civil actions the question of compensation rarely arises since the attorneys usually call upon the witness and make a definite business arrangement with him regarding his fee. In criminal procedures compensation is a common cause of misunderstanding and trouble, and in such cases I strongly advise medical men to demand their fee before going on the witness stand and giving their opinion evidence. In spite of the fact that the common law has established the understanding that the professional opinion of a physician is to be regarded in the light of property, and that the scientific or expert witness must be paid just as the merchant is paid for

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his wares or the farmer for his crops, still in many States he is offered the common witness fee, and is told he must be satisfied with that or nothing. Where the doctor has contested the matter it has been found that the court opinions for and against extra compensation are about equally balanced, and that should he claim an exception exists exempting him from the general rule which requires all witnesses, on the payment of the fee allowed by statute, to testify as to matters within their knowledge, then the burden is on him to establish the exception.

Another and interesting phase of the subject of compensation, and one which often comes up, is as follows: A doctor sees, for instance, an assault in which a man's leg is broken, and is subpœnaed to give evidence as to what he saw. During his examination the attorney directs his questions to obtain opinion evidence concerning the natures, causes, and effects of fractures. In this case there is no question as to the witness having to testify as to what he saw, but he can and should positively refuse to give his opinions relative to fractures unless he receives especial compensation as an expert witness. This holds equally good in civil actions, such as street car accidents, etc.

(*B*) *Points Referring to the Attitude and Rights of the Doctor while on the Witness Stand.*—While we know that there are many physicians and surgeons who, through association with railroads, mills, accident insurance companies, etc., are cool and self-possessed while on the witness stand, still the average practitioner looks on such an experience with a certain feeling of dread; hence I feel that I may draw attention to a few points which may be of use in this regard.

(1) Let the witness at all times remember that he is, by virtue of his diploma, an expert opinion witness, that he is in court to express his own opinions irrespective of any author or authority to the contrary.

The tendency on the part of attorneys is to borrow or buy numerous supposedly authoritative works, and to study them diligently over night. They come into court full of what they conceive to be medical knowledge, but, as a rule, knowing less than before they burned the midnight oil in cramming up for the trial. Knowing this, a doctor need not fear their attacks, and by maintaining a cool and quiet demeanor he will in the large majority of cases come out right in the end.

(2) Let him always keep in mind that he has an inalienable right to explain any answer he may give, even though it be simply "yes" or "no." By keeping this in mind he will often be able to set at naught the efforts of an attorney to make him stultify himself.

(3) Let him at all times be ready to frankly acknowledge ignorance should he be ignorant on any point. Anything like evasion will at once be noticed by the attorney, who will do his best to show ignorance, and will enlarge on it to the discomfiture of the witness. This he will do, even though the subject of the question be trivial, irrelevant, and immaterial since his object is to belittle the doctor in the minds of the jury, and thus lessen the value of his other testimony.

(4) Let him always, when asked, freely acknowledge that he is paid for his services. It is an axiomatic fact that the laborer is worthy of his hire, and, though the lawyer always tries to show that by being paid a witness is biased, still a frank statement that one is paid for his time and skill will never weaken a man's status before any court.

(7) He should avoid as far as possible the use of technical terms, and, if it is necessary to use them, explain their meaning in plain English.

(9) Let the witness always remember that should he feel that an attorney has gone too far, and has become insulting, he may turn to the judge and request his protection against such insult. In the experience of the writer this has never failed to have an immediate effect.

(10) Let the witness go on the stand with the absolute promise to himself that he will not lose his temper, for the lawyer takes great delight in trying it sorely.

(11) Let him never permit himself to becoeme so biased that he will allow himself to avoid an honest answer to any question, even though the question is asked by the attorney on the opposite side, and may seem to be against the best interests of his own side.

(12) On answering the usual hypothetical question asked by the lawyers, let him thoroughly understand it, and, should it be needful, let him explain his answer should he think that such answer places him in a false light before the court.

(13) No medical man should ever allow himself to be drawn into a trial where he is in doubt as to the real merit of the case from a medical or surgical point of view.

(C) Especial Points in Cases Involving the Question of Insanity.—My remarks under this heading are directed to the question of the criminal responsibility of the insane. It would take volumes to go into the discussion of the subject of insanity in all its medicolegal aspects.

In trials where the question of soundness of mind is the issue a complicated condition of affairs generally results, and, while the jurors are the final judges, the physician is always called to aid them by the expression of his opinion, and by giving them the benefit of his experience and study. The reason for these complications is not far to seek since the view point of law and medicine is entirely different.

No well-balanced medical man would attempt to unqualifiedly define insanity. The very definition that it is a disease of the mind naturally leads to the question, "What is the mind?" And even such an authority as Herbert Spencer frankly states that he does not know. In order to be able to definitely state the nature of insanity, it would be first necessary to define the meaning of the word sane. This is practically impossible, since it is a conventional and approximate term applied by use and custom to a class of individuals who think and act in a certain way regarding themselves, and toward society at large. While a distinct departure from this standard would easily be established as insane, who would venture to draw a distinct line between sanity and eccentricity, or between eccentricity and insanity? We all can say "this is day," or "this is night." Who can say "here day ends," "here night begins." There is the twilight, which is neither day nor night, but in part both, and which cannot be described or defined. Oftentimes so it is with the change from sanity to insanity. Gentlemen in our profession, there is no such thing as an absolute definition of insanity. Each case must be taken and studied as a separate entity, and frequently the most careful study leaves the physician in doubt.

On the other hand, it would seem necessary to have a legal definition of insanity, since the insane cannot be held responsible for their acts, and since insanity is very frequently used as a plea in the defense of prisoners who have committed criminal acts.

Out of the multitudinous efforts to reach a satis-

factory understanding, there has been evolved the following postulates: (1) A sane individual can distinguish between "right" and "wrong" in the concrete case; (2) he is possessed of will power adequate to control his impulses, and to control them in the light of that knowledge of right and wrong. The law presumes a man to be sane according to this standard.

From these postulates the law has constructed a definition of insanity, which holds good in most of our States, and which is as follows: "A man or woman is insane who does not know the difference between right and wrong in regard to any specific particular act, and who further does not know the consequences of committing such act." The question must be relative to the particular act done, and the accused's knowledge of the situation in which he did it. Did he know it was wrong at that moment? Was he impressed with the consciousness of guilt and the fear of punishment? If he did not he is insane according to the law.

It is easy to see from what I have said that no physician could possibly agree with this legal definition of insanity and that were it applied to a large proportion of the inmates of our State asylums, they must be held to be sane. For instance, witness the insane patient who knows that it is wrong, and against the laws of the institution, to smoke in the wards, who knows that he will be punished if he does it, and who still, with great cunning and forethought, plans his smoking to escape detection by the officials of the hospital.

In closing this portion of my paper, I wish emphatically to advise the medical witness to refuse at all times even to attempt to give a general definition of insanity.

As to the legal definition, it is purely a matter of personal opinion whether he approves or disapproves of it. No matter what the doctor may think to the contrary, the legal definition stands as the law, and is not question for argument. The jury will decide whether the case at issue fits it.

(*D*) *The Value of Medical Expert Testimony as Now Introduced.*—Expert testimony is no more conclusive to the jury than the testimony of witnesses as to fact, and no matter how learnedly a doctor may descant upon a technical point, the jury has a perfect right to accept or reject any or all of the evidence given by such opinion witnesses. However, judges will as a rule instruct juries that expert evidence, if from a high source, and if delivered without bias and with proper caution, must be given great weight. For my own part, I beg to say that medical expert testimony as now introduced can, in the large majority of cases, be of little value, and for these reasons: There are few men who, when employed in the interest of an individual or a corporation, can resist the tendency toward bias, and I have actually seen cases where such witnesses have sworn to opinions to which in their calmer moments, when free from bias, they could not have given their support. Again, it is almost laughable to hear the flat contradictions which occur where medical experts are put on the stand by contesting parties, and it must lead the intelligent mind to formulate a very poor opinion of our profession. Certainly were I on a jury which had to consider such evidence, I should give it little or no weight. Further, since to be a doctor is a sufficient ground to establish a man as a medical expert witness, one can easily see how a graduate of a two-year irregular college, with a glib tongue and a positive and convincing manner, can, by contradicting it, cause a jury to practically throw out the opinion evidence of a weighty authority who is not blessed with the ability to express himself with force and clearness.

But, gentlemen, expert medical evidence could be made of the greatest value in forwarding justice were it properly introduced. May I suggest two perfectly feasible plans: (1) Let the attorneys of each side select two experts, and let the four thus chosen agree on a fifth. These five men could, after careful deliberation, bring in a full and useful report on any technical points placed before them. Or (2) leave the matter entirely in the hands of the court, who could call one or a dozen medical men to elucidate, with absolute freedom from bias, any technical points which might arise in a trial. I incline strongly to favor the court having the control, since it would entirely do away with the possibility of partisanship, provided always that the court is what it should be—learned, dignified, and absolutely impersonal. Under this rule the very best men in the ranks of the medical profession would always be ready and glad to give their services, instead of shunning the courts on account of the false position in which they are so frequently placed by the warring attorneys.

Lawyers may urge that my plan places too much power in the hands of the judge. I do not think so. The more responsibility and power vested in the judicial office the more readily will the man sink his own personality and rise to a full appreciation of the grave, dignified, honorable nature of the position which the people have called upon him to occupy, and the confidence placed in him will be a sacred and inviolable trust which nothing could cause him for a moment to forget.

VARICOSE VEINS OF THE LOWER EXTREMITIES AND THEIR TREATMENT.*

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In order to discuss intelligently the surgical treatment of varicose veins of the lower extremities, we must admit that all treatment, in order to rise above the plane of mere empiricism, must rest upon a threefold conception: (1) of the etiology of the disease, (2) of the pathology of the disease, and, finally, (3) of its natural tendency, or a foreknowledge by which a cure may be accomplished. These principles will apply with special pertinency to the treatment of varices, and before we can expect to treat the disease rationally we must first know its cause and then its inevitable course.

Without going into unnecessary detail, it will suffice to know that the causes of varicose veins may be divided into predisposing and exciting. The valves of the veins play an important part in the etiology of varix, and in this relation their great variability in number, position, and development is to be noted. In the internal saphenous vein, the valves vary in number from seven to twenty. One of these valves is situated just at the termination of the vein and another at the outer side of the cribriform fascia, but both of these valves are sometimes imperfect or absent. The valves of the external saphenous vein vary in number from nine to thirteen. In relation to the backward pressure in the saphenous vein, it is to be noted that the femoral vein, above the entrance of the saphenous, and the external iliac vein are frequently, and the superior vena cava constantly, devoid of valves. Soboroff has demonstrated that the veins vary in thickness

*Read before the New Haven County Medical Association, October 25, 1906.

and strength in different individuals from birth. When a vein with weak walls has few valves, the tendency to varix is increased; and when the vein wall is of average strength, if the valves in the vein are few in number, this condition alone may act as a predisposing cause. That is, with few valves, each segment of the vein between the valves will have to support a longer column of blood than would be the case if the valves were more numerous and nearer together. In consequence the strain will be greater upon both the valves and the vein walls, and should an exciting cause occur, the veins or valves would have to yield to the increased blood pressure. These factors of inequality in vein strength and inequality in the number of valves play an important part in the asymmetry of varix. It is also important to remember that any exciting causes which produce increased intravenous pressure tend to the production of varicose veins. The affection is seldom seen in youth, but is very common in middle and advanced age. According to Billroth, women are more apt to suffer from varicose veins than men. The disease in this class of patients arises from interference with the free return of venous blood from the obstruction offered by physiological or pathological enlargement of the uterus. The venous obstruction caused by tight garters is also a factor in the production of this lesion.

Occupation plays an important part in the production of varicose veins. Those whose occupation keeps them habitually upon their feet are apt to suffer. There also seems to be an hereditary influence which predisposes to this condition. Members of the same family, through several generations, will often suffer from varicose veins. Gravity increases the intravenous pressure, and its effects are most marked at the lower end of the blood column.

The first pathological condition in varix is the permanent localized dilatation of a vein. Veins which are so affected are said to be varicosed, and present an enlarged, elongated, tortuous, and knotty condition. The superficial veins of the lower extremity are those most commonly involved, the internal saphenous and its branches being most often affected. The deep veins are usually free from the disease, though Verneuil says that varix is as common in the deep-seated as in the superficial vessels (Bryant). Recent observers, however, do not entertain this view, particularly Borden, who claims that when the deep veins are involved they are usually secondary to superficial varicosities, but occasionally the communicating branches between the deep and superficial veins may be affected, and a varix is not infrequently observed at the point. The disease begins with the slow dilatation of a vein. It is not only enlarged transversely, but is also elongated, and as the ends of the vein are fixed points, the increase in length causes it to become very tortuous. In other cases, dilatation is most marked, and elongation does not occur to any great extent. The coats of the involved veins are morbidly thickened, the endothelial coat presents longitudinal striæ, and in long-standing cases atheromatous changes or calcification may sometimes be observed. The external coat is also very much thickened by reason of connective-tissue infiltration and inflammatory new-formation, to which the name periphlebitis is attached. The valves are shortened, or often disappear, and become insufficient to support the column of blood. As a result of increased exudation of serum in the perivascular and lymph spaces, the lymph channels are unable to carry away the excessive exudate and edema occurs in the immediate neighborhood of the varix. From these observations it will be seen that a varix may arise from the local insufficiency of a vein, or from an excessive blood pressure within a vein, or from a combination of these factors. It will also be seen that a varix is at the beginning generally localized and confined to one or several parts of a vein; that it is usually a progressive disease, and that the disease condition is apt to continue or extend until the whole vein and its branches are involved. These factors are of importance from the standpoint of treatment, in that, considering the tendency of a varix to increase, the necessity for interference in the early stages of the trouble becomes evident. Through swelling of the limb, pain, soreness, and a feeling of fatigue in the affected member, a small varix will frequently produce great discomfort and almost incapacitate one for manual labor. Inflammation and thrombosis are not infrequently complications of varices. Ulcers occurring in connection with varicose veins are often spoken of as varicose ulcers, but the relation of the ulcers to the varices seems to be rather accidental than casual. One of the greatest dangers to the patient suffering from varicose veins is the danger of sudden rupture which usually follows a scratch or a bruise over a thinned portion of a vein. The bleeding is profuse, and unless checked may cause a fatal termination.

In view of the foregoing clinical facts, what, may we ask, would be the indication for treatment? The subject, however, seems to resolve itself into two important questions: Shall we resort to palliative treatment, which offers temporary relief only; or shall we have recourse to operative measures by which a permanent cure can be obtained? We believe the latter plan of treatment is the only one worthy of our consideration, and the choice by election regarding the operative procedure will depend entirely upon the form, character, and duration of the varicosities involved. It is generally conceded by the profession that the lower extremity is more accessible to thorough manipulation than any other portion of the body. Therefore we are sometimes at a loss to comprehend why patients thus afflicted are neglected in general practice, unless it be out of respect to tradition, or the dread of sepsis. Surgical interference in varix was so disastrous in preantiseptic days that the traditional timidity that still obtains to a certain extent and has been a potent factor in preventing the more general use of rational measures, is in part accounted for. With the safeguards of modern aseptic methods this attitude should no longer be maintained. In fact, the milder forms of the disease, in which palliative treatment is usually the only measure thought of, are frequently the very ones in which operative treatment should be adopted. The course of the disease is so generally progressive that this characteristic of the trouble is one of the most important reasons for early surgical interference. By doing away with the trouble before the entire main trunk and its branches have become involved, extension of the disease may be prevented, as well as the necessity for a large operation in the future.

While with Dr. Arpad G. Gerster at Mount Sinai Hospital in 1896, the writer had a favorable opportunity to observe a large number of cases of this nature and he arrived at the conclusion that it was not alone the greater degree of surgical skill and dexterity that determined one's success in the management of such cases, but what appeared to be a factor of equal importance in this, as in many other operative procedures, was the aseptic precaution necessary to be carried out before, during, and after manipulation. Asepsis, once mastered, soon be-

comes a matter of routine, and is the key to rational measures, which will invariably lead to successful results.

Of course, in preantiseptic days, the surgical manipulation in operating on varix was not infrequently followed by septic infection, with the resulting endophlebitis extending along the vein and causing inflammatory changes in the intima, which led to thrombosis and obliterative phlebitis. In aseptic ligation the changes ought not to occur, and the obliteration of the vein can be accomplished only by placing the ligatures so close together—not more than two inches apart—as entirely to obliterate the vein as a blood channel. The operation of multiple ligation is a simple one, only requiring care in regard to the asepsis and in so placing the ligatures as not to include the nerves which accompany the vessel. The writer has performed this operation in a number of cases with gratifying results, and believes it ought to be resorted to in cases of localized varices in which the more elaborate measures of partial or complete excision are contraindicated, or where the patient will not submit to an operation of magnitude.

In a certain number of cases, with involvement of the main trunk of the vena saphena magna, the greatest dilatation is always situated just above the valves. The latter are often destroyed or rendered incompetent and cause the vessel to support a column of blood extending from the lowest dilatation to the heart. In such cases, high ligation or the operation of Remi and Trendelenburg may be resorted to. Ligaturing the vessel relieves it of the pressure of the column of blood below the point of tying, and permits the restoration of vascular tone. In doing this operation, G. Perthes recommends excision of a short portion of the vein between two ligatures, thereby preventing reestablishment of the patency of the vessel, for Minkewitsch has shown that no restoration of a vessel can occur after a portion of it has been excised. Most modern surgeons, by reason of the etiology and pathology of varix, do not consider Shede's operation a proper procedure, as the damage it does to the nerves and the uncertainty of cure make it of doubtful propriety in any case.

The surgeon has his choice of a number of operative procedures. In certain selected cases he must have recourse to Phelps's operation, partial excision, or to the still more radical method of complete excision. The writer first performed the latter operation six years ago in the case of a woman 35 years old, who was rendered almost a practical invalid by reason of an aggravated form of varices of both the internal and external saphenous veins, which communicated with the deeper vessels, and which was made more complicated by a large ulcer on the interior surface of the leg, a condition which existed over a period of eight years. The patient had submitted to all manner and forms of palliative treatment and was informed by reputable physicians that her condition could not be cured. The internal and external saphenous veins were dissected out, ligated, and excised. The patient made an uneventful recovery. Shortly afterward she secured a position which necessitated considerable activity on her part and has continued to perform her duties without the least return of her former trouble.

Influence of Chocolate and Coffee on Uric Acid.—René Fauvel declares that the methylxanthins (theobromine and caffeine) of chocolate and coffee distinctly increase the urinary purins, but not uric acid, and they prevent its precipitation by acids. Their influence, especially that of theobromine, is far more favorable to the organism than that of the purins of meat and of the leguminous vegetables which give a large proportion of uric acid which is easily precipitated. These conclusions concern alone the actions of theobromine and caffeine on uric acid and the urinary purins and not their influence on digestion, circulation, or the nervous system.—*Gazette des Hôpitaux Civils et Militaires.*

Early Electrical Treatment of Acute Poliomyelitis of Children.—Ezio Luisada has treated 170 cases of acute poliomyelitis of children in the hospital at Florence, and states that the results of treatment are much better when the electrical applications are begun as soon as the fever has passed over. He believes that it is a distinct disadvantage to wait as long as is commonly done before beginning electrical treatment. Patients are rarely seen in the stage of invasion, and the diagnosis is difficult before the paralysis appears, which is after the fall of temperature. The period of regression begins in from one to three weeks. When the inflammation lessens, and the hyperemia of the spinal cord, with its compression and injury has passed away an electrical examination should be made, and mild applications of electricity begun. With the indifferent electrode on the brachial plexus or the lumbosacral region the current does not pass near the inflamed spinal cord, and no injury can be done to it. Children in whom the treatment is begun in from fifteen to thirty days from the beginning of the illness, recover more quickly and more thoroughly than those in whom the applications are delayed. The progress of the patient is affected by the season of the year, spring being most favorable. Cold weather with its poor circulation prevents repair. In very young children the nervous centers are not yet developed, and the destruction of certain portions may be replaced by new development of other regions. If the muscles and peripheral nerves be kept in good condition by electricity, they will be ready to respond when the centers are regenerated.—*Annali di Elettricità Medica e Terapia Fisica.*

Murphy Button.—A procedure that is used by many surgeons in order to shorten the time required for securing the Murphy button in position is referred to by Gelpke. Murphy's original direction was to make a purse-string suture and to incise the center of the circle so outlined for the introduction of the half of the button. Instead of this, the slit through the gut may be made first, the button slipped into place, and then fastened by a single interrupted suture at each side. To prevent the button from dropping into the stomach instead of into the intestine in gastroenterostomy, a silk thread four inches long and attached to a small metallic ball may be tied to the intestinal half of the button.—*Correspondenz-Blatt für Schweizer Aerzte.*

Scorbutic Symptoms Caused by the Bacillus of Eberth.—Giovanni Arpa Auverny describes a rare hemorrhagic form of typhoid, in which all the symptoms were much more suggestive of scurvy than of typhoid fever. The fever had not the typical curve of typhoid, rising to 40° for five days, and then remaining at 38° for five days, after which, accompanied by a hemorrhagic eruption over the entire body, it rose again to 40°, and remained at about that until the patient's death on the eighteenth day of the disease. There were no symptoms connected with the digestive tract, but after death there were found multiple ulcerations of Peyer's patches. There were at no time hemorrhages into the intestine, but there was epistaxis, swelling, sponginess and bleeding of the gums, and hemorrhage from vagina and bladder. Examination of the blood showed the presence of short bacilli, which proved to be the bacilli of Eberth. The condition was one of scurvy caused by the typhoid bacillus. The author believes that the bacillus exerted its influence mechanically, and by its presence in the blood, rather than by its poisonous products.—*La Riforma Medica.*

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FORMIC ACID IN DIPHTHERIA.

THE signal success which has marked the introduction and employment of diphtheria antitoxin has led to a feeling of such general satisfaction that very little effort has been made in recent years to improve or add to present methods of treatment. It must be admitted that the mortality has been reduced within a comparatively short period to a remarkable extent: and yet the disease works much havoc, for if not immediately fatal, the after-effects in many instances are such as to cause much alarm. Toxemia is the word which will best define the cause of these sequelæ as well as that of death itself, and it is in the treatment of this condition that enlightenment is very greatly desired. It would appear that a sufficiently powerful dose of antitoxin administered at an early stage of the infection, so that the toxins could be antidoted before the tissues would be devitalized or degenerated, would comprise the proper conception of perfect treatment. Such is probably the case, but so varied is the individual reristance that we have no means of knowing what the exact antitoxic gauge may be in any given case.

The three main complications which are met with in the course of the disease are cardiac failure, paralysis, and renal involvement, of which the more important are paralysis and cardiac failure. Apart from the local treatment and the administration of antitoxin, the method hitherto employed has been one of stimulation, mainly by strychnine, strophanthus, and digitalis. The main action of these is to raise the blood pressure by increasing the cardiac force, contracting the arteries, and in lesser degree stimulating the vasomotor centers in the medulla and cord. It has been shown that these drugs are not ideal, for they increase the amount of work required of a heart which already manifests a tendency to degeneration. As a substitute for these measures, Croom (*Edinburgh Medical Journal*, October, 1906) calls attention to the value of formic acid and the formates, the stimulating properties of which are not attained at the expense of the blood pressure. Their action is muscular, while their effect is much more lasting. Clement and Huchard have already shown that formic acid is a powerful stimulant of striped muscle, and also improves the appetite and general nutrition. In concentrated form the drug produces a rise in blood pressure, but in the form of a 25 per cent. solution the increase is so slight as to be of comparatively no importance, even in advanced arteriosclerosis. The formates also possess a diuretic action, and in sclerosis of the kidney have been found to exert a marked influence in diminishing albuminuria.

From this experimental evidence it would appear that formic acid and its salts might be of considerable value in diphtheria, and the statistics of one hundred cases presented by Croom seem to bear out this fact. All the patients received the 25 per cent. formic acid solution in 5 to 20 minim doses for ten to fourteen days after admission to the hospital (the Edinburgh Fever Hospital). Otherwise the treatment was the usual one for diphtheria, including the use of antitoxin. This series of cases was compared with an equal number which were treated in previous years without the formic acid. The death rate from cardiac failure was apparently reduced from 8.6 per cent. to 2 per cent., and some of these cases had shown evidences of such cardiac involvement as to warrant a very bad prognosis. In the two patients who died the toxemia was profound before the first administration of the drug. The main features in all the cases were the marked regularity of the pulse, even after a previous irregularity had been present, and a noticeable improvement in the general nutrition, which points to a successful combating of the toxemia. The number of instances in which paralysis occurred was very small, only 3 per cent., so that, considered with the other favorable factors, we seem to be quite safe in concluding that in formic acid we have a remedy which is worthy of more extended trial.

NEPHRITIS OF PRENATAL ORIGIN IN THE YOUNG.

NOTWITHSTANDING all that has been done to discover the etiology of the nephritis of pregnancy, we are still far removed from a solution of the problem. And this uncertainty also extends to our knowledge of the changes which take place *in utero* in the kidneys of the fetus in cases in which the mother is suffering from any one of the many manifestations of renal diseases. That some definite relation exists between these conditions is shown by scattered reports of observers who have found a tendency to nephritis in several generations. The appellation "heredity" will hardly serve to account for these phenomena, and "hereditary tendency" is also insufficient. It seems reasonable to assume that in certain cases these lesions may be instituted during fetal life, or, as expressed in a recent article by Gillmore in *Surgery, Gynecology, and Obstetrics*, November, 1906, "the lesions in the fetal kidney occur because the toxins in the nephritic mother have damaged the kidneys of her fetus" before the latter has been born.

In support of his claim, Gillmore refers to the pathological examinations in fetuses from eclamptic mothers in which distinct evidences of renal lesions were found. In some the kidneys showed a necrosis of the cellular elements, in others well-marked acute nephritis was present, and in none was there any doubt of this fact. There may be some ground for doubting that a fetus whose kidneys are comparatively passive during uterine life, dying before or soon after birth of an eclamptic or uremic mother, succumbed to the direct results of its own nephritis. This has no bearing, however, on the assumption

that it is possible for an antenatal impairment of the kidney to occur. Gillmore claims that the latter is an important factor in producing an early postnatal form of nephritis.

The fact has frequently been referred to in recent years that there are many more instances of insidious affections of the kidneys in the very young than was formerly believed. In many of these it is of course impossible to know in what condition the mother's kidneys were before the birth of the child, and it therefore can only be surmised how far she may be responsible for the damaged kidney in her offspring. But in view of the knowledge of such a possibility, the careful, conscientious, routine examination of the urine of every pregnant woman becomes more than ever a solemn duty, for not only are we dealing with important disturbances in the mother, but also with a probable renal involvement in the fetus.

This brings us to the question of therapeutics, and it is here that Ballantyne's views on prenatal treatment will find an appropriate application, for, admitting the possibility of fetal nephritis in every instance of maternal renal disease, the former may be influenced by treatment directed to the mother. If this does not prevent, it may at least modify nephritic lesions in the fetus. The subject is one of extreme interest, and further investigations should be instituted for the purpose of a better understanding of this important matter.

"RACE SUICIDE."

Our strenuous and versatile President deserves well of his country in that he has provided topics without end for discussion in the newspapers, clubs, and debating societies. The Panama Canal, the negro problem, universal peace and general war, trusts, railroad rebates, pure food, political expediency, labor combinations, race suicide, the civil service, spelling reform are only a few of the innumerable questions he has sprung from time to time upon the attention of the expectant nation—and he has still two years of activity. Such is the diversity of these subjects that no class of the community is without something to discuss. Among the topics of special interest to medical men, as well as to reformers in general, is that of "race suicide," by which is meant the restriction of child bearing. When this was first broached the country accepted the pronouncement with acclaim, and anathema was the man who dared affirm that a large family was anything but a blessing. The quiver was there and it must be filled, and blessed was the man who filled it. The fact was not recognized, however, that this question, like that of spelling reform, was one of sentiment *versus* natural law, and that no presidential bull could settle it.

There are two factors at work in the reduction of the birth rate—one artificial, the other natural. It is, of course, a deplorable fact that the number of children in some families is kept down by artificial means of prevention, but this cuts a small figure in the general falling off in the birth rate; the real factor and the one that counts is a normal sterility due to the working of Nature's law. This has been well put by Major Charles E. Woodruff in an article contributed to a recent issue of the *New York Times*. The writer recalls the well-known fact that in all living things, whether plants or animals, the number of progeny is directly proportional, in the long run, to the risks to which the young organism is exposed during the period preceding maturity, and also to the normal length of the reproductive life of the particular species. In order to maintain an equilibrium there must be an effective birth, that is a birth of an individual which will reach maturity, for every death—no more, no less. If conditions change so that more of the offspring of any two individuals reach maturity than Nature intended or expected, there will be overcrowding and the result will be a weakening of the species and a reduction in its reproductive power. Man can thwart Nature, in the case of the domestic animals, by protecting the young and supplying them with an abundance of nutriment, but he fulfills the natural law nevertheless by killing the superfluous young for food or restricting the increase by eating the eggs. The same is true in respect of the vegetable species cultivated by man.

In general, this natural law rules the human just as certainly as it does the lower animals or plants. In former times, and at the present day among uncivilized races, large families were the rule because all but the most robust of the progeny died of disease before reaching maturity and many adults died of violence as well as of epidemic disease. If the race were to survive, under those adverse conditions, the number of children must be large. With the advance of civilization came better housing, better feeding, and protection from violence and disease, and so the population tended to increase. But the increased luxury of modern times and the development of the intellectual side of man have conduced to bring about a proportionate weakening of the physical side and a lowered productiveness, aided in a comparatively slight degree, no doubt, by a voluntary restriction of child bearing.

The working of this law is still to be seen in the civilized world in the difference in the number of children born to the wealthy and to the poor. The birth rate varies, as a general rule, to which there are the usual exceptions, in direct proportion to social conditions. The very poor and the ignorant, those who live in misery and abject want, breed like rabbits and the poor children die like flies, but the birth rate among the wealthy and those of highest intellectual development is small. This is not always, indeed not usually, intentional, and there is many a couple living in luxury and with no material want unmet who would gladly give half they possess to have children to perpetuate their name. The artificial restriction of the family, so far as it is practised, is an evil and moreover entirely unnecessary so far as the race is concerned, for Nature will see to it that the world is not overpopulated. So far as the prevention of conception, and especially of the destruction of the fruit of conception, is concerned, the President is to be commended for declaiming against the evil, but such practices are less operative than he seems to believe. The declining birth rate in the higher classes of the community is Nature's work, not man's, and cannot be prevented by legislation or the writing of essays.

Postural Albuminuria.

Orthotic or orthstatic albuminuria is still one of the puzzles of physiological pathology. Many clinicians, such as Senator, do not attempt to differentiate the condition from other forms of so-called cyclical albuminuria which are evoked by physical exercise, diet, cold bathing, etc., whereas others endeavor to make of it a distinct clinical entity. Most authorities, however, agree in considering that if not directly due to a demonstrable renal lesion it at least indicates a functional incapacity of the renal filter, which sooner or later is likely to be followed by an actual nephritis. How largely theoretical what has so far been written on this subject really is is shown by the fact that Heubner (*Berliner klinische Wochenschrift*, January 7, 1907) states that until now no autopsy on a patient suffering from orthotic albuminuria has been reported. Unusual interest, therefore, attaches to the description which he gives of the clinical course and postmortem examination of a case of this affection occurring in a girl of ten years, who eighteen months after she first came under observation died as the result of a cerebellar tumor. The urinary condition was typical of postural albuminuria, the urine remaining perfectly normal as long as the child remained recumbent, but showing considerable amounts of albumin when she was up and about; casts were never present. At the autopsy the kidneys were found to be microscopically normal, and the microscopic sections, although they were searched through most carefully, revealed no changes, except such as Heubner considers are referable to the nature and duration of the terminal illness. These consisted in a well marked hyperemia of the small veins and of the capillaries, and in a slight degree of fatty degeneration of the parenchyma. In addition in one kidney a minute spot of atrophic kidney tissue was found, but the author expresses the conviction that these abnormalities had nothing to do with the tendency to albuminuria and that accordingly this condition may exist without there being any gross or microscopic renal lesion. An interesting point in connection with the case is the fact that the autopsy revealed evidence of an old pulmonary tuberculous lesion, although this had not been diagnosticated during life. French authors have pointed out that postural albuminuria not infrequently is a pretuberculous manifestation.

Influence of Thyroid Extract on the Development of the Embryo.

Clinical and experimental evidence is steadily accumulating to show what far-reaching an effect on metabolism must be ascribed to the thyroid gland. A novel suggestion emanates from Bleibtreu who, in the *Deutsche medizinische Wochenschrift*, January 3, 1907, describes the results obtained on administering thyroid extract to pregnant rabbits. Although the author's experiments are not yet terminated, sufficient work has been done to enable him to come to the conclusion that the effect of the extract is profoundly to modify the development of the embryo and apparently in some cases not only to prevent its development, but even to cause absorption of the newly formed tissues to take place. Bleibtreu presents his views somewhat as follows: Substances of mucoid or myxomatous nature normally are constantly being formed in the tissues, but are broken down again at about the same rate. This decomposition takes place in consequence of the action of a substance formed in the thyroid gland as is shown in the absorption of myxomatous material which takes place when thyroid extract is administered in myxedema. Such myxomatous substances are necessary, however, for the building up of the embryo, and therefore it is desirable that the action of these catabolic thyroid bodies should be inhibited at this period. Accordingly, during pregnancy there is a partial retention of thyroid products as is suggested by the swelling of the gland sometimes observed. In the same connection the author points to a somewhat similarly destructive effect on embryonic growth, which is manifested when the pregnant animal is subjected to the action of the Roentgen rays or to cholin injections, and he suggests that possibly these agencies may have the effect of stimulating this particular function of the thyroid gland. The possibilities suggested by this hypothesis are certainly very striking, even though they are as yet supported by but little actual evidence, but the profound influence on metabolism that thyroid extract is capable of exerting, in obesity for example, seems to justify an attitude of reserve in considering a theory that appears even as fanciful as this.

Distention of the Bladder with Oxygen.

Radiographers have discovered that by injecting oxygen into joints that are to be examined by means of the Roentgen rays, especially the knee joint, the distention produced enables more satisfactory pictures to be obtained than is the case under ordinary conditions. A somewhat similar suggestion is now made to facilitate the examination of the bladder by means of the cystoscope. Sometimes, notably when the bladder is very intolerant of distention, or when the urine is very turbid or there is a tendency to hemorrhage, it is difficult to secure a satisfactory view through the instrument when the bladder is distended with fluid. Nitze attempted to cope with this difficulty by injecting air instead of the customary boric acid solution, but abandoned the practice because of the possibility of producing air embolism or of causing infection by germs carried into the viscus with the admitted air. Burkhardt and Polano (*Münchener medizinische Wochenschrift*, January 1, 1907) hit upon the idea of employing oxygen for this purpose, because its use would be free from the two objections just mentioned, and on trial they found that another supposititious drawback, that of lessened clearness of the cystoscopic picture in the absence of fluid, did not exist. The oxygen was generated from peroxide of hydrogen by the use of potassium permanganate and was therefore sterile. Its introduction into the bladder was found to be much less uncomfortable to the patient than the use of fluid, especially in cases of vesical irritability. If the gas is admitted slowly and only to the point of moderate distention as evidenced by the patient's feelings, no danger to the bladder need be apprehended, and the heat of the electric bulb of the cystoscope is also not found objectionable. Roentgen ray photographs of the bladder distended with oxygen were found much more satisfactory than those made when the organ was distended with fluid, and the authors regard the method as a distinct advantage in making radiographs when the presence of calculi is suspected. They even go so far as to suggest that more satisfactory radiographs of renal calculi may be obtained by slightly distending the pelvis of the kidney with oxygen admitted through a ureteral catheter.

The Etiology of Epilepsy.

Among the many causes assigned for the production of epileptic seizures considerable interest attaches to the theory which ascribes the condition to the presence in the blood of a toxin. An Italian investigator, Ceni, injected the blood serum derived from epileptic subjects into other epileptics and found that the injections were without effect or produced symptoms of acute poisoning. Injections made with blood from healthy subjects had absolutely no effect on epileptic patients. Ceni concluded from this that the blood of epileptics contained some toxic material and claimed that by continued injections immunity against this particular poison could be obtained. In some of the patients the clinical symptoms became worse, but in the majority he claimed to have obtained a beneficial effect. Schuckmann, writing in the *Monatsschrift für Psychologie und Neurologie*, Vol. 19, No. 4, says that he has subjected the serum from epileptics to a similar series of tests and obtained results completely in opposition to Ceni's, for in no instance was any specific reaction obtained. In this instance Ceni's theory seems effectively contradicted, and it therefore fails to offer any solution of the problem of the etiology of epilepsy of which a satisfactory explanation is still desired.

Radiotherapy in Trachoma.

Among novel methods for treating this form of conjunctivitis attention may be called to a suggestion made by Dinger in the *Wiener klinische Wochenschrift*, No. 42, 1906, who employs radium bromide for this purpose. Five milligrams of the salt was enclosed in a glass capsule two millimeters in diameter, and this was fastened to a small hard rubber rod. At first the radium was applied for one minute at a time twice a week, and later the time of application was extended to ten minutes. A well-marked reduction in the granules could be noticed after a few sessions, and no injury to the eye occurred. Among sixteen cases treated by this means a complete disappearance of the evidences of the disease resulted in seven. The younger the patient the quicker the effect was obtained. When a complicating pannus was present a longer term of treatment was required, but here also a cure resulted. Among the advantages which favorably distinguish this method of treatment from others which are at present employed are the ease and painlessness of application and the fact that it can be carried out without confining the patient.

The Frequency of Tuberculosis.

Statements as to the relative frequency of tuberculous disease in the human subject vary within wide limits. This is particularly evident in an examination of autopsy statistics. Heller and Orth, for example, find tuberculosis present to the extent of from 27 to 35 per cent. in 8,770 cases examined by them, while Naegeli and Burkhart, in a series of 1,546 cases, place it at 91 to 98 per cent. Although there is little doubt about the frequent occurrence of this disease, figures so enormous as these last can hardly be accepted without restriction. In a recent article on this question in the *Zeitschrift für Hygiene und Infectiöse Krankheiten*, Vol. 50, Kraemer states, and with truth, that it is hardly fair to base our conception of the frequency of tuberculosis on autopsy statistics of this character. Both Naegeli's and Burkhart's figures were obtained from the larger public institutions and industrial centers in a class of the population in which tuberculosis is particularly prevalent, and the results cannot therefore be applied to the race as a whole.

The Mentally Unstable in Illinois.

According to the biennial report of the State Board of Charities of Illinois, there are 58,000 mentally unstable persons in Illinois who are likely, under the stress of life, to become insane and be added to the wards of the State. The chapter of the report dealing with the new State psychopathic institute at Kankakee gives the first authoritative estimate of the number of "unstables." A careful attempt has been made to approximate the number of people in Illinois who are rated as mentally and nervously normal, but who are predisposed to insanity. Then follow the figures of the board, basing the estimate on those who are unstable because of hereditary weakness, or those with habits, such as the unwise use of alcohol, morphine, cocaine, etc., and those who suffer from certain infections. "This figure (58,000)," the report continues, "is a minimum. Twelve thousand of them are now in institutions. Probably there are more than 58,000 such persons in Illinois who today are productive members of society in some way. It is little short of calamitous that American medical education has not equipped the general practitioners to recognize the early symptoms of insanity in these unstable persons and give proper treatment in the early hopeful stages preceding and immediately following the onset of nervous and mental breakdown."

News of the Week.

Officers of the Medical Society of the State of New York.—At the annual meeting of this society, held in Albany this week, a report of which is presented in another column, the following officers were elected: *President*, Dr. Frederick C. Curtis of Albany; *Vice-Presidents*, Dr. Julius C. Bierwirth of Brooklyn; Edward Torrey of Olean, and Nelson G. Richmond of Fredonia; *Secretary*, Dr. Wisner R. Townsend of New York, reelected; *Treasurer*, Dr. Alexander Lambert of New York, reelected.

Public Lectures on Problems of Insanity.—The second lecture of this series, arranged for by the Psychiatrical Society, will be delivered by Dr. August Hoch (of Bloomingdale Hospital) at the Academy of Medicine, on Saturday evening, February 2, 1907, at 8.30 P.M. The subject will be "The Manageable Causes of Insanity," concerning which Dr. Hoch will present the modern facts and views. The aim of these lectures is to arouse in the public a sound interest in questions of mental hygiene, and all interested in sociological work are invited.

The Section on Public Health of the New York Academy of Medicine, after having been discontinued for eleven years, has been reorganized. The first meeting was held on January 8, when various problems relating to the health of New York City in the past and present were discussed by Drs. J. G. Bryant, and H. M. Biggs and Mr. Geo. A. Soper. The next meeting will be held on February 12, the subject being "Disinfection." Papers will be read by Dr. R. T. Wilson, in charge of disinfec-

tion, Department of Health, New York City; Dr. A. C. Abbott, Chief of Bureau of Health, Philadelphia, Pa., and Dr. L. E. La Fetra, New York City. All physicians and others interested in the subject are cordially invited to attend. Dr. John S. Billings, Jr., is Chairman of the Section.

Report of the State Lunacy Commission.—The annual report of the State Lunacy Commission shows that at present there are in the State institutions 28,302 patients, and there was during the last year an increase of 5,701 in the number of insane in the State. The report states that 1,468 patients were discharged as recovered, while 1,142 had recovered sufficiently to resume a life of unrestraint. The State last year expended $5,722,429 in caring for the insane, which was at the rate of $353 per capita, including salaries of employees and medical attendance. The so-called after-care system inaugurated by the State Charities Aid Association has been found very successful, and a definite plan has been adopted by this organization for looking after patients discharged from State hospitals in order to tide them over the first period of stress to which they are subjected upon resuming life in the community. The needs of the metropolitan district are made the subject of a special recommendation, for the State's lease of Ward's Island expires within the next six years, and the commission requests an immediate appropriation to provide a site for entirely new establishments. The commission specially favors the extension of the plan of farm colonies in connection with the existing State hospitals and speaks highly of the results of treatment at such of the hospitals as have these rustic adjuncts. Excellent results in the treatment of tuberculosis in the new sun pavilions recently erected at Binghamton and Ogdensburg are reported. The commission also makes a special plea for appropriations to permit the construction of nurses' homes on the grounds of the three State hospitals. Each of these homes is designed for 150 nurses and is estimated to cost $75,000. The commission reports the finishing of the large nurses' home at the Kings Park State Hospital, which now accommodates 200 employees of this class.

A New Child Labor Bill.—An effort to meet some of the objections to the Beveridge child labor bill has been made in a measure, introduced by Senator Simmons of North Carolina. This bill makes it unlawful for an interstate carrier to transport from the State of production into another State products of a mine or factory in which child labor is employed or permitted to work in violation of the child labor laws of the State in which the factory or mine is situated. The bill differs from the Beveridge bill in that it does not undertake to make a Federal child labor law, but recognizes the child labor laws of the several States and seeks to make them effective. It is based upon the idea that nearly all the States have child labor laws and that they are largely ineffective and will remain so as long as they can only be enforced by local prosecution for their violation.

Medical Legislation in Hawaii.—Dispatches from Honolulu state that the local medical association is endeavoring to have the legislature enact a law requiring all examinations for licenses to practise medicine to be taken in English. This movement is said to be the result of the granting of a license to a Japanese physician. The law as proposed is not aimed specifically against the Japanese, but as these constitute the preponderance of foreign candidates, the intention is clear.

Appropriation for Medical Inspectors in Chicago.—This city has appropriated $15,000 for the appointment of one hundred additional inspectors to cope with the epidemics of scarlet fever and diphtheria. The health department publishes figures relating to the results of school inspection, as regards diphtheria and scarlet fever. There was at first a gradual falling off in the number of cases of scarlet fever and diphtheria following the appointment of additional inspectors, but an increase in the violence of the scarlet fever epidemic has since occurred, 407 new cases of the disease having been reported on January 29.

St. Lazare Prison of Paris to be Torn Down.—The famous prison of St. Lazare, which has been one of the historic landmarks of Paris, is to be pulled down and its site to be covered with open squares and fine modern buildings. St. Lazare, as its name indicates, was built as a leper's hospital in the eleventh century, but on the disappearance of the disease from France was converted into a religious institution and later into a prison for women.

Behring's Tuberculosis Cure.—Prof. Behring is taking the first steps toward making his method of antituberculosis immunization available for general use. He calls his remedial agent tulaselactin, and has instituted a course of lectures and practical demonstrations to illustrate its method of administration. The courses are being followed by medical officers of tuberculosis sanatoria throughout Germany, and for all who seek to employ the new treatment attendance is an essential condition because Prof. Behring intrusts the preparation only to those who have qualified under his own supervision. The cable states that Prof. Behring is on the verge of a nervous breakdown and will soon enter a sanatorium for treatment.

Red Cross Aid for China.—The Red Cross officials announce that $17,000 has been collected for the China famine fund, and that of this amount $5,000 has been cabled to the American consul at Shanghai. It is also planned to send 5,000 bushels of wheat to be used for the spring planting.

Smallpox on Shipboard.—Owing to the presence on board of a case of smallpox the steamer *Gallia*, which arrived last week from Mediterranean ports, was detained at Quarantine and fumigated, and all the passengers who had been exposed were vaccinated.

Surra in the Philippines.—The Department of Agriculture is making great efforts to prevent the introduction into this country of surra, which is common among the live stock in the Philippines. As it is considered possible for an insect to convey the infection even after an animal has been found healthy on being taken on board of the vessel in which it is to be shipped, the department has forbidden the sending to this country of any animals from the Philippines, and even the pet dogs of officers are considered as coming under the ban.

Nitric Acid from the Atmosphere.—It is announced in the London papers that Sir William Crooks, in conjunction with some of the scientists of the University of Freiburg, has succeeded in discovering a process by means of which nitric acid may be extracted from the atmosphere in such a way as to make it available for commercial, industrial, and agricultural purposes.

Quick Professorship of Biology.—Dr. George H. F. Nuttall has been appointed to the Quick Professorship of Biology, University of Cambridge,

England. The chief duty attaching to the chair is the advancement of the study of "protozoa," especially such as cause disease.

Dr. Alfred Wiener has been appointed attending surgeon in the aural and laryngological department of Sydenham Hospital.

Stony Wold Sanatorium.—At the annual meeting of the managers of this institution held last week, under the presidency of Mrs. James E. Newcomb, it was stated that of the 193 patients treated in 1905 at Stony Wold 113 were discharged and 80 remained at the close of the year. The receipts were $111,463 and expenditures $107,000. There is $26,000 as a nucleus for a permanent endowment fund. Many improvements have been made and a model dairy supplies milk at three cents a quart in summer and four cents in winter. Mr. John D. Rockefeller and Mr. Anson F. Flower have each made a conditional offer of $12,500 if the institution succeeds in paying off its indebtedness, amounting to about $30,000, before March 1.

Dedication of the Ossining Hospital.—The formal dedication of the New Ossining Hospital took place on January 22. The new building, which cost $100,000, was erected in memory of the late Helen Ward Potter by her husband, Frederick Potter, a son of the late Congressman Orlando B. Potter of New York, and his sisters, Misses Blanche and Martha Potter, and Mrs. Walter Gerr.

Jewish Hospital for Deformities and Joint Diseases.—This institution has just been opened in this city. In connection with the regular hospital work there will be a course of lectures to teachers, instructing them in the causes of this class of diseases. They will also be instructed how to recognize the early symptoms of deforming diseases, so that the children may receive treatment during the earlier stages. The physician and surgeon in chief and chief of clinic is Dr. Henry W. Frauenthal of 783 Lexington avenue.

Maker of "Magic Boots" Acquitted.—After a trial lasting two weeks, in which large numbers of witnesses were called by both sides, the jury before whom the case of the so-called "magic boots doctor" was being tried handed in a verdict of not guilty. The defendant had claimed to be able to cure a long list of diseases by means of electrical and other curative properties alleged to be contained in boots which he sold at very high prices.

The Harlem Eye, Ear, and Throat Infirmary.—The secretary of this institution, Dr. C. B. Meding, states that there are several vacancies on the staff of assistants in the infirmary. Clinics are held daily from 2 to 3.30 and 6,000 patients are treated yearly. Those interested are requested to apply at the clinic, 144 East 127th street.

Indian Territory Twenty-third District Medical Society.—At the regular annual meeting of this society the following officers were elected for the coming year: *President*, Dr. Frank Bates; *Vice-President*, Dr. A. S. Spangler; *Secretary and Treasurer*, Dr. L. S. Willour. There were twenty-five members present.

Androscoggin County (Me.) Medical Association.—At the annual meeting of this association, held in Lewiston, it was voted that the minimum fee for life insurance examinations be fixed at $5. The officers were elected as follows: *President*, Dr. C. E. Norton; *Vice-Presidents*, Dr. H. H. Purinton and Dr. E. S. Cummings; *Secretary*, Dr. D. A. Barrell; *Treasurer*, Dr. B. F. Sturgis.

Dodge County (Neb.) Medical Society.—At the annual election of officers for this society, the following were chosen at the recent meeting held in Fremont: *President*, Dr. J. J. Metzinger, Fremont; *Vice-President*, Dr. Tandy Wigglesworth, Hooper; *Secretary*, Dr. A. P. Overgaard, Fremont; *Treasurer*, Dr. E. W. Martin, Fremont.

Union County (Ark.) Medical Society.—At the recent meeting of this society at El Dorado, the following officers were elected: *President*, Dr. Jno. Moore of Lisbon; *Vice-President*, Dr. S. E. Thompson; *Secretary*, Dr. J. B. Wharton; *Treasurer*, Dr. J. M. Sheppard.

Nashua (N. H.) Medical Association.—Officers were elected as follows at the annual meeting of this society held last week: *President*, Dr. Albert E. Brownrigg; *First Vice President*, Dr. Joseph A. Charest; *Second Vice-President*, Dr. James S. Black; *Secretary*, Dr. Eva M. Locke; *Treasurer*, Dr. Arthur L. Wallace.

Memorial to the Late Dr. Macdonald.—At a recent meeting of the New York Psychiatrical Society a memorial notice of the death of Dr. Alexander E. Macdonald, presented by Drs. Carlos F. MacDonald and William Mabon, a committee appointed for the purpose, was unanimously adopted and ordered to be spread upon the minutes of the society. The notice was in part as follows: "Alexander E. Macdonald, LL.B., M.D., a member of the New York Psychiatrical Society, died December 10, 1906. For thirty-five years Dr. Macdonald had been intimately associated with the insane. He commenced the study of medicine at Toronto University and was graduated M.D., Medical Department, New York University, 1870; LL.B., Law School, New York University, 1881. Lecturer upon Medical Jurisprudence in 1874; subsequently, Professor of Medical Jurisprudence, Professor of Psychological Medicine and Medical Jurisprudence, and was Emeritus Professor at the time of his death. House Physician, Hospital for Epileptics and Paralytics, Blackwell's Island, 1870; chief of staff, Charity and Allied Hospitals, Blackwell's Island, 1871. Resident Physician, New York City Asylum for the Insane, Ward's Island, 1874. Medical superintendent of the same from 1874 to 1904, the title of the asylum having been changed in the meantime to Manhattan State Hospital, East, Ward's Island. In 1901 he established the tent treatment of the tuberculous insane, removing them from all communication with any unaffected patients. Dr. Macdonald was one of the most distinguished alienists of this country and a man of striking force of character. His far-seeing powers, his unswerving integrity, and his great executive ability qualified him in an extraordinary degree for his responsibilities. At all prominent medical meetings his activities were conspicuous. His commanding presence and lofty sense of duty will always be remembered by those who had the privilege to be acquainted with him, and his pupils in all parts of the country will pay many tributes to his memory. The Psychiatrical Society desires to spread upon the minutes this tribute to the memory of their late associate."

(Signed) C. MACFIE CAMPBELL, M.B.,
Secretary.

Obituary Notes.—Dr. ARNOT SPENCE of this city died on January 26 at the age of forty-two years. He was graduated from the Bellevue Hospital Medical College in the class of 1884. He was a surgeon in the Ninth Regiment and was visiting physician to St. Joseph's Home for Consumptives.

Dr. Charles W. Townsend of New Brighton, S. I., died on January 27 as the result of injuries received at the hands of a supposed burglar who entered his house the night before. Dr. Townsend was a graduate of the College of Physicians and Surgeons in 1890, and also of the School of Mines of Columbia University. He was vice-president of the Richmond County Medical Association and was a prominent figure in medical affairs on Staten Island.

Dr. Henry A. Le Barbier of Larchmont, N. Y., died of erysipelas on January 21 after an illness of about six months. Dr. Le Barbier was a native of this city and was fifty years of age.

Dr. Joseph Manning Cleveland of Poughkeepsie, N. Y., died on January 21 of pneumonia. He was born in Charleston, S. C., eighty-two years ago and received his medical degree from the College of Physicians and Surgeons in 1850. He was superintendent of the Hudson River State Hospital from 1867 until 1893.

Dr. Robert W. Gray of Boston, Mass., died on January 19 at the age of seventy-one years. He was born in Paris, Me., and received his medical degree from Bowdoin Medical School. He served in the Civil War and had practised in Pittsfield, Mass., and Kennebunk, Me., and for the last twenty-five years had been a resident of Boston.

Dr. Benjamin Hubbard of Plymouth, Mass., died on January 12 at the age of eighty-nine years. He was born in Holden, Mass., and received his medical training under the tutelage of his brother, Dr. Levi Holden of Plymouth and in the Westminster Medical College. He began practice in South Weymouth in 1844, but later removed to Plymouth, where he has resided ever since. About fifteen years ago he retired from active practice.

Dr. T. E. Nott of Spartanburg, S. C., died on January 9 at the age of seventy-six years. He was graduated from the South Carolina Medical College of Charleston in 1852 and began practice in Union County. He served as surgeon in the Confederate service through the Civil War, and in 1873 he removed to Spartanburg, where he practised for over thirty years.

Dr. Adam Shirk of Oakland, Cal., died on January 13 at the age of sixty-six years. He was a native of Pennsylvania and had been assistant superintendent of the Harrisburg (Pa.) Hospital for the Insane and assistant superintendent of the State Hospital for the Insane at Austin, Tex., before coming to California twelve years ago. For the last five years he had been superintendent of the Alameda County Infirmary.

Dr. Carl P. Proegler of Fort Wayne, Ind., died on January 16 of apoplexy at the age of seventy years. He was a native of Germany and served as assistant surgeon in the Franco-Prussian war. In 1877 he came to this country and located in Fort Wayne. He was prominent in medical circles and served for a number of years as secretary of the Allen County Board of Health.

Dr. Franz Kuckein of San Francisco died of appendicitis on January 10 at the age of fifty-four years. He was born in Danzig, Germany, and received his degree from the University of Munich. In 1888 he came to this country, and, after practising for a time in Oakland, he removed to San Francisco in 1891. He was consulting physician to the German Hospital, and in 1901 organized the German-American League of California, of which he was the president for three years.

Dr. William F. Hovey of Bay City, Mich., died suddenly on January 18 at the age of eighty-two years. He was born in Warsaw, N. Y., and received his medical education from the Cleveland Medical College and the University of Michigan. In 1865 he was detailed to the military hospital at Louisville, and later settled in Fenton, Mich., but removed to Bay City in 1876.

Dr. E. L. Wemple of San Francisco died suddenly on January 15 at the age of fifty-nine years. Dr. Wemple was a native of Jamestown, N. Y., and had practised in San Francisco since 1889. He was attending physician to the Clara Barton Hospital, of which he was president at the time of his death.

SEVENTH HARVEY SOCIETY LECTURE.

The seventh Harvey Society lecture was given at the Academy of Medicine on Saturday, January 26, the speaker being Prof. E. B. Wilson of Columbia University. The subject of the lecture was "Recent Studies in Heredity;" but this, the speaker said, was really too broad a title as he intended to devote himself to certain phases only of this interesting subject.

In the study of heredity three principal methods had been followed. The first of these was the statistical, which consisted in recording observations on a large number of variations, etc., as they occur in nature. Perhaps the best work of this description was that embodied in Galton's "Law of Ancestral Inheritance." The second method was the experimental. This consisted especially in crossing different types and observing the effect of this on the progeny. While there was little doubt that the same rules held for the crossing of pure bred forms, it had been found to be far simpler to study the crossing of hybrids, for then the different characters could be easier observed. The best studies along these lines were embodied in the work of Mendel, the formulator of the well-known Mendelian law. It might be mentioned in passing that the Mendelian phenomena were probably not so general as at first thought; they were extremely valuable, however, in having given us a new view of the subject. The third method, and the one to which the speaker had devoted some attention, was the indirect one, in which attempts were made to follow out the physical aspect of the subject from the side of the germ cells.

Before going on to the subject of this lecture proper, Prof. Wilson said it would be well to review briefly some of the more prominent facts in Mendelian heredity. One of the most important advances was made with the recognition of "unit characters," the transmission of which was absolutely different from "blending." A great many characters were blended; the result of crossing a negro and a white person was a mulatto. In many characteristics, however, inheritance was by means of unit characters instead of blending. In these the hereditary properties behaved as though they were material bodies. Prof. Wilson here exhibited several mice to illustrate the point in question. In the first jar was an ordinary wild gray mouse; this had been bred to the white albino mouse shown in the second jar. The result of this mating was shown in the third jar, and was a hybrid, looking just like the gray parent. Not a trace of white was visible, and yet within this gray hybrid the white of the other parent was latent. On breeding two such gray hybrids there were a pure white mouse and three gray ones. This white offspring was spoken of as a white "extracted" mouse. The result of breeding a large number of the gray hybrids

of the third generation resulted in pure white mice and gray mice in the proportion of 1:3. If several characters were taken the result while more complex was still quite mathematical. This was typical "Mendelian Inheritance." By a close study of the subject it had been found possible to work out in advance what the result of certain breedings would be, just as a chemist could predict by a study of his formula what the result of a chemical reaction would be.

The principle underlying the Mendelian law was very simple. When two characters were put together in a hybrid, *e.g.* G and W, the formation of the germ cells in this hybrid, was such that the characters were again taken apart, half the germ cells being G and the other half W. This was true both for the eggs of the female and the sperm of the male. When these hybrids then were bred we had the following possible combinations:

GG, GW, WG, WW

And as G (gray) dominated over W (white) this meant that there were three gray offspring to one white.

Although this was the essence of the Mendelian law, recent developments had shown that the subject was not quite so simple; certain qualifications were necessary. It would lead too far afield, however, to go into these, and so the speaker would go on to the subject proper.

It was now everywhere admitted that the physical basis of heredity was contained in the nucleus of the combining cells. In the nuclei, then, must be contained the unit characters, which we had just seen behaved almost as if they were material bodies. Now it had been found that the nucleus of the egg or of the sperm contained bodies, the history of which actually ran very close to that of the unit characters. These bodies were the chromosomes. These appeared in the fertilized egg and whenever the cell divided partook of this division. They were, therefore, the lineal descendants of those present originally in the fertilized egg.

Until recently it had been thought that all chromosomes were alike; now this was known not to be the case. One of the most striking differences was one in size. Disturbances of the chromosomes were followed by disturbances in the progeny, *i.e.* monsters were produced. It was therefore believed at present that the chromosomes were of a complex organization and that they had within them the various factors of heredity. It was thought, for example, that the part played by one of the smaller chromosomes was different from that played by one of the larger ones. The chromosomes were always in a double series, though this series was not often complete. It had been found, for instance, in the germ cells of the squash bug that those of the female contained 22 chromosomes, while in the male there were only 21. The double series just alluded to was now regarded as being made up of chromosomes respectively from the male and from the female parent, *i.e.* half from the egg and half from the sperm. There was considerable evidence for this assumption, and quite recently Prof. Monkhaus, by crossing species whose chromosomes were of different size and therefore readily distinguishable, had succeeded in tracing the two kinds of chromosomes throughout a considerable period of development.

Prof. Wilson then showed, by means of diagrams, how these cytological studies offered an easy explanation of the Mendelian phenomena. At a period just before the germ cells were formed the chromosomes paired. This process was called synapsis. This was followed by a cleavage or "reduction," as it was called, in which the maternal and paternal chromosomes again separated. As a result half of the germ cells were maternal in origin and half were paternal. The same held true of the sperm cells. On pairing it could be shown that this gave results which agreed mathematically with the Mendelian law. The speaker then reviewed and pointed out which of the foregoing were proved facts and which probably were pure assumptions.

These cytological considerations also offered a satisfactory explanation of certain forms of inheritance which did not conform to the Mendelian law. Blends, for example, could be explained by assuming that in the process of synapsis the pairs of chromosomes fused so closely as actually to become one. The germ cells resulting would then have those characters blended whose chromosomes had so united.

In closing the speaker said that if these conclusions possessed any considerable amount of truth they would probably be of great interest to physiologists and pathologists. The physiologist would be compelled to recognize that in the nucleus he was dealing not with one set of protoplasm, but with many different ones. To the pathologist the subject might prove applicable to the subject of tumor formation, for, as already stated, disturbances in the chromosomes resulted in the development of monsters. At the present time, to be sure, the cytologist could not offer much help to the pathologist; he still had enough troubles of his own. Finally, the speaker said, he wished his hearers to know that in inheritance we were dealing not with vague questions, but with clear, concise mathematical problems.

Correspondence.

OUR LONDON LETTER.

From Our Special Correspondent.

HOSPITAL SUNDAY FUND—LIVERPOOL CHILDREN'S HOSPITAL—COUNTY COUNCIL'S HEALTH REPORT—THE DIET OF TO-DAY—SPINAL ANÆSTHESIA—OBITUARY.

LONDON, January 11, 1907.

The Lord Mayor presided yesterday at a meeting of the Council of the Hospital Sunday Fund, when the committees and honorary officers for the ensuing year were elected.

Yesterday the Duchess of Albany went to Liverpool and opened the new building of the Children's Hospital, provided by the citizens at a cost of £68,000. In the course of the proceedings Mr. Maxwell, president of the hospital, traced its progress from its inauguration in 1851, as the pioneer children's hospital, to the opening of the building now demolished in 1800, on to eight years ago, when it was decided to pull it down. Medical and sanitary experts were consulted, and the present site pronounced the best in the city for the purpose. The building comprises two pavilions with accommodation for 100 beds, an administrative block, an observation block, a nurses' home, and laundry. The corporation has granted £1,000 during the last five years.

The report of the Health Committee of the County Council has appeared, and contains the report of the Medical Officer for the county for the year 1905. The death rate for that year is the lowest on record. It has fallen from 21.0 to 15.1 per 1,000, or nearly 30 per cent. since the Public Health act for London of 1891. But a high infantile mortality remains. It is suggested that this may be in some degree due to a more complete registration of infants surviving their birth for only brief periods. There is, further, an increase in the number of deaths registered as premature, or with congenital defects, etc. Some support of this view is afforded by the fact that while social conditions, as measured by overcrowding, seem to govern infant mortality in several districts, this is not observable for the first few weeks of life—a fact perhaps due to the less complete registration of the newborn. The rate of mortality from phthisis in 1905 was only half that of the decennial period 1861-70. The mortality from cancer has been

practically the same for several years. The increase in the last twenty years of the nineteenth century is probably due to more precise diagnosis. The Medical Officer devotes considerable space to the subject of food inspection and the absence of regulations of meat markets and abattoirs, which it is hoped legislation will soon provide.

On Wednesday, Professor Halliburton lectured at the Institute of Hygiene on "The Diet of To-day." We have of late been strongly exhorted to return to a "simpler life," to weigh Carlyle's opinion on "low living and high thinking." The Professor seems to think it is time to put in a word on the other side, for he began by saying that it was certainly unwise to overeat. He was of opinion that it was safer to eat rather too much than too little. The least one could do with was not the best, for nature did not, as a rule, work to minimums. He would not accept Professor Chittenden's views to the full, for the minimum diet was not necessarily the optimum. The terms nitrogenous and nutritious were sometimes erroneously used as synonyms. The nonnitrogenous foods are as essential as the nitrogenous, though utilized in another way by the system. Milk is such a perfect food because it contains both classes of nutriment. But milk, when tampered with, as it often is in the preparation of infant foods, loses its perfection, some of its constituents being removed from it. The lecturer admitted that a large amount of the proteid food we take is not utilized for tissue repair, but is thrown out as waste material, at the expense of undue work for the digestive and excretory organs. No doubt the majority of well-to-do people sin on the side of excess, and a reduction in the consumption of meat and alcohol would be a feature of the diet of the future. The Professor then referred to the dietary of the poor in large cities and the low nitrogenous intake in vegetarian nations, and said he held that they show less resistance to privation and disease than meat-eating people. This conclusion will no doubt be questioned, but I leave the Professor to the vegetarians. He next pointed to the good effect of extra feeding in the open-air treatment of consumption and in the rest cure for various nerve diseases. He thought the limitation of proteid to subserve the repair of tissue waste would mean living dangerously near the margin, and he quoted Dr. Leathes as saying that in infants ten times the minimum quantity of nitrogen necessary to serve this purpose was provided by nature, even allowing for growth. The explanation of this apparent waste, he said, was that certain constituents of the proteid molecule are essential for building up the tissues, and the amount in the proteid molecule is very limited, so the body must put up with waste material. The large size of the liver appeared to him an express provision of nature for dealing rapidly with this waste material. The easy digestion of animal proteids rendered them superior to those of vegetable origin, and the so-called vegetarians recognized this by taking milk, eggs, cheese. This sort of vegetarianism would perhaps spread if bad cooking could be excluded, for badly-cooked vegetables were more indigestible than equally badly-cooked animal food.

The subject of spinal anesthesia was rather fully discussed last month at the Gynecological Society. Interesting papers were read detailing cases, and specimens of tumors removed under its influence exhibited. Dr. Macnaughton-Jones gave some account of what he had seen in the clinics of Heidelberg and Freiburg. As he observed, the method was introduced by Bier in 1899, who used cocaine—experimenting on himself and assistant (Hildebrandt). Results were not encouraging, but Tuffier, in France, followed up the plan, and in 1900 reported 250 operations, 142 being laparotomies. In 1901, Hahn reported 1,708 cases, with 8 fatalities; Morton of San Francisco, 673. In 1904 Bier made the next advance by adding adrenalin and substituting stovain (first employed by Sonnenberg) for cocaine. Deenitz was associated with Bier in this work. From this time a host of workers have been reporting their experiences. Franz has had no death or serious symptoms in 180 cases. It is obvious that there are dangers to be reckoned with in this method, e.g. arrest of respiration from involvement of the medulla and motor nerves, collapse, spinal paralysis, sepsis, all of which have been fatal. The advantages claimed for this method are: avoidance of general anesthesia in cardiac disease and arteriosclerosis, also of the local and post-operative effects of chloroform and ether, as well as of the action of the abdominal muscles in laparotomies, etc. On the other hand, the disadvantages are vomiting (rather frequent), movements of the bowels in operations on the perineum, etc., insufficient narcosis at times, perhaps from rapid dispersion of the drug, collapse, respiratory paralysis, injury to motor nerves, headache, sepsis.

Dr. Swanton's paper detailed a case of hysterectomy for fibromyoma under spinal analgesia in a patient of 44. There was no pain except when the vessels in the broad ligament were seized preliminary to ligature. Then the patient felt a twisting and dragging, which also came on whenever the parietal layer of the peritoneum was drawn forward. There was also some nausea and straining. Peristalsis, too, came on and interfered with suturing, so A. C. E. was given. The convalescence was complicated with nausea and paralytic ileus requiring enemata of turpentine.

Mr. Charles Ryall's case was also one of hysterectomy, the patient aged thirty. During the operation the patient did not complain of actual pain, but when the uterus was drawn up said she felt something being pulled. She was nervous, had some vomiting, causing the intestines to bulge into the wound, and so making the operator wait until this passed off. The operation occupied forty minutes, and convalescence was uninterrupted.

Neither of these surgeons seem to regard the method with enthusiasm, but both consider it as useful in cases in which general anesthesia is contraindicated for any reason. Turning now to the discussion evoked, there was a good deal of agreement with this view. Mr. Canny Ryall said his experience extended only to thirty of forty cases, but he would not use a general anesthetic for operations below the level of the diaphragm when spinal anesthesia was available. In such a formidable operation as Kraske's he had had complete success with this method and no shock, although the patient was under the influence of the drug altogether for about six hours. Many operations on the lower limbs, appendix cases, and radical cure of hernia had been equally successful. The absence of shock impressed him most forcibly. He had also watched the effect on mucous membranes, and had seen no ill effects. Patients rarely suffered from sickness after novocain, and only a few had headache.

Mr. Spanton confessed he had no experience, but he gathered that 5 deaths had occurred at one of the foreign clinics, and at Freiburg, in 380 cases, 2 deaths—a very high rate of mortality. In most cases, too, vomiting was reported, and this is one of the drawbacks of general anesthetics in abdominal cases. He had not the dread of general anesthesia that some entertained.

Dr. Herbert Scharlieb, as an anesthetist, said stovain, novocain, etc., had come to stay. They were of great value, though they were only analgesic—not anesthetic. It might impede the operator, on the one hand, and increase shock on the other, for the patient to be aware of every touch. The objection to chloroform was its lethality, but he held that to be due to improper dosage. The present death rate of chloroform was 1 in 4,000, and up to the present that of novocain and stovain had been higher. He would avoid praising the new analgesics too highly as quite safe, or condemning them as dangerous.

Mr. B. Jessett (President) mentioned a case in which he performed appendectomy under spinal analgesia conducted by Mr. C. Ryall, when the pulse was observed by Dr. Swanton. It went at one time to 150, and the question was whether that was caused by the drug or by the operation, or the nervousness of the patient, who certainly seemed calm enough and was chatting all the time.

Dr. Giles congratulated Mr. Canny Ryall as a pioneer and told him not to feel discouraged if his colleagues waited further experience, for an open mind was the true scientific attitude.

Dr. E. A. Fardon died on the 2d inst. He was identified throughout his professional life with the Middlesex Hospital, to the service of which he gave all his energies. He was born in 1846. Some early years he spent in business, and entered the hospital as a student rather late. He took the double qualification in 1878-9, and then was appointed successively house physician, house surgeon, and obstetric assistant (resident). The resident medical officioship then became vacant and was offered him, and he held it for some thirty years, with the greatest satisfaction to all concerned. Indeed, many reforms in the hospital school were due to his initiative. All supporters of the Middlesex attribute much of its progress to the unwearied work of the late resident medical officer.

Surgeon-General R. C. Lofthouse, M.D., who died on Monday, entered the Army in 1854, and retired after thirty years' service. He was in the Crimean War and the Indian mutiny, was mentioned in dispatches, and was awarded several medals and clasps.

A New Retroversion Operation.—Freund suggests the following modification of some of the older procedures. The round ligaments of either side are shortened by a suture approximating two points a short distance from the inguinal and uterine attachments respectively: the loops thus formed are placed in front of the uterus, and are then sutured both to this and to the anterior abdominal wall. The author claims for this operation all the benefits belonging to ventrosuspension, with none of its disadvantages.—*Zentralblatt für Gynäkologie.*

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

FILARIA PHILIPPINENSIS—ITS POSSIBLE RÔLE IN THE SPREAD OF MALARIA—PLAGUE-CONTAMINATED ANTICHOLERA SERUM —PERSONAL.

MANILA, December 14, 1906.

THE regular monthly meeting of the Manila Medical Society took place at 8:30 P.M., December 3, 1906, at the St. Paul's Hospital. Dr. Musgrave, a member of the staff of that institution, gave a talk upon the use of the *x*-ray and a practical demonstration of the machine that is in use at that hospital.

A paper was next read by Captain Percy M. Ashburn, Assistant Surgeon, U. S. Army, and First Lieutenant Charles F. Craig, U. S. Army, upon the *Filaria philippinensis*. This paper was supplemental to the one which was recently published in the *Journal of Science* for September. Four additional cases were reported, the findings of which went to confirm the statements made in the previous paper written by them. A very important point was brought out by the writers, which has not heretofore been mentioned in connection with the spread of the blood diseases, that is, the rôle which the filaria or other animal parasites may play in acting as intermediate host for malarial or other protozoa. It is thought that, for instance, the *Filaria philippinensis* might harbor the malarial parasite, the filaria might be ingested by the mosquito, and perhaps the mosquito might inoculate man with filaria that contained malarial organisms. The filaria in the blood stream of man might undergo change or disintegration, or even without disintegration the malarial parasite might be set free. If this were true, considerable additional light might be thrown upon the transmission of disease, and our present views of the period during which malaria may remain in the resting stage would perhaps be considerably changed. It may be readily understood that if the foregoing hypothesis proves to be correct it would perhaps serve to explain some of the obscure cases of malarial infection which now do not seem to be fully covered by the mosquito theory alone. The writers promised to investigate this phase of the question and make the result of their work known later on.

The additional cases of filaria which were reported were found among native troops who are stationed in Cavité province, near Manila, after being reported by the medical officer in charge. They were removed to the First Reserve Hospital, Manila, where thorough studies were made and the diagnosis confirmed. It will be remembered that Drs. Ashburn and Craig claim that their filaria differs from others heretofore described, in that a tight sheath is present, that the head forms a serrated retractile band, and that the viscus forms a separate tube or cylinder, whereas in other forms it is either negative or shows in the form of a granular mass, and, with the exception of the *Filaria perstans*, the motility is lashing and progressive, and that it has no periodicity, being found with equal facility at any time of the day or night.

The lamentable accident, which was reported previously, which occurred among the prisoners who were inoculated by Dr. R. P. Strong, of the Government Laboratory, has so far resulted in 13 deaths among the 24 cases inoculated. The Governor-General, in order that a complete investigation of the accident might be had, appointed a general committee, composed of Señor Rafael del Pan, Dr. Gregorio Singian, Dr. José Donelan, Señor Carlos Ledesma, and Dr. Ariston Bautista Lim. In addition to the foregoing committee, a technical committee was appointed, consisting of Captain and Assistant Surgeon Percy M. Ashburn, U. S. Army, Dr. Luis Guerrero, and Dr. Juan Miciano.

The instructions to the general committee were as follows: "This committee will investigate and report in detail on the following subjects: (1) Is any anticholera prophylactic manufactured and properly prepared by the Bureau of Science, or used by the Government, or any of its authorized officials, dangerous *per se* to human life? (2) Is the anticholera prophylactic manufactured by the Bureau of Science properly, carefully, and scientifically prepared, and was the anticholera prophylactic used to inoculate the prisoners referred to properly, carefully, and scientifically prepared? In case the prophylactic used to inoculate said prisoners was not properly, carefully, and scientifically prepared, what person or persons are responsible for such improper, careless, or unscientific preparation of the prophylactic used? (3) Did the anticholera prophylactic used to inoculate said prisoners deteriorate or become contaminated after preparation, and if it did deteriorate or suffer contamination could such deterioration or contamination have been avoided by the use of proper care, and who or what was responsible for such deterioration or contamination? (4) Was there any carelessness or negligence in making the inoculations in question, and, if so, who is responsible for such carelessness or negligence? (5) What was the direct and the indirect cause of the death of said prisoners?"

The instructions to the technical committee were as follows: "The technical committee shall investigate the method of the preparation of the cultures that were used in inoculating the prisoners in Bilibid, their nature, and the possibilities of contamination, and the result that would follow the use of a prophylactic prepared by the method used in these inoculations; also the literature relating to cholera vaccinations and the results obtained therefrom in the past. To make a scientific investigation as to the cause of death of the prisoners in question, which must include a complete biological and pathological study by experiment and literature, and for this purpose authority is hereby granted to investigate, by autopsy or otherwise, any deaths that may hereafter occur among the inoculated prisoners, and to make blood examinations of the blood of the vaccinated prisoners still living. The technical and scientific investigations of the technical committee shall not exclude the consideration of technical and scientific investigations made by others, or the consideration of such other expert evidence as may be presented. The general committee is respectfully requested to hold a meeting as soon as possible, and jointly with the technical committee to take such steps as may be necessary for the making of the investigation and report required by this order."

Dr. W. S. Washburn, Chief of the Philippine Civil Service, who recently returned to the Philippines after spending leave of absence in India and the United States, has again been compelled to request six months' leave of absence, for the purpose of proceeding to the United States on account of ill health.

Progress of Medical Science.

New York Medical Journal, January 19, 1907.

The Ocular Complications of Mumps.—J. H. Woodward completes the history of a case previously reported. The patient was a girl of eleven years with left optic neuroretinitis following infectious parotitis, which resulted in blindness of the affected eye. Proptosis caused by anterior staphyloma called for enucleation three and one-half years later. Enucleation and possibly evisceration of the orbit was advised because it was not possible to state positively that malignant degeneration had not begun within the eyeball. The probabilities, however, were strongly against that supposition, for there was no history of prolonged pain, the intraocular tension, although greater than normal, was not high, the proptosis was evidently not due to an increase in the contents of the orbit behind the eyeball, the development of the anterior staphyloma had been very slow (one year), and the general health of the patient was and had been, with the exception only of acute illnesses, excellent. There was some swelling of the right optic disk at the upper and lower borders. The vessels of the right fundus were tortuous, but the function of the eye was not affected; vision was normal. The report of the pathologist on the enucleated eye is given in full. Although carefully searched for, no evidence whatever of malignant disease was found. The case was one of proliferating neuroretinitis due to mumps. The proptosis was a consequence of the increased intraocular tension from secondary glaucoma produced by obliteration of Fontana's spaces and Schlemm's canal.

Gastroptosis a Causative Factor of Tachycardia.—H. Weinstein outlines the characteristics of paroxysmal tachycardia. The etiological factor is often difficult to find in a given case. It may be that it is of a reflex nature brought about through interference with the proper functioning of the vagi. The author gives the history of a woman of twenty-six years, married and extremely anemic, who had suffered from palpitation for eight months. A soft systolic murmur was heard at the apex. The abdomen presented on inspection a considerable depression in the epigastric region; the lower abdomen bulging forward and rounded; the abdominal walls soft and flabby. The greater curvature of the stomach was found to occupy a position about midway between the umbilicus and the symphysis pubis; the lesser curvature somewhat above the umbilicus. A splashing sound was easily elicited, the stomach containing considerable gas and fluid. There was no visible peristalsis of the stomach as is sometimes observed in severe gastroptosis. The liver was palpable somewhat below the costal margin, and the right kidney was freely movable. The deep reflexes were only slightly exaggerated. The pulse was small and rapid (120 per minute) and easily compressible. The urine presented no abnormalities. It was

conjectured that the prolapsed stomach stood in a causative relation to the tachycardia. The wearing of a proper abdominal bandage promptly relieved all untoward symptoms. It appears reasonable to assume that the prolapsed stomach, dragging upon the vagi, interfered with their proper functioning, thus causing tachycardia.

Education, Considered from a Medical Point of View.—R. Parsons condemns the modern forcing system of education of girls and claims that they are called on to do too much indoor studying and are not allowed to take the proper amount of exercise in the open air. The higher educational methods do not develop girls into healthy or refined women. Large numbers of young girls who are blossoming into womanhood and who will in the course of time become the wives and mothers of the American people, suffer from more or less impairment of the general health. Instead of being strong and robust, they are threatened with a physical breakdown. The nervous system is developed at the expense of other bodily organs. Moreover, the girls become masculine and slangy. They may be learned in certain forms of book knowledge, but do not exhibit that modesty of demeanor which is one of the most admirable traits of the feminine character. They tend to become eccentric. Parents are largely to blame for this state of affairs. They warn their daughters who are in the grammar grades that active play is unbecoming to a young lady. This fact, together with long hours of study in school and at home, deprives the growing girl of the opportunity of taking a sufficient amount of physical exercise in the fresh air and sunshine, of which she is so much in need. As time goes on the already overtaxed girl is expected to take up the study of some accomplishments, such as painting or music, and as the result of the constant effort to keep up with her studies at school and at home, the young girl is obliged to sit up late at night poring over her books, and is thus deprived of the proper amount of sleep. Soon the appetite is impaired, and she becomes listless and fretful, while it is not uncommon for her to develop symptoms of anemia. Moreover, parents must bring pressure to bear upon the educational authorities so that the conventions may be properly modified.

The Chemical Value of the Differential Blood Count in Operative Otology.—J. F. McKernon believes that in septic cases and particularly when distinct symptoms and physical signs are absent, the differential blood count is of practical value in enabling us to complete a diagnosis, and in cases of sepsis, when the physical signs and symptoms are distinct and definite, it is then only confirmatory of what is already present, and gives us an added link to complete the chain of evidence. In doubtful cases, when a differential count is taken and found to be negative, other daily counts should be taken in order to verify or disprove that which has formerly been taken. Another fact of importance brought out in this series of cases is that when cellular bone structures, like the mastoid bone, are involved in a septic inflammation, without involvement of the adjacent blood currents, we find that in the majority of cases the differential count shows a relatively lower polynuclear percentage than when a septic process is present in the soft tissues of the body. This can be explained on the theory that an absorption of toxins is less rapid when such a process takes place in a bone cavity than when the soft tissues of the body are involved, for in a number of the cases operated on, an abundance of pus was found, when the count showed a polynuclear percentage of between 72 and 80.

Journal of the American Medical Association, January 26, 1907.

Osteoatrophic Changes in Chronic Joint Disease.—R. S. Lavenson reports a case of chronic joint disease involving practically all the joints of the body. The most striking feature of the case was the wasting of the bones, which was especially marked in the hands. All the fingers were greatly shortened and some entire phalanges had apparently been absorbed. Before the appearance of her disease the patient, a woman, had been about 5 feet 3 inches in height, weighing in the neighborhood of 135 pounds. In her present condition her height, as nearly as it can be estimated in her crooked state, is not over 4 feet 10 inches. Lavenson has found but one case in the literature that seems closely to resemble this, that reported by Watson (*British Medical Journal*, March 10, 1906). Lavenson remarks that the extraordinary degree of atrophy in this case suggests some influence other than that of the local joint disease as playing a part in bringing about the conditions. The most rational consideration is naturally of some trophic disturbance, either primary or reflexly induced by the joint disease.

Frontal Sinus Variations.—M. H. Cryer illustrates and describes a number of variations in the frontal sinuses, including cases of multiple, unilateral, irregular, exaggerated, and absent frontal sinuses. He remarks that the frontal sinus is subject to infinite variations; it may be wanting, it may be very small, it may be single or multiple, and it may vary greatly in extent in different individuals and on different sides in the same individual. He has found two cases in which the internal plate or wall of the sinus was lacking, or incomplete, and also cases in which the so-called ethmoid cells have pushed upward into the space of the frontal sinuses. He considers all these variations are not the rare exceptions as some may claim, but thinks that any thousand skulls, if carefully examined, would show equal variations with those he describes, and if a series of a thousand skulls with diseased pneumatic sinuses were examined, the variations would be found much greater and more common. External evidence of these anomalies is generally wanting, and examination through the nasal fossæ will give but a slight idea. Transillumination does not give sufficiently accurate information, and clinical experience counts for little. A good radiogram, particularly if stereoscopic, is one of the most reliable witnesses for the surgeon's dependence in diagnosing the character of abnormalities and disease in the frontal region.

The Right and Left Frontal Lobes.—W. C. Krauss gives an abstract of the previously reported history of a patient with glioma of the right frontal lobe of the brain, in which the symptoms were merely severe pain and optic neuritis, most pronounced on the right. He also reports in full detail the history of another case of glioma of the left frontal lobe, in which, together with the symptoms of headache and optic neuritis, there was marked mental apathy resembling a mild type of acute dementia, with the consequent symptoms of slowness and hesitancy of speech, loss of memory and ideation, but no paralysis or localized spasm. There was vertigo and, possibly allied to this, atactic gait, as pointed out by Bruns as existing in frontal lobe tumors, was very noticeable. A very important symptom was agraphia both for printing and writing, but more marked for printing, before operation. After the removal of the growth the agraphia partly subsided, although a large part of the second frontal convolution, accepted by Gordinier as the localizing center for writing, was removed. The cause of this is only conjectural. Krauss discusses at some length the question of the function of the frontal lobes, and summarizes his conclusions as follows: 1. The prefrontal lobe of the left hemisphere is in all probability the seat of memory, reason, intuition and judgment, or the higher intellectual faculties. 2. A distinct center for writing and printing exists in the base of the second frontal convolution of the left hemisphere.

The Opsonic Content of the Blood of Infants.—S. Amberg has tested the opsonic content of the blood in infants, breast-fed and otherwise, and in different conditions of health and nutrition. The bacillary species used was *Staphylococcus citreus*, and the results in the different groups are given in tabulated form. His results do not altogether support Moro's finding that the blood of breast-fed infants always exceeds in bactericidal power that of other infants; while the kind of food may exert an influence, other factors must enter into consideration. One of these appears to be the state of nutrition, but there are indications that there are still other factors that come in play in certain cases. While he admits the insufficiency of the data, the small number of cases (45), and the fact that dispensary material is not altogether ideal, he offers tentatively the following conclusions: 1. The opsonic content of the infant's blood does not seem to follow the rules laid down by Moro for the bactericidal power of the blood. 2. The average values for the opsonic content of infants' blood exceed those laid down by Simon for normal adults. 3. A distinct advantage seems to exist in favor of the breast-fed infant. This advantage does not seem to be dependent so much on the breast feeding as such, as to some extent on the state of the nutrition of the infant and perhaps on the constitution.

The Roentgen Rays and Malignant Disease.—E. G. Williams suggests the possibility of a close relation between the vibration period of *x*-rays and that of atomic or subatomic activities that constitute the vital principle in protoplasm. It is the cells, and these in proportion as they exhibit the manifestations of life, that are principally acted on by the rays, and this explains the selective action on malignant growths, especially carcinomas, that have the largest proportion of vitally active cells. In the treatment of tumors, therefore, the result depends on their constituent cell tissues and their accessibility to the proper quality of radiant energy. Hence the adaptability of the rays for superficial malignant growths, while for deeper ones excision is indicated, followed, of course, by sufficient exposures to the rays to destroy malignant cells that may be left. Ex-

cision should also be practised in the case of cancer of the lips or of any mucous membrane, as he has found such for some reason especially resistant to the rays.

Antigonococcus Serum in Epididymitis.—G. K. Swinburne has employed the antigonococcus serum of Rogers and Torrey in thirteen cases of epididymitis. He was able to trace eleven of the patients through the whole course of their ailment. Eight were treated within twenty-four hours of the beginning of their symptoms; three had had the trouble three or four days. Three patients received two injections, four received three, two received four, and two received five injections. In three patients who received two injections twenty-four or forty-eight hours apart, there was apparent complete recovery in a few days, then a slight relapse requiring another injection (which, if used before, might have prevented the relapse). The injections were given as Dr. Rogers gave his, on the back of the arm, with due aseptic precautions. In all the cases but two the patients had no pain after the fourth day, except in the three who relapsed. In five there was left no trace of the disease, in four there was a slight nodule, and in two there was a rather soft mass left about the epididymis. Four of the cases were severe from the start. Swinburne believes the serum had a distinct effect in all the cases, markedly modifying the course and shortening the duration of the disease, and in several of the cases the quickness of the recovery was remarkable.

The Lancet, January 12, 1907

Persistency of Infection in Scarlet Fever.—H. P. Berry gives some facts derived from an epidemic in Grantham. In addition to the usual hospital isolation a nurse was employed to isolate and subsequently disinfect the cases remaining at home. The disease continued to spread and the author's attention was drawn to the possibility of infection being conveyed by means of those patients who had apparently recovered, and he has been forced to the conclusion that the infection may in certain cases remain in the patient very much longer than has been generally supposed. According to his investigations there were nineteen cases which, after apparently complete recovery and disinfection, gave rise to twenty-eight other cases, and he has reason to suspect that not a few others were due to this cause. It is also evident that this persistency of infection was not confined to patients treated in hospital, for three at least of these "infecting" cases were treated at home. Comparing these results with his previous experience, it appears necessary to presume that this persistence of infectivity may exist in some epidemics and not in others. Some twenty groups of cases are summarized illustrating the theory above advanced. The author notes the prolonged infectivity of a gleet after a gonorrhea is recognized as existing for an unknown length of time, and is inclined to the belief that the scarlet fever infection may similarly persist, lodged possibly in some of the nasal chambers, and that, moreover, it may lie dormant for some time until some suitable condition may render it capable of transmission. He is also inclined to the view that in some of those instances constantly referred to in text-books, when the poison is presumed to have been harbored in infected garments for a length of time, the spread of the infection may not improbably be due to the harboring of the infection in the convalescent patient rather than, as has been presumed, in the infected garments.

Treatment of Chronic Sciatica and Similar Forms of Neuritis.—A therapeutic suggestion is made by J. C. Webb, who reports four cases, and commends the use of static electricity. He calls attention to the fact that this form of electricity differs radically from currents derived from battery or dynamo on the one hand—whether continuous faradic, sinusoidal, or polyphase—and from "high-frequency" currents on the other. Its voltage is enormous, its amperage infinitesimal, and its frequency of pulsation (for it is not alternating in ordinary circumstances) anything that the operator wills. He employs for the class of cases under discussion the wave current, the brush and indirect sparks. With regard to early sciaticas and other forms of neuritis the author claims that invariably, if the patient be not too old, one can effect a rapid cure provided the case can be brought under treatment right from the onset. All forms of neuritis or neuralgia, provided they are not due to tumor pressure or other unremovable cause are among the most satisfactory of the many causes that can be cured or relieved by this most potent therapeutic agent.

Gallstones in the Appendix.—H. A. Ledraid reports the case of a man of twenty-six years who one month before entering hospital had had an attack of acute pain over the lower abdomen, from which he recovered. He resumed work and remained well for a while, but seven days before entering the hospital pain again returned about the umbilicus and gradually localized itself in the appendical region. There were no symptoms suggesting any trouble with the bile producing or conducting apparatus and no gallstones had ever been seen in the stools. His symptoms justified abdominal exploration, and the appendix was found to contain eleven gallstones, together with some turbid mucus. The patient made an uneventful recovery. The author states that as a general rule the size of stones met with in the gall bladder or separated from fecal discharge is too large to enter the canal of the appendix, and the same is true for the stones of fruit, formerly supposed to get into the appendix; the stercolith having simulated an orange pip or a damson stone. Here again a chemical analysis would effectually serve to get rid of a fiction which has been repeated in all books and is still believed in by some. The author suggests that all concretions found in or near the appendix, or in an abscess or otherwise, should be systematically examined by section and by analysis in order to settle definitely whether a concretion is a stercolith or gallstone, covered or not by fecal deposit.

Sclerodermia and Myositis.—Four cases are reported by J. A. Nixon, who briefly details others already in literature. He notes a polymorphism existing in the disease called sclerodermia similar, or rather analogous, to that of rheumatism. In the cases examined after death the muscle changes have been reported to be of either an inflammatory nature or of what may be interpreted to be a later stage of the nature of a fibrous degeneration or infiltration. The dependence of the disease and the allied muscular atrophies upon nerve lesions is but a matter of conjecture. No positive and definite nerve lesions have been described that could be regarded as standing in a causal relation to the malady. But the evidence of primary inflammation in the muscles of either an acute or chronic variety, ending as a rule in a fibrosis, is amply corroborated both by clinical and pathological facts. Beyond this it is difficult to penetrate clearly; the indications seem to point to an acute or chronic infection which affects mainly muscle and subcutaneous tissue, resulting in a sclerosis of the skin and the muscle, an infection to which perhaps persons suffering from other general diseases are peculiarly liable and especially the subjects of Graves' disease, myxedema, Raynaud's disease, Addison's disease, and nerve degenerations. It seems probable that myositis of a localized nature going on to sclerosis and contraction of a single muscle or isolated groups is commoner than generally supposed; and that the disease, of which this is only one manifestation, may run an acute, subacute, or chronic course, and on occasions may involve the skin, giving rise to one type of sclerodermia.

Pathology and Treatment of the Ocular Complications of Gonorrheal Infection.—W. J. McEttles believes that the Credé method of prophylaxis in ophthalmia neonatorum is too well established to call for more than mention. The incubation period of gonorrheal ophthalmia is sixty hours. We may have a true metastatic or endogenous infection due in some instances to the presence of the gonococcus or its toxin—this in addition to direct infection. He regards gonorrheal iritis as far more common than is generally supposed. In the usual conjunctivitis the progress depends on the condition of the cornea. If it is clear we may hope for good results. It is the author's practice at once to irrigate the sound eye and then instill a silver solution before putting on the Buller shield, since we have no ground for assuming its freedom from infection. The affected eye is then irrigated thrice daily with 200 cubic centimeters of a solution of nitrate, 1 in 300, in warm distilled water. After each irrigation, applied by a glass undine, he instills two drops of 2 per cent. nitrate and does not neutralize with salt solution. In all adult cases he divides the external canthus. This may seem a heroic proceeding, but in view of the extreme danger to sight it is insignificant. One blade of a pair of strong scissors is pushed under the commissure as far as it will go, and the intervening tissues are severed at a single stroke. The outer tarsal ligament is very resilient and will elude the grasp of any but sharp blades. It is remarkable how greatly this facilitates the proper handling of a case. The cornea is at once removed from pressure as the edematous lids are depleted by the free bleeding and orbicular spasm is also done away with. Even more valuable is the free access to the retrotarsal folds. Contrary to what one would expect, when all swelling has subsided, there is very little wound left and blepharoplasty is not needed, although that would be a simple matter if it were. During the interval between the irrigations it is usual to employ frequently renewed dressings kept moist and cold on a block of ice. As a general surgical measure, the use of cold topical applications is diminishing as a result of our increased acquaintance with the pathology of inflammation. This applies with unusual force to ophthalmic surgery, where there is *ab initio* a lessened vitality, in the face of which it is illogical to

reduce the normal temperature, and where, moreover, owing to the thinness of the intervening tissues, the temperature can be influenced to an unusual degree. Warm applications, on the other hand, maintain an impaired nutrition and are much more grateful to the patient than cold ones. When the stage of ocular gleet has been reached it will be found, as in urethral work, that simple astringents are of more use than the antiseptics.

British Medical Journal, January 12, 1907.

Peliosus Rheumatica.—M. W. Williams reports a case occurring in a boy of thirteen years with rheumatism in one knee. Two days afterward spots appeared on his leg. Still later on the right cheek, with a swelling of the eyelids and brow. Various other areas became involved. The joint trouble became polyarthritic, the boy had gastric and abdominal pain, and finally on the eighth day a free hemorrhage from the bowels, while he also spat blood. The gums were not spongy and did not bleed readily. On the following day the fever, which had run up to over 102° (mouth), disappeared. The urine showed no blood or albumin. The joint and abdominal pains disappeared and he was altogether better. During convalescence an urticarial rash appeared on the trunk and right leg, freely sprinkled with purpuric petechiæ. The entire illness lasted one month. The remedies given were salicylate of soda for the rheumatic symptoms and calcium lactate in ten-grain doses for the bowel bleeding.

Partial Dislocation of the Larynx.—H. Walker's patient was a male adult who while driving in a high dog-cart ran against a double clothes-line stretched across the road at the level of his neck. He was thrown over backward, had a feeling of suffocation, heard something "click" in his neck and became very dizzy and almost blind in his left eye. He was a veterinary surgeon with some knowledge of human anatomy and appreciated the nature of his accident, finding that the thyroid cartilage displaced toward the left. This displacement he was partially able to reduce. Examination four or five hours later showed an indentation but no fracture of the right ala. The hyoid bone was in position. The cricoid and upper part of the trachea were carried slightly to the left. No good view of the cords could be obtained with the mirror. The thyroid could be easily brought back into its normal position with a distinct grating sound. Voice was but little affected and there was no swelling, hemoptysis, edema, or emphysema. He was placed on his back with a straight splint to his nape. Strapping was firmly but gently applied and an ice bag laid against the left side of his neck. He recovered without special incident. The pomum Adami seemed to be permanently turned somewhat toward the left.

Anomalous Cases of Pernicious Anemia.—G. L. Gulland summarizes the histories of a group of cases in which prominent features were variously amaurosis, symptoms suggestive of peripheral neuritis, aphasia, gastrointestinal disturbances, kidney disease masking the anemia, acute Bright's, intermittent pyemia, long continued symptoms with acute terminal attack, etc. He believes that the disease is more common than fifteen or twenty years ago. He states that it is not essentially a blood disease at all, but rather a toxemia of largely unknown, possibly very various, origin, which affects the blood, the blood-forming organs, the nervous system, and the gastrointestinal tract, in proportions which vary infinitely in different cases. The old idea of pernicious anemia, that it is a condition of rapidly-advancing anemia leading within a short time to a fatal issue, must be given up, for cases are on record of very prolonged duration, and there are many in which almost from first to last the anemia is quite in the background, and the prominent symptoms are those due to the affection of one or other of the other systems mentioned. Treatment is of value only in cases in which a diagnosis is made early. The author does not believe that the streptococcus or any other organism is responsible for the malady. The blood of pernicious anemia represents in some ways a throw-back to the blood of early fetal life, and it seems possible that in the people who become affected there may be an inherent weakness of the resisting power and of the blood-forming organs which allows the bacterial processes which go on in every intestine to get out of hand, so that quite ordinary organisms acquire an unusual virulence, and set up the hemolytic and other toxic processes which one sees in pernicious anemias. The author has been strengthened in this feeling by the fact that within the last few months he has come across three cases of people in middle life whose fathers had died of pernicious anemia, in one case ten, in another twelve, and in the third eight years before. This seems to point to an inherited weakness of the bone marrow. He advances no new ideas as to treatment. Special stress is laid on diet. This is to be arranged with care to suit each case, but the broad principles are that as long as the blood count is low it should consist entirely of milk and farinaceous food; no meat of any kind should be permitted. Of course, this change of diet partly meets the second indication, the diminution of bacterial processes in the intestine. It is not uncommon to find that patients when they are first seen have large quantities of indican and similar substances in the urine, and that after a week or two on a farinaceous diet these practically disappear. In some cases it may be necessary to supplement this by giving intestinal disinfectants, of which in the author's experience calomel and salol are the most efficient, and in still others it may be necessary to wash out the bowel daily with large enemata of normal saline solution. Theoretically, the stomach might be washed out as well, but patients who are so seriously ill as to require this are seldom in a condition to stand the strain which it involves. The secretion of hydrochloric acid in the stomach is practically always deficient and usually absent in this disease, and he had sometimes found marked improvement from giving hydrochloric acid and pepsin in several doses after meals.

Berliner klinische Wochenschrift January 7, 1907.

When Should Laparotomy Patients Get Up?—Hartog says that during the last few years it has become the custom in Landau's gynecological clinic to allow laparotomy patients to leave their beds earlier and earlier. The present rule is to allow patients whose incisions were sutured without drainage, if no complications arise, to get up toward the middle or end of the first week, both after abdominal and vaginal celiotomies. The subjective feelings of the patients are largely used as a guide, and if the patient in reply to the question of whether she would like to get up replies in the affirmative there is no objection to her doing so even two days after the operation. An exception is made only in the case of plastic operations and hernia operations, but the getting up early is regarded as of especial importance and value when there are complicating constitutional diseases, such as diabetes. The author furnishes the details concerning a very considerable number of operations after which the patients were allowed to leave their beds very early, and states that no disturbances in the healing of the wounds were noticed and that all the patients left the hospital with firm scars and without any form of binder. Although the patients are apt to complain somewhat of discomfort in the wound on getting up early, they are all glad to put up with this in return for the satisfaction of leaving bed so soon. An especial advantage is the greater respiratory activity that is obtained, and this is of importance, particularly in dealing with old persons. Other points of advantage are the increased appetite and better digestive conditions as well as a lessened tendency to thrombosis and embolism.

French and Italian Journals.

The Serum Diagnosis of Tuberculosis.—According to the observations of G. Ferré and P. Courmont the positive value of the serum reaction, if it is furnished by the serum of apyretic individuals, constitutes in the great majority of cases a presumption of the existence of tuberculosis equivalent to certainty. On the other hand, in individuals suspected of tuberculosis the negative serum reaction is a sign of real value in relation to the absence of tuberculosis. Although this method cannot completely replace clinical diagnosis, it has a very useful application in the early diagnosis of tuberculosis. In addition to clinical diagnosis, it reveals the first stage in the evolution of tuberculosis. Seroreaction fails especially in very severe forms or in very advanced cases of tuberculosis. It is seen at its maximum in the cases which are on the road to recovery.—*Association Française pour l'Avancement des Sciences*, Lyon, August 2-7, 1906.

Multiple Primary Cancers.—F. Ravenna calls our attention to the commonly made statement that malignant tumors develop from a single primary lesion, from which the other lesions arise by diffusion. The author believes that there have been enough cases reported to determine definitely that there are a certain number of cancers in which there are two different primary foci resulting in two entirely different types of new growth. He cites numerous cases collected from literature, and to these he adds a case observed by himself, in which there was a stenosis of the esophagus of neoplastic origin and a tumor of the colon at the same time. The two tumors were of entirely different structure, one originating from the flat epithelium of the esophagus, the other from the glands of Lieberkuhn. The germs of cancer could hardly have been carried through the entire intestine, passing the digestive juices of the stomach and intestine without injury, and they could hardly have been carried by the lymphatic vessels through so roundabout a course as they must have followed to be carried from the esophagus to the colon.—*Il Policlinico*, November, 1906.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and First Annual Meeting, Held in Albany, January 28, 29, and 30, 1907.

JOSEPH D. BRYANT, M.D., PRESIDENT.

Monday, January 28—First Day.

HOUSE OF DELEGATES.

THE meeting of the House of Delegates took place at 8:30 P.M.

Report of the Secretary.—Dr. WISNER R. TOWNSEND, in this report, stated that there had been four meetings of the *ad interim* House of Delegates during the year 1906 and one meeting of the Council. There were now 57 county medical societies in the State, all of which had adopted new constitutions and by-laws in conformity with those of the State Society. Three counties—Essex, Hamilton, and Putnam—had no societies, and two counties—Queens and Nassau—had one combined society. The total membership in these societies on December 31, 1906, was 6,588. There had been no meetings of the District Branches, as it had been impossible to organize them in time, many of the county societies not having held their elections until December. In the future, the report stated, there would be nine meetings held in the State each year, eight by the District Branches and one by the State Society. The expenses of all these meetings would be paid by the State Society, after a satisfactory agreement between the Society and its Branches had been arrived at. During the past year effort had been made to secure the registration of two hundred and fifty legally qualified physicians in the State who had hitherto neglected this formality, and all but seventy were now registered in the County Clerks' offices. In view of the fact that a failure to register not only entailed certain legal penalties, but might render the individual liable to prosecution as an illegal practitioner, it was hoped all would see the importance of complying with the laws and promptly effecting registration.

Shortening of the Session.—Dr. LEO H. NEUMAN, chairman, reported that the Committee on Scientific Work had decided to have the scientific program completed in two days, instead of three, as heretofore.

Committee on Arrangements.—Dr. WILLIAM J. NELLIS made this report.

Report of the Treasurer.—Dr. ALEXANDER LAMBERT made this report, in which it was shown that the finances of the Society were in a satisfactory condition.

Report of the Committee on Public Health.—Drs. JOHN L. HEFFRON, chairman, HENRY C. HOPKINS, and HAMILTON D. WEY were the members of this committee. The report stated that during the past year there had been an awakening of the public mind upon some of the fundamental facts in public hygiene, such as no similar period of time had witnessed. The people had been aroused to the importance of pure food, and had enacted a law for self-protection which, if efficiently carried out, would effect an enormous diminution in the death rate. They had also come to a realization of the necessity of protecting the sources of the water supply from contamination with the excrement of animals or man, and from chemical pollution from factories. The committee commended the action of the American Society for the Advancement of Science looking to the formation of a National Department of Public Health, and suggested that the State Medical Society pledge its influence to carry into effect the plan which the committee of the American Society for the Advancement of Science should adopt. The committee recommended the establishment in every county of the State of a bacteriological laboratory, under the charge of a bacteriologist of recognized ability, to which every physician might send specimens for analysis. The appointment of health officers was at present in too great degree a political matter, and the committee recommended that the Regents should create the degree of Doctor of Public Health, and should grant it to such as have taken special post-graduate courses in the Science of Public Health in recognized schools of medicine, and that the State should enact a law making only such as have such a degree eligible to appointment as Medical Health officers. It was also recommended that the State medical license law should be amended so as to replace the three examining boards by a single board, before which all candidates should be examined in all branches, save only materia medica and therapeutics. By demanding the same education of all those who would practise the art of healing, the State would unify the profession of medicine, while, at the same time, it would deprive no man of his right to use any method of applying remedial measures that appealed to his reason, nor would it take from any individual the right of selecting the physician he might prefer.

Report of the Committee on Legislation.—Dr. ARTHUR G. ROOT, chairman, reported that thirty-six bills pertaining to the public health or the practice of medicine had been introduced in the Assembly last year, of which four were passed and approved by the Governor, and one was vetoed. In the Senate sixteen bills had been introduced, only one of which had become a law.

Report of the Committee on Publication.—Drs. E. ELIOT HARRIS, chairman, FLOYD M. CRANDALL, HERMANN M. BIGGS, ALEXANDER LAMBERT, and A. T. BRISTOW comprised this committee. The report was concerned chiefly with the rules which had been adopted regulating the admission of advertisements to the pages of the Directory and the State *Journal*.

Report of the Editor of the "Journal."—Dr. JAMES P WARBASSE presented a report on the ten numbers, March-December, 1906, appearing since he took charge. There was at first a deficit while the *Journal* was undergoing development, but it was now self-supporting. The paper could well be increased in size, the question being one of expense only. Every advertisement appearing in the *Journal* had first been favorably passed upon by the Committee on Publication.

Report of the Counsel.— JAMES TAYLOR LEWIS, Esq., presented brief synopses of forty-four malpractice suits which had been brought against members of the Society, fourteen lying over from 1905, and thirty instituted during the year. Many of these resulted in a victory for the physicians.

Officers.—The election of officers resulted in the following choice: *President*, Dr. Frederick C. Curtis of Albany; *First Vice-President*, Dr. J. C. Bierwirth of Brooklyn; *Second Vice-President*, Dr. Edward Torrey of Olean; *Third Vice-President*, Dr. N. G. Richmond of Fredonia; *Secretary*, Dr. Wisner R. Townsend of New York; *Treasurer*, Dr. Alexander Lambert, of New York.

Tuesday, January 29—Second Day.

SCIENTIFIC SESSION.

The first scientific session, held in the Common Council Chamber of the City Hall, was opened by a prayer by the Rev. Dr. J. A. Jones of the Madison Avenue Reformed Church.

President's Address.—Dr. JOSEPH D. BRYANT delivered this address.

Danger Signals from the Skin.—Dr. L. DUNCAN BULKLEY of New York read this paper, considering the importance of the skin as an emunctory organ of the body and as a regulator of heat. He considered briefly syphilis, eczema, acne, psoriasis, chronic urticaria, erythema multiforme and bullous eruptions, pruritus, xanthoma diabeticorum, boils and carbuncles, dermatitis maligna or Paget's disease of the breast, acanthosis nigricans with multiple capillary angiomata, lupus vulgaris, purpura rheumatica and erythema nodosum, petechial and erythematous rashes,

purpuric lesions, rose spots, pigmentary alterations, sweating, and dermatitis medicamentosa. He showed that the skin had vital relations with many parts of the body.

Dr. Frederick C. Curtis of Albany emphasized the fact that skin affections were largely connected with malaction, functional or otherwise, of internal organs.

Dr. L. Bolton Bangs of New York said that the danger signals in innocent infection from syphilis especially as regards deafness, could not be too strongly emphasized. It was in the early stages, if it could be discovered, that prevention of deafness might result from properly applied treatment.

The Importance of Aural Examinations and Functional Tests for Healthy People.—Dr. W. Sohier Bryant said that periodic examination of the ears should be made and functional tests applied at all ages, and after any general disease or affection of the upper air tract, inasmuch as serious damage to the ears might take place without the knowledge of the patient, due to inroads of insidious affections. When the individual was aware of the impairment, the pathological changes had advanced far enough to render recovery difficult. Whereas the early detection of the aural disturbance allowed adequate treatment, with the expectation of the prevention of aural vertigo, tinnitus, deafness, the danger of systemic affection, and intracranial lesions from middle ear suppuration.

Dr. Bisby Allen said a very large number of patients learned that one ear was almost gone before they became aware of it. Such could so easily be prevented if the parent would from time to time test the child's hearing with a watch. Deafness prevented by such a means would be a large asset to the State.

Dr. H. Lyman Davis of New York said that, in cases of hereditary tendency to deafness, the patient should be examined every two years.

Practical Legislation for the Prevention of Blindness from Ophthalmia Neonatorum.—Dr. E. Park Lewis of Buffalo said that the purpose of his paper was not to discuss the merits of different prophylactics in ophthalmia neonatorum. In a scientific medical society the following facts were accepted without discussion: That ophthalmia neonatorum was dependent upon an infection. That it was invariably absolutely preventable by either keeping the cocci from entering the eyes of the newborn child, or by destroying their virulence by the use of some germicide before they had had time to propagate themselves. Any one of several measures was effective, and the choice might safely be left to competent Boards of Health. While owing to better protective measures in the hands of hospital obstetricians and others, disastrous results were probably less frequent than formerly, the exciting cause of the ophthalmia was quite as common as ever, and in the hands of careless practitioners and midwives no protection whatever was afforded the child. Hence arose the necessity of protecting the helpless infant through legal measures. Of the means advised were (1) bills in the legislatures of the several States providing for the registration of births with the Boards of Health; (2) the distribution *gratuitously* by the Board of Health of lightproof, sealed ampoules containing the selected germicide to all physicians doing obstetric practice, as well as to midwives and to others making application for them, with advice as to the possibility of ophthalmia neonatorum developing, measures of protection, the necessity of immediate treatment, etc.; (3) requirement that on each birth certificate should be a signed statement that the germicide provided by the Board of Health, or some other accepted prophylactic, had been used in each eye of the child on the day of birth; (4) penalty in the event of the child losing the sight of one or both eyes, when the statement was not made that some measure of protection had been taken. Dr. Lewis asked for the indorsement of the Society as to the propriety of the enactment of the laws recommended.

Dr. Peter A. Callan of New York thought it was a sad commentary that it was still necessary to have a paper like the one just read before the Society, and the reason lay, he believed, in the indifference displayed by the general profession. It was all very well to have certain penalties on the statutes, but who was going to make it a business to carry out the provisions? He told of his efforts to have incorporated a contagious eye hospital a few years ago, and he was unsuccessful because of the lack of cooperation of his confrères. He believed that a society must be established for the prevention of blindness in New York City, with branches in every prominent city in the State.

Dr. L. Bolton Bangs of New York referred to the educational propaganda that all should engage in, regarding not only eye conditions, but dangers from other sources, especially syphilis and gonorrhea. It might be all right to enact laws to compel midwives and obstetricians to make use of prophylaxis, but how about, he asked, the sources of infection or contagion? How about the infected husband? These questions pertained not alone to the moral side, but to the economic as well, and they were questions, therefore, with which the State and society might well concern themselves.

A Plea for New Methods for the Prevention of Blindness.—Dr. Lucien Howe of Buffalo read this paper, the plan of which was (1) to show that ophthalmia of infancy was the most important cause of blindness, and what that meant to the State or the United States; (2) to show that from data thus far obtained the best preventative of this disease was a 2 per cent. solution of silver nitrate (the Credé method); (3) to show that more recently there had been furnished several other silver compounds; some of them were said to have the advantages of silver nitrate without its disadvantages; most of them probably were overestimated as germicides, and concerning all of them there was a vast amount of ignorance; (4) obstetricians and not oculists were the practitioners who could best decide as to the value of any of these drugs as prophylactics; (5) the plea was to obstetricians to test the value of these various compounds of silver in a large series of cases in order to decide what superiority anyone might present over silver nitrate. This could be done (*a*) by obstetricians who were in attendance at large hospitals; (*b*) by collective investigations of those in charge of smaller hospitals; (*c*) by collective investigations by members of obstetrical societies or members of county societies. He closed his paper by emphasizing the advantages that would accrue from these investigations.

Chloroma, with Special Reference to the Ocular Symptoms.—Drs. C. S. Merrill and A. J. Bedell of Albany reported the case of a patient with double exophthalmos, orbital tumors, leukemic blood, and rapid emaciation, terminating in death. Photographs were shown and the history, with the pathological report of the tumor mass removed during life, was given. They also presented a collection of statistics of ocular involvement in cases of chloroma.

The Pathology of Nontuberculous Joint Infections.—Dr. E. H. Nichols of Boston read this paper. He spoke of a series of changes affecting joints in the young or old, in one or many joints, causing suffering or loss of function. He classified them into the following types: (1) Serous; (2) ulcerative; (3) joint tending to become ankylosed; (4) joint showing tendency to formation of new bone; (5) fungous type with overgrowth of membrane and papillomatous growth extending in cavity, which might entirely fill the joint. In the treatment of the serous type it was desirable to find the original cause. In the majority of cases these cases could be cured by operation. In the treatment of the ulcerative type, moderate use and increasing the circulation by massage, etc. This applied to the fourth type.

Pneumococcus and Typhoid Infections.—Dr. Roswell Park of Buffalo read this paper. He first gave some historical data. There were two or three ways in which joint affections occurred. First, primarily, the purely toxic syno-

vitis; secondly, the embolic or truly septic form. Of typhoid joint affections, there may be the mono- or polyarticular forms. Typhoid complications may occur in the spine, or even in temporo-maxillary articulation. It appears at times insidiously. Complications of typhoid not painful; if due to pneumococcus it is painful. Attention was called to a peculiar position assumed by patient from hip involvement. It was rather startling to find a hip dislocated without known cause. These cases should be handled with great care. A joint already compromised will be dislocated with very little applied force. A large number of cases occur. Typhoid joint complications were not so infrequent as believed. He called attention to the possibilities of these cases. In pneumonia joint complications the conditions were not so greatly different. Some cases occurred early in pneumonia, with very serious complications. A doctor in Liverpool collected 31 cases, of which 24 died. They might be polyarticular. There was a furious outset, with more serious complications, and these cases were exceedingly painful.

The Symptoms and Diagnosis of Syphilitic and Gonorrheal Affections of the Joints.—Dr. Reginald H. Sayre of New York said that in all probability many syphilitic joints were not recognized as such, being mistaken for tuberculosis, rickets, scurvy, and other diseases. He described the different varieties of lesions found in hereditary and acquired syphilis. As aids in diagnosis there was the presence of discharge and there was a history of present or prior attacks shortly antedating occurrence of joint symptoms. He told of microscopical examination of fluid from the joint. The administration of antisyphilitic treatment which was followed by a cure did not mean the patient was syphilitic; many cases might get well in spite of, as well as in consequence of, treatment when not syphilitic. Gonorrheal synovitis might be primary or secondary. The spine might be the seat of gonorrheal inflammation. Such cases might be diagnosed and even cured by injections of antigonorrheal serum.

Staphylococcus and Streptococcus Joint Infections.—Dr. Lucius Hotchkiss of New York read this paper. The acute forms of joint infection came quite as frequently under the care of the general practitioner and surgeon as of the orthopedist, and formed a group of cases of the greatest importance. He emphasized the importance of early diagnosis. There was a tendency to classify all acute joint inflammations as rheumatism, a fruitful source of danger in pyogenic joint infections. He gave the general diagnostic features of the whole group, and special features as applied to different articulations. There was the necessity of exploratory punctures and bacteriological study, in order to make the diagnosis with greater certainty, and to provide the patient early and appropriate treatment. Accurate and early diagnoses were the basis of all rational treatment.

Diagnosis and Symptoms of the Rheumatoid Diseases.—Dr. R. R. Fitch of Rochester read this paper. He followed the nomenclature proposed by Dr. Goldthwait of Boston. There were four common types of nontuberculous joint disease, viz., (1) atrophic arthritis; (2) hypertrophic arthritis; (3) chronic villous arthritis; (4) infectious arthritis. He considered only the first three types. The prevention of, and relief from nontuberculous diseases was a problem not easily solved, but the division of such diseases into distinct types was the first step toward rational therapeutics.

The Mechanical Treatment of Nontuberculous Joint Infections.—Dr. Henry Ling Taylor of New York read this paper. He said that the value of mechanical treatment of nontuberculous affections was not fully appreciated by the medical profession, because as ordinarily practised it was often ineffective. The fear of atrophy and ankylosis was groundless. Joint pressure or motion, or both, was injurious in the active stages of joint infections, and might be controlled by splints and apparatus with or without crutches, or recumbency, according to the indications. Adequate and timely mechanical control promptly relieved pain, allayed the irritation, prevented deformity, and favored recovery, except in active suppuration, and in those cases where the original focus, or general infection, was of primary importance. After the irritation had subsided, vibration, massage, and movements, active, passive, or forced, might be required to increase motion. If from imperfect management deformity remained, it could be readily corrected by mechanical or surgical means. The properly adopted mechanical treatment was the main reliance in most cases of infectious arthritis, and when thoroughly and intelligently applied it gave perfectly satisfactory results.

Operative Treatment of Nontuberculous Joint Affections.—Dr. Walter Wood of Brooklyn considered this part of the symposium. He took up the topics, "When to Operate; Why Operation Was Delayed." He gave the results to be obtained by early operation. He told of the methods useful in draining ankle, knee, elbow, and shoulder joints.

The Medical Department of New York State Library.—Dr. Albert Vander Veer of Albany said that of the many factors entering into the advances that had been made in medicine and surgery during the past two decades that of medical libraries held a most important position. Through their aid many members of the profession had had access to literature bearing upon every conceivable subject in medicine that otherwise would have been denied them. One great value of these libraries had been in completing the sets of medical journals, and this branch of the work, through exchanges and gifts from the libraries of deceased members of the profession, had been accomplished at a comparatively small expense. The procuring and preservation of rare volumes and of a large number of reprints that were constantly accumulating had proven of inestimable value. Repetition in writing upon the same subject had been avoided to a certain extent. Writers had been able to note just what had been said upon the various subjects in the past, and this knowledge had also been of the greatest value. New York State was particularly fortunate in having several of these important centers possessing medical libraries. With the completion of the State Educational Building at Albany it was very desirable that this interest should be continued, for the success of medical work could here be brought about with a minimum expense to the State and could be administered to the advancement of the medical profession in a manner that must result in great good to the public.

State Aid for Medical Libraries.—Dr. Smith Baker of Utica read this paper. According to the Medical Directory of the State of New York, there were at present in the State some sixteen incorporated medical libraries, with an additional one at Utica but just started, and the New York State Medical Library at Albany. Tabulating the number of volumes in the ten libraries heard from, they found a grand total of about 180,080 volumes. For the purchase of new books and periodicals there was used annually a sum derived from private and corporate sources of something under eleven thousand dollars, while the State contributed additionally to the University of Buffalo for a like purpose the magnificent sum of just $100. Without taking these figures as accurate totals, they would yet suffice well enough to bring to view and illustrate three important facts. 1. That there were now but a very few public medical libraries in the State, when there might be and ought to be many more. Why this was so they need not stop to discuss, although the fact itself, upon careful consideration, was a matter for greater regret than any sort of cursory notice justified. 2. That the libraries now in existence, with the exception of that of the State, located in Albany, and the $100 appropriated to the University of Buffalo, had been paid for originally and were now maintained by funds notice justified. 2. That the libraries now in existence, without help from the State beyond certain annual reports and the like. This, too, was a significant revelation to one who

had never before investigated or given thought to the subject. 3. That for the purchase of books, periodicals, etc., there was expended in the whole State a sum total of over $11,000 annually, and yet of this amount over $9,000 came from the same private sources as the original provision. When this was thought of in connection with the $2,000 spent by the State for a like purpose, it became a third revelation of equal or greater significance than the others. It seemed strange that medical men outside of Albany must rely upon themselves alone, or upon some arrangement with the State Library, for assistance in their professional literary extremity. Practically, to the vast majority of the profession of this State, the books in the State Medical Library were not available, and never would be; for even the loan of books which might be secured could only be for temporary purposes, and, generally speaking, practitioners found this arrangement too bungling and unsatisfactory to be of much use. He saw no reason why, when it came to instituting here and there little collections of books and periodicals for the daily inspiration and instruction of the local profession, they should not urge upon the State with all their might the absolute justice of its lending a very material and otherwise encouraging hand, especially wherever the profession itself should take the proper initiative, and thus do its part in commanding rightful recognition and respect.

The Physiological Therapy of Sanatorium Treatment.—Dr. Beverly O. Kinnear of Clifton Springs read this paper. He gave a concise statement of what a sanatorium was upon a large scale, and the diseases most frequently met with in large sanatoria. He also treated of the advantages of sanatorium treatment over those usually employed in the large cities, but chiefly in reference to the chronic forms of disease. He called attention to the modern sanatorium treatments and their effects upon excretion and secretion, upon the cerebrospinal centers and system, upon the systemic circulation, the sympathetic nervous system, upon arterial hypertension, not due to known organic lesions. He reported special illustrative cases and gave an exposition of why the successful results were obtained. He specially emphasized the importance of a careful study of the sympathetic nervous system.

Syphilitic Lesions of the Eyelids, with Reports of Cases.—Dr. Frank Judson Parker of New York read this paper. He said that the appendages of the eyes might be the seat of any or all of the lesions of the different stages of syphilis. The most common were the exanthemata which varied as in other parts of the body; on the eyelids they were of rapid growth, and they might occur at any age and period of the infection. Inflammation and swelling of the tarsal cartilage was nearly always syphilitic. Chancre of the eyelids was among the rare forms of extragenital infection, and might be easily mistaken for lupus, epithelioma, a suppurating hordeolum, or chalazion. In the eye clinics of the Manhattan Eye, Ear and Throat Hospital, of 33,960 eye cases treated in two years, five were diagnosed as chancre of the eyelid. This condition was much more common in males, and the right eye was the more liable to infection. Ocular infection was frequently due to accidental causes. Physicians became infected by the coughing of patients while the throat was being examined; Fournier had reported five such cases that came under his personal observation. The use of public towels, sponges, etc., was a frequent cause of chancre of the eyelids, the tender epithelium of the edge of the lids being easily abraded by rubbing. The chancre most frequently occurred on the conjunctival surface and rapidly involved the entire lid. Enlargement of the preauricular or the submaxillary glands always occurred in chancre of the eyelids. The prognosis was good, and, if treated early, there was no destruction of tissue or deformity. Two cases were reported, one a syphilitic granuloma of the lower lid, the other a chancre on the margin of the upper eyelid.

The Spirochæta Pallida.—Dr. James Ewing of New York spoke on this subject, illustrating his remarks with a lantern slide demonstration.

Symposium on Cancer.—The remaining hours of the session were taken up with a discussion on cancer.

A Synopsis of the Work of the Buffalo State Laboratory During the Past Eight Years, Retrospective and Prospective.—Dr. Roswell Park of Buffalo gave a brief review of the history of the State Cancer Laboratory at Buffalo and the work accomplished. He told of the difficulties in securing State cooperation, and of the impossibility of turning out results to order. He gave comparisons of its work with that accomplished elsewhere, and he made brief references to Cancer Laboratories under foreign governmental auspices. He indicated what the future might reveal, and what might be accomplished by continued work in the same direction.

Parasitism and Infection—The Etiology of Cancer in the Light of Recent Laboratory Advances.—Dr. Harvey R. Gaylord of Buffalo called attention to the observations made in the New York State Cancer Laboratory where a cage had become infected from sarcoma rats and in which in the course of two years three cases of sarcoma had developed in eight rats thus exposed. These cases developed a year apart and the cage was known to have been infected for a period of three years. Heredity played no part in these occurrences. He further described an infected cage which was purchased from a dealer and brought to the State Cancer Laboratory, out of which sixty or more tumor mice had been taken in the course of three years by the dealer, and in which five cases of cancer had developed after the cage was brought to the State Cancer Laboratory. With these facts so strongly indicating the infectiousness and contagiousness of cancer, a typical small spirochete was to be found in all the transplanted tumors thus far examined. Up to date some twenty odd mouse tumors had been cut, giving positive results, using the silver method of Levaditi. In the more virulent tumors the organisms were present in great numbers distributed in the consecutive tissues around the margins of the tumors and in the connective tissue stroma. They were occasionally found between the epithelial cells and were known to have been present in one of the strains in 1905, when they were first detected in large numbers in vacuoles in the epithelial cells of one of the transplanted tumors. They were now apparently constantly present in three separate strains of transplanted tumors, one being the Jensen tumor and two tumors of American origin. The presence of these organisms was interesting from the fact that they had constantly accompanied these transplanted tumors for so long a time and that in preparations stained in the ordinary way there were no alterations in the histology of the tumors which could be deliberately attributed to the presence of the spirochete. Having found the organisms over twenty times consecutively by the Levaditi method, three primary mouse tumors which did not communicate with the air, being entirely enclosed and movable beneath the skin, of small size, were removed aseptically and carefully sectioned after impregnation with silver. In two of these tumors the impregnation method was obviously not successful. In one of these occasional badly fixed organisms could be found. The condition of the tissue in the other made it obvious that the method was not successful. The third tumor examined was properly impregnated and contained large numbers of organisms scattered through the tumor, but most plentiful in the actively growing portions. Here they were found among the epithelial cells, usually surrounded by small vacuoles. They were invariably present in the larger cysts of the tumor, which was an adenocarcinoma. They were characteristic in appearance, from 4 to 6 microns long, with very closely round, abrupt gyrations, each measuring not over one-half a micromillimeter. Involution forms were not infrequent and fields showing active phagocytosis

on the part of the epithelial cells were to be found. In these cells the organisms were found curled into rings or irregular masses, making inclusions such as had already been described by Prowazek for the organism producing spirochetosis in the fowl (Brazil). By careful examination of the transplanted tumors this organism could be seen in the fresh state. It was very small, very actively motile, moving rapidly forward and backward. It occasionally came to rest, when the gyrations could be seen, but its dimensions were so minute that neither flagella nor an undulating membrane could be seen. All attempts to stain this organism with Giemsa or other aniline stains had been fruitless. In this respect it appeared to differ from similar organisms seen in ulcerating tumors described by Loewenthal and Borrel in unulcerated mouse tumors in the Pasteur Institute, one from Ehrlich's laboratory. Similar organisms had been found by Freudenthal in an unulcerated human cancer. Loewenthal and Ewing and Beebe had found them in smears from dog tumors, and there was every reason to believe that this organism or similar organisms were widely distributed. In connection with the possibility of these organisms having an etiological relation to these tumors, Dr. Gaylord pointed out that the recent work of Fischer, showing that Scarlet R would induce proliferation of the epidermal epithelium of the rabbit's ear when injected beneath the skin, might afford a possible explanation of how an organism like a spirochete could induce proliferation through the medium of some toxic substance. The distribution around the periphery of the transplanted tumors of the organisms, in the light of Fischer's work, was suggestive, and the evidences of phagocytosis on the part of the epithelial cells would explain how the organism could be transported by the cells and continue the irritation necessary to the development of metastases. The reader suggested that the task before them consisted in careful examination of uncontaminated human tumors for the purpose of determining with what regularity these or similar organisms were present, bearing in mind that in the light of Fischer's work very few organisms could produce extensive proliferation, and that inasmuch as Scarlet R affected only the epithelium of the epidermis in the rabbit and had no effect upon the epithelium of other regions in the rabbit, it was highly probable that they were dealing with a large group of organisms, each of which produced a toxin, or, as Fischer called it, an attraxin, for certain kinds of epithelium. It was, therefore, not necessary to look for a specific organism, but rather an organism of a specific group, and it must be borne in mind that there were difficulties in distinguishing between the different spirochetes thus far described.

Experimental Research in Connection with the Transplantation of Carcinoma in Mice.—Dr. H. G. A. Clowes of Buffalo presented this communication, which was a summary of his remarks made at Cleveland January 11, 1907. He said that experimental research in cancer had received an enormous stimulus in the course of the last few years through the discovery of the ease with which mouse tumors might be transplanted from one individual to another. A large number of primary tumors had come into the possession of the New York State Cancer Laboratory in the course of the last three years. During this period numerous experiments had been carried out in this institution, having in view the determination of the exact conditions under which physical and chemical agents inhibit the development of rapidly proliferating tumor material, and also of the conditions under which immunity against cancer occurred. Three main types of tumor had been employed, possessed of low, of intermediate, and of extremely high virulence, respectively. In the latter series a yield of over 95 per cent. of tumors was obtained and the average period of time required for a fatal development was twenty-five days from the date of inoculation. In order that records of the experiments carried out might be rendered permanent, a system of making charted diagrams of the tumors in individual mice was adopted from the start, and owing to this system it was discovered at an early stage that a considerable number of mice recovered even after their tumors had reached considerable dimensions. The occurrence of such spontaneous recoveries was found to be most frequent in those groups inoculated with the least virulent materials and less frequent in those treated with the highly virulent, rapidly growing tumor referred to above. The subsequent inoculation of mice which had recovered spontaneously with tumors of an equal or even greater virulence than that first employed demonstrated that the animals in question were possessed of a marked immunity, practically no tumors occurring in such cases, while control animals showed a normal percentage. The tumor cells had been shown to be very resistant to the action of chemicals, withstanding the treatment with mercuric chloride, potassium cyanide and other bodies of this nature, of a concentration sufficiently great to destroy bacteria. They also showed a considerable resistance when inoculated at relatively high temperatures, ranging from 40° C. to 45° C.; in fact, tumors possessed of a very low grade of virulence might be stimulated to increased activity by inoculation at temperatures ranging from 38° C. to 41° C. for half an hour previous to inoculation. Evidence of the existence of immunity against cancer was presented as follows: (1) The occurrence of spontaneous recovery from true cancer. (2) Such spontaneous recoveries were not reinoculable. (3) The reduced percentage of tumors obtained on reinoculation of those mice which failed to take after the first injection of tumor material. (4) The reinoculation with highly virulent materials of mice which had been previously treated with a weak strain, which, according to Ehrlich, lead to a considerable reduction in the percentage of tumors, as compared with normal untreated mice. (5) An experiment was carried out as follows: 100 mice were inoculated in the neighborhood of the head with the virulent tumor strain referred to above, with the result that over 95 per cent. showed tumors of considerable size in ten to fourteen days, at which time they were reinoculated in the region of the tail with tumor strains of an equal or greater virulence than that originally employed, while in all cases a series of unused mice were employed as control. After a further period of ten days it was found that large tumors had developed in all the control animals, but that those animals in which tumors were already developed before the second inoculation showed relatively little signs of tumor development at the second point of inoculation. This experiment, together with the fact that metastases seldom occurred in the early stages of tumor development in mice, would indicate the probable existence of antibodies in the serum antagonistic to development of isolated tumor cells. (6) The serum of spontaneously recovered mice appeared to exert a slight effect upon growing tumors when injected directly and also to interfere to a certain extent with the development of tumor cells when admixed with the latter previous to inoculation. In their experience no immunity had so far been obtained by means of inanimate materials as, for example, tumor cells destroyed by heat, tumor cells treated with an overdose of chemicals, and nucleoproteids extracted from virulent tumors following the procedure adopted by Beebe in his work on exophthalmic goiter. The evidence so far obtained might be said to harmonize most readily with the parasitic theory of cancer. Ehrlich's recently advanced theory that cancer cells proliferate in virtue of their possessing side chains having greater affinity for food than those of the normal body cells was perfectly compatible with the parasitic theory, providing the parasite or its excretory products be looked upon as the *x*-body of Ehrlich playing the part of a stimulating or sensitizing agent. In conclusion he said that it should be stated that all the evidence thus far obtained of the existence of an immunity against cancer would indicate that that immunity was brought about by

a process analogous to vaccination, the individual infected with an attenuated or mild form of the disease from which it recovered being found on subsequent inoculation to possess an immunity against cancer strains of equal or even greater virulence.

Cancer as a Biological Problem.—Dr. Gary N. Calkins of New York discussed the question from this point of view, illustrating his remarks with a lantern-slide demonstration and the exhibition of specimens.

Wednesday, January 30—Third Day.

Sahli's Desmoid Reaction.—Dr. H. C. Carey of Troy read this paper. After describing the method employed by Sahli, he reported upon the work done by him in the use of capsules, tied at either end with catgut. The capsules contained methylene blue, which he considered to be superior to iodine or salicylic acid. When the catgut was dissolved by the acids in the stomach, this liberated the methylene blue, and its presence was noted by an examination of the urine. This method was of value in determining the digestive sufficiency of the gastric juice and its ability to digest a meal with which the capsule was given. This method was not at all suited to differentiate the functional disorders and did not take the place of the stomach tube and test breakfast.

A New Disease; History, Symptoms, and Pathology of a Hitherto Unreported Lesion.—Dr. Henry P. De Forest of New York read this paper. He reported the case of a man with inflammation of the thoracic duct. At Autopsy all the organs were found to be normal except the kidneys and the liver. On careful search a mass the size of a bologna sausage was found. In the center of it was an abscess cavity, which easily admitted the finger. The mesenteric glands were greatly enlarged. This mass was at the receptículum chyli, and the condition extended from there up to the jugular vein. Several masses were noted, all distinctly nodulated, and all the size of a finger. The pus could be squeezed from the thoracic duct into the jugular vein. The clinical history showed that there was first a ptomain poisoning from shell fish. Then aggravated symptoms followed the eating of cold storage duck, greatly lessening the resistance of the intestines, therefore allowing ptomains to gain access to the system and bacteria as well, the pyocyaneus showing the blue pus. When each valve was overcome there would be a chill, and, when finally the abscess perforated into the jugular vein, the symptoms of septicemia developed as shown in last week of life.

Blood Pressure Study; Some Unexpected Revelations.—Dr. Henry L. Elsner of Syracuse read this paper. He spoke of the importance of arterial tension for diagnostic and therapeutic purposes. He did not underestimate the fact that we were not always able to determine the vascular tension of man with absolute precision, but held that the sphygmomanometer of to-day gave sufficiently accurate information of systolic, diastolic, and pulse pressure to justify safe conclusions. A large part of the paper was devoted to the consideration of chronic arterial hypertension and the baneful results which followed unless the underlying process was controlled. Hypertension was usually a compensatory measure, and it was often a mistake to give drugs which lowered blood pressure without considering primary causes. Longevity depended on cardiovascular competence. Hypertension was usually accidentally discovered. In 600 consecutive examinations chronic arterial hypertension was present in 1¼ per cent. This gave no idea of the frequency of this condition, and the writer was certain that a larger number of cases would be discovered if an equal number of supposedly healthy individuals engaged in active pursuits between the ages of 35 and 50 were subjected to blood-pressure study. This condition of hypertension was found in the strenuous and active. Its early recognition and control were of economic importance to the State and to the nation. The rapid development of arteriosclerosis in professional men after short periods of hypertension was a depressing and alarming fact. Worry as a factor in causing hypertension was considered. It was shown by clinical experience that exophthalmic goiter was, as a rule, a disease of hypertension; that its persistency was often associated with, or led to arteriosclerosis. Diabetes was very likely to be associated with hypertension, leading to deep changes in the walls of arteries. Peritonitis and typhoid fever, with its complications, were considered, and it was demonstrated that with the former, during the early hours of its existence, blood pressure was likely to be raised. Localized peritonitis with typhoid, also the early hours following the perforation of the typhoid ulcer, were associated with rising blood pressure, a fact which was of great importance in diagnosis. The effect of drugs on blood and pulse pressure was considered and its importance demonstrated. It was shown that in spite of high blood pressure, pulse pressure might be very low; thus with the high blood pressure and low pulse pressure valuable indications for cardiac stimulation were given. The effect of filling the splanchnic vessels in the presence of pulmonary edema was considered. The use of nitroglycerine with adjuvants for this purpose was recommended in the presence of an insufficient heart with peripheral arterial obstruction and associated pulmonary edema.

The Classification of Blood Pressure Cases.—Dr. Louis Faugères Bishop of New York read this paper. It was not his intention to attempt a complete classification of circulatory diseases, all of which were dependent in their ultimate analysis upon the distribution of blood pressure, but rather to advocate that a particular set of cases, which he described as hypertonia vasorum idiopathica, had a place in such a classification. On former occasions he had classified departures from the normal in blood pressure under three principal classes, primary low arterial tension, high arterial tension, and secondary low tension. He had also described certain special cases under the name "Constitutional Low Arterial Tension," etc. He now wished to subdivide our high pressure cases into those due to nervous causes, and those due to other causes. As high arterial tension in connection with the classical cases of kidney disease had been so often described, he passed them over to go on to the description of the other type. Hypertonia vasorum idiopathica stood for a class of cases in which high arterial tension often existed, but which evidently were neither of nephritic origin, nor had their origin in changes in the blood vessels. The causes were found in changes in men's habits. The present time was characterized by overwork and worry on the part of a larger proportion of the community than formerly. Men live in a state of mental tension that we believe to be the cause of the increasing number of persons who suffer from this disorder of the circulation. The treatment of this condition must of necessity be by creation of such influence as would counteract the tendency. This was possible by the employment of drugs, which for the time being will prevent damage, but other means must be employed. It had long been known that physical exercise would prevent or postpone the breakdown that eventually follows overwork and worry. This was due to something more than the indirect general good effect of exercise on the health. It was due to the fact that there existed a muscle tone maintaining function of the central nervous system that had a close relation to the blood-vessel tone maintaining function. By bringing into healthy activity the one by exercise of the voluntary muscles, the other was favorably influenced. While this was true of ordinary use of the voluntary muscles, it seemed to be more true when resistance exercises were employed. Walking down stairs seemed to be a resistance exercise, and had undoubted value in cases of weak heart with a tendency to hypertonia. Diet was also an important element, and must usually take the form in these cases of restricting certain articles of food. Sugar and red meat could be pronounced as a matter of experience to be harmful. Red meat might have some direct influence on the tone-maintaining function of the muscles of the blood-vessels. We had

called the disease idiopathic because that is the custom when the exact causes had not been definitely traced out. There was nothing wrong in the early stages with the circulatory system. There was only something wrong with the way in which it was acting. The cure of hypertonia vasorum consisted in regulating the functional activity of the brain, heart, and blood-vessels so that they should run smoothly. In some cases this was easily accomplished, and in others only with great difficulty, but it was never accomplished by a single prescription or any other single measure. It would be just as irrational to employ a physician to cure a circulatory disorder by a single prescription as to employ an engineer to start an engine, and then dismiss him only to be employed again in case of a breakdown. The only successful treatment was by the regulation of the circulation and the gradual adjustment of measures to this end, until finally the vicious habit was broken up and the tendency to hypertonia overcome. The most valuable drugs could not be given in efficient doses, except under constant supervision. It is easy also to carry exercises too far, which at the time when they were ordered were entirely correct. Nowhere else in medicine do they come more forcibly to the consciousnses of the wrong position in which the physician was placed when he is only called upon to repair damage—in this case damage which never should have occurred.

Dr. Theodore Schott of Bad-Nauheim, Germany, after referring to the various instruments in use for determining the blood pressure, said that what was revealed by them was of little if any value without further clinical observations; it was only just one help. In the use of the instruments, these sphygmomanometers, a difference of from 30 to 40 mm. of mercury would be noted in some cases when they were applied above the level of the heart or below it and in one minute's time. High blood pressure was only a symptom, and must be combined with further observations of the case. He emphasized the point that this was only one of the signs, and nothing else.

Dr. DeLancey Rochester of Buffalo emphasized the importance of becoming an expert with one instrument, and not attempting to use many of them, and of making several observations. By the use of the sphygmomanometer he had been able to save, without doubt, some lives from perforation in typhoid fever. He called attention to the fact that nitroglycerin was very evanescent in its effects.

Dr. A. Jacobi of New York said that the New York City Health Department had collected samples of tablets of nitroglycerin from various parts of the city and from the wholesale druggists, and they found that tablets calling for a certain dose ranged from 1-100th of a grain to 1-2500th. One who used these tablets was continually in danger of getting that which was worthless.

The Criminal Lunatic: His Status and Disposition.—Dr. Robert B. Lamb, Medical Superintendent of Matteawan State Hospital, read this paper, dealing largely upon the present New York practice of dealing with the criminal insane. The different forms of commitments on criminal orders were discussed, and certain apparent defects in the prevalent system were pointed out, with remedies therefor. Dr. Lamb regretted that no legal cognizance was now taken in cases of diminished responsibility or constitutional inferiority, the old legal definition of insanity being the only interpretation generally permitted in the Courts. The customs of permitting lay juries to pass upon the mental condition of criminal lunatics, and of constituting commissions of lunacy with a medical minority, were strongly condemned. Mention was made of the general attention this special line of work was now attracting, both the bar and medical societies recognizing the need of betterment of present conditions. Now was the movement active in this country, since Dr. Lamb stated that his paper was suggested by a series of inquiries made by the authorities of Germany.

The Visions of Mary Czajka.—Dr Francis E. Fronczak, Assistant Health Officer of Buffalo, presented this communication by title. A nineteen-year-old Polish girl gained a reputation of being able to foretell the future, and to communicate directly with heaven and the saints. Great crowds visited her at certain hours while she had these "visions." She would sit in a chair, suddenly stiffen out, become perfectly unconscious of all her surroundings, and in a few seconds repeat slowly what the Blessed Virgin or the saints would tell her. She was held in great admiration until after a thorough medical examination, when she was declared to be suffering from hysteria and exaggerated hallucinations. At present only a few people saw her, and she seldom had the "visions."

The Importance of the Routine Examination of the Urine for Indican.—Dr Joseph Day Olin of Watertown presented this communication, in which he emphasized the importance of a routine test for indican, from the standpoint of its significance and frequency of occurrence in some of the more common ailments.

Underfeeding and Its Associated Ills.—Dr Dudley D. Roberts of Brooklyn read this paper, in which he said that the determination of underfeeding was to be made only by the effect of an increased diet. Certain suggestive criteria were to be found in the physical condition, the symptomatology and accurate determination of the food habits, and this determination could only be reached by painstaking cross-examination of the patient. He considered the fundamental causes of underfeeding, the saving of time and money, the loss of appetite, and the subjective disturbances of digestion. Among the clinical types were the gastric, the intestinal, the anemic, and the nervous. He told of the cure in forced feeding, and the moral and suggestive aids.

Dr. Heinrich Stern of New York stated that when speaking of underfeeding we should at first know who was underfed. Was that individual underfed who had but a few pounds in body weight? Was not that individual to be considered as underfed who could not perform his accustomed amount of work without exertion, and who had deteriorated in so far as his specific gravity, his corporeal density had declined? Might not the supposed loss of absolute weight be a physiological phenomenon, might the individual not have been too heavy for his various digestive and assimilative organs? Dr. Stern said that he had pointed out, some years ago, that it was not the absolute weight alone which determined a man's obesity, but his specific weight, his body-density. Accordingly, he demonstrated four different types of obesity: (1) That characterized by increased body-density, when one had a surplus of muscle tissue; (2) the type in which the specific gravity remained about stationary, when one had an increase of both muscle and fat tissues; (3) the type when one had loss of body albumin, but increase of fat structures, when one had a decrease of specific gravity; (4) the type in which loss of body albumin was going hand in hand with increase of fat and water, when the specific gravity of the organism was at the lowest point. We had to reckon with an analogous condition in the underfed. It would lead him too far, Dr. Stern continued, to dwell at length on these points on this occasion. He had frequently committed his thoughts and experiences to print. Suffice it, he said, that we must first know whether an individual was underfed before we attempted to cure him. There was a cardinal factor always to be remembered, namely, that most so-called underfed individuals ingested sufficient material, but that they did not utilize it properly. That is to say, they filled up the stomach and intestines with a great deal of food, but their intestinal functions were deficient in so far as they did not suffice to elaborate properly the real nutrients from the crude ingesta, and that assimilation was not carried on in a physiologically sufficient manner. These individuals might starve even if their stomachs were loaded with food. In his opinion, all treatment of the underfed lay in the treatment of the underlying deficiency of the intestinal functions. This must

be attended to first, before one could think of upbuilding the organism. All feeding, without this preliminary treatment, he continued, would be useless. In overcoming the marasmus of children, it was specially the fat which was not absorbed. In such instances, fat substances which did not yield fatty acids of low melting degrees, should be prescribed. For infants, nothing, Dr. Stern concluded, was worse than the fat of cow's milk, which contained 10 per cent. and more of volatile fatty acids, which were liable to be converted into acetone substances; and nothing better than the uncooked yolk of the hen's egg, which yielded only fatty acids of high melting power.

The Technique of the Ablation of the Breast.—Dr. Parker Syms of New York read this paper and said that the modern methods of removing cancer of the breast were far in advance of the older ones, and, while much more extensive and radical, they might be done so as to cause less shock and risk to the patient. The death rate from the operation was very low, and the final results as to permanent cure were far better than under the old régime. Dr. Syms preferred the method of Dr. Willy Meyer to all others. It was anatomical, never atypical, and, if properly done, was bloodless. The blood-vessels were all cut at their trunks and not at their small branches. One half a dozen to a dozen artery clamps were ample. The method did not consume too much time, for one hour to one hour and a quarter should complete it. The carcinoma was not cut into, the lymphatics and veins were removed from above downwards and not in the direction of their current. There should not be any shock, and the patient might be out of bed within forty-eight hours. Death from the operation should be very rare. Motion and proper function of the arm were not interfered with and the blood circulation of the arm was seldom impaired. Dr. Syms regarded this method of operating as one of the greatest advances in modern surgery.

Dr. Bonner of Brooklyn said that during the last five months he had operated upon three cases of carcinoma of the breast, doing the operation according to the method of Dr. Meyer. All were in the early stages and well nourished. He thought it was a mistake in the technique to permit the oozing to settle down without permitting drainage, which might occur in the method pursued by Dr. Syms. Grafting was better than cicatrization of the wound, because it permitted of better motion afterwards.

Dr. Joseph D. Bryant said that the principles involved in the operation were most profound and of significant benefit, contemplating the removal widely of the diseased tissues and all the tisuses that were likely to become involved; but he wished to supplement what had been stated by saying that operative procedures should be continued when there were the slightest manifestations of return; in other words, the disease should be fought to a finish.

Dr. Gregor of Watertown said that he always carefully packed the axilla and used rubber drainage, which remained in one week, and the patient was discharged as a rule on the tenth or twelfth day.

Dr. Syms said that he would drain the posterior space if he was not absolutely sure that all oozing had ceased, and that he drained more than one-half of his cases. The question of grafting must be left to the decision of the individual operator. The supplementary incision of Warren, or better yet, that of Jackson, would provide a flap which could be so slid to close the defect made.

Surgical Treatment of Goiter.—Dr. Martin B. Tinker of Ithaca read this paper. He said the relatively infrequent occurrence of goiter in America partly accounted for lack of acceptance of operative treatment. Sudden deaths from appendicitis or extrauterine pregnancy aroused the public and profession to realize the necessity for radical measures, but the slow development of alarming symptoms of goiter had made all concerned ready to temporize with goiter. In Switzerland goiter operations were more common than appendectomies in this country and less dangerous. The term goiter was used to include various tumors, benign and malignant as well as simple, hypertrophic and exophthalmic goiter. Little that was definite was known as to the etiology of goiter; it was more common in women at puberty or pregnancy, sometimes followed nervous strain, and was far more prevalent in mountainous districts. The symptomatology was briefly discussed; pressure symptoms occurred with all large tumors, and when difficulty in breathing and swallowing, changed voice, cough, or even bloody expectoration occurred, with small tumors, malignancy should be suspected. In operating local anesthesia was advised; a low transverse incision avoided visible scar; placing the incision between the branches of distribution of the superficial cervical and supraclavicular nerves made local anesthesia simple; the sternothyroid and thyroid group of muscles were divided high to avoid injuring the nerve supply; arteries were secured first, then all veins; the recurrent laryngeal was carefully avoided. Charts and dissections illustrating the anatomy were presented. Statistics of prominent internists showed a mortality much higher than the operative mortality of experienced surgeons. Personal experience without deaths and with highly satisfactory results was quoted. Operation should be urged after thorough trial of palliative measures had failed to give relief.

Clinical Features and Operative Treatment of Thyroid Affections.—Dr. George E. Beilby of Albany presented this paper, in which he made a classification of the diseases of the thyroid gland, clinical features, and diagnosis. He gave reports of illustrative cases and discussed the operative technique, with special reference to the management of Grave's Disease, or exophthalmic hypertrophy.

Dr. Joseph C. Bloodgood of Baltimore, Md., said that the good results of the treatment of exophthalmic goiter depended more upon the early stage of the disease when it was begun than upon perhaps any particular method of operation. If one expected to get permanent results by the removal of one-half or two-thirds of the gland, it must be done in the early stage. A few years ago it was noted that after operation the patients improved very rapidly and the results were supposed to be beautiful; but after a few months it remained stationary. In some cases operated upon late there was no improvement, but recurrences. With regard to the so-called aberrant tumors of the neck, frequently they cut down upon them, removed them, and later the tumor proved to be made up of thyroid tissue, and the surgeon was surprised to find myxedema develop. In eight per cent. of such cases myxedema had developed. As far as malignant growths of the thyroid were concerned, he had never known of a cure after the picture of malignaney had developed.

Some Recent Clinical Observations in Intestinal Obstruction, Both Acute and Chronic, with Demonstration of Specimens and Illustrations.—Dr. Joseph C. Bloodgood of Baltimore addressed the Society on this topic. Intestinal obstructions was not a common disease. In Dr. Halsted's clinic only 106 cases were on record. In a large clinic in Germany they only averaged 70 during the last 20 years. As a rule the general practitioner saw these patients first, and it should be impressed upon them that the mortality of intestinal obstruction was very great if operation was delayed more than 48 hours. The mortality of operation 48 hours after the onset was about 70 per cent.; within 24 hours the number of recoveries was 70 per cent. Therefore, the results were a matter of time. The question arose as to the possibility of recognizing obstruction of the intestine within that limit. He said it was possible if certain rules, which were difficult

to follow, were followed. Every individual suffering from abdominal pain might be developing intestinal obstruction; yet out of 100 so suffering only two or three would develop it. In looking over his cases his experience taught him that any patient who had pain enough to require the use of morphine, if the pain was not in the region of the kidney or gall-bladder, and not followed in a few hours by watery stools, might be presenting the symptoms of a beginning obstruction of some form. According to the pathology he divided these cases into two groups: first, strangulation in which the lumen was not only obstructed, but the circulation interfered with as well, and, secondly, obduration, in which the lumen was blocked, but with no interference with the circulation. In the first, the symptoms were more acute, an immediate operation was more demanded, and the diagnosis easier. In the second, the symptoms were less acute, the importance of early operation was not so great, but unfortunately the diagnosis was more difficult. The cause of abdominal pain was not yet known. Whenever a patient suffered acutely from abdominal pain, initial vomiting, and shock, he advised against the giving of morphine. Give no treatment except a rectal enemata and wash out the stomach.

Toxic Nephritis Dependent Upon Surgical Conditions.—Dr. NATHAN JACOBSON of Syracuse read this paper. He presented three cases. The first one was presumably of staphylococcus infection in which the patient suffered from septic endocarditis as well as from nephritis; the second was a case of intestinal obstruction without septic disturbance of any kind, and in which in consequence of the complete arrest of intestinal function a very serious and all but fatal form of nephritis was awakened; the third was one in which there was complicating gallstone disease, a subacute pancreatitis, and in consequence of the disturbance of the secretory function of this gland a toxic condition was aroused, causing not only a nephritis, but also glycosuria. In each of these three cases, after the removal of the causal condition all evidences of renal disease disappeared.

The Surgery of Foreign Bodies in the Respiratory Tract.—Dr. W. G. MACDONALD of Albany presented this communication. He said that foreign bodies aspirated into the respiratory tract would always be an important chapter in emergency surgery so long as infants were permitted and adults voluntarily used their mouths as storehouses for an infinite variety of foreign bodies. Until very recently the mortality associated with this accident was very great, being from 15 to 27 per cent. in operated cases and from 23 per cent. to 51 per cent. in the non-operated cases. The material improvement in the mortality might be attributed to the greatly increased skill of those who were especially interested in the field of the respiratory organs. The discovery and universal employment of the Roentgen ray for diagnostic purposes, the inventions in mechanism of the direct inspection of the larynx, trachea, and bronchi, and the recent development in technique had conspired to make diagnosis more certain and operative technique more simple, sure, and successful. Dr. Macdonald then referred to the striking features which presented in fourteen operative and two nonoperative cases and gave a cursory review of the literature. A very striking feature lay in the size of the bodies aspirated. In one case was a hatpin, fourteen cm. long and having a glass head more than one centimeter in diameter; artificial tooth plates having as many as four teeth had been aspirated, etc. From his clinical experience Dr. Macdonald said that the normal plan of treatment of foreign bodies lodged in the deep trachea or bronchi was a preliminary inferior tracheotomy. If the body was mobile, a wide tracheal incision, well held open, would lead to the expulsion through the violent attacks of coughing. If the body was fixed in the bronchus or the lower trachea the bronschoscopem, using a shorter tube, might be employed. With bodies fixed deep within the trachea there was failure to secure their removal at the primary stage in about ten per cent. of the cases. Under such circumstances the edges of the tracheal wound should be sewed to the skin, a large tube introduced, and the operation ended.

Foreign Bodies in the Uterus.—Dr. B. S. TALMEY of New York read this paper. He said that the occurrence of foreign bodies in the uterus was relatively rare, and hence every case should be reported. The cases might be divided into three classes as follows: (1) Those introduced into the uterus for the purpose of emptying the contents of conception; (2) those introduced into the uterus by accident; (3) those introduced for onanistic purposes. To the latter class belonged the first case, a girl, 19 years old, in whom was found a hairpin sticking in the cervical canal. The second case belonged to the first class, where a bougie 22 centimeters long was introduced into the uterus, perforating the same. The laparotomy showed the bougie to be buried under the loops of the intestine. Dr. Talmey said that, although these cases were rare, still it would be of use to make the practitioner familiar with the question.

Further Observations Upon the Treatment of Diffuse Septic Peritonitis Following Appendicitis, with a Report of One Hundred and Forty-five Cases Treated by the Elevated Head and Trunk Positions.—Dr. RUSSELL S. FOWLER of Brooklyn read this paper, and in conclusion stated the salient points in the treatment of these cases were as follows: 1. A small incision and the avoidance of eventration. 2. Thorough cleansing of the primary focus of infection and removal of the appendix. 3. Vacuation and cleansing of all accessory abscess cavities and the pelvis before washing out the peritoneal cavity. 4. A rapid systemic flushing of the peritoneal cavity with hot saline. 5. The continuance of the saline flushing until the sutures were placed, and for the most part tied. 6. The provision of proper drainage for the pelvis, either by means of a large glass tube containing a capillary drainage strip emerging through the lower angle of the wound, or in females by a large caliber rubber tube filled with wicking passed through a posterior colpotomy incision. 7. The drainage of accessory abscess cavities with gauze or wicking. 8. The elevation of the head of the bed to accelerate the drainage of septic fluid into the pelvis, whence it could be removed through the tube, or in case of vaginal drainage find a ready exit. He stated that there were a few cases of diffuse septic peritonitis which might be safely closed without drainage.

A New Operation for the Radical Cure of Femoral Hernia.—Dr. A. V. MOSCHCOWITZ of New York presented this paper. In his introductory remarks he reviewed the large number of operations that had been done hitherto, and pointed out their shortcomings. These shortcomings were due to the fact that they did not permit a high closure of the peritoneum, and that they did not close up the internal femoral ring. In order to obviate these faults, he operated through an incision in the inguinal region, and converted the femoral into a direct inguinal hernia. The sac was then ligated or sutured in the usual manner, which could be readily done under the guidance of the eye, and so high up as to obviate the formation of a peritoneal dimple. The internal femoral ring was then closed by suturing Poupart's ligament to Cooper's ligament and to the periosteum of the pubic bone. The subsequent steps of the operation were those of the Bassini operation for inguinal hernia. Dr. Moschowitz then pointed out the ease and facility with which the operation could be done, and the other advantages, particularly [illegible] of strangulation. He said he had operated [illegible] operated upon twenty cases, the first case having been operated on in May, 1905. All the cases had been under continuous observation, and the [illegible] of a recurrence.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS FOR THE STATE OF TEXAS.

Galveston, June 6, 17, and 18, 1906.

Each applicant will answer ten questions of his own selection in each of the following papers:

ANATOMY.

1. Describe the fifth cervical vertebra.
2. Give the origin, insertion, and action of the pectoralis major muscle.
3. Name the muscles which supply the tongue and give their function.
4. Give the relations of the radial artery, and name its branches.
5. Describe the spleen.
6. Name the points of surgical interest of the popliteal space.
7. Name the ligaments which suspend the uterus.
8. What area is drained by the right lymphatic duct?
9. Describe the elbow joints.
10. Describe the artificial divisions of the abdomen, and name the contents of each subdivision.
11. Describe the great sciatic nerve.
12. Describe the rectum.

PHYSIOLOGY.

1. Explain what is meant by "blood pressure" and "peripheral resistance."
2. At what point in the circulatory system does the blood flow most rapidly?
3. Which travels with greater rapidity, the pulse or the blood stream?
4. In what organ is lymph most rapidly formed?
5. How is digestion modified by the absence of hydrochloric acid from the gastric juice?
6. To what kind of diet is the addition of sodium chloride of most importance?
7. What are the limitations to the use of milk as the sole article of diet?
8. What is meant by "internal secretion"?
9. What is the chief source of urea?
10. What are the functions of the red blood corpuscles?
11. Why does the injection of a large quantity of normal saline solution into the vessels cause diuresis?
12. What are the functions of the pancreatic juice?

CHEMISTRY.

1. Define molecular weight.
2. Define potable, hard, and temporary hard water.
3. How is H_2S prepared? Write formula.
4. Describe the bismuth test for sugar in the urine. What is the objection to this test?
5. Mention chemical and physical properties of arsenic.
6. Upon what reaction does the copper test for sugar in the urine depend?
7. What do you understand by diffusion of gases?
8. What is the chemical antidote for bichloride of mercury?
9. What are the chemical incompatibilities of iron and antipyrine?
10. What are fats, what are soaps?
11. Give atomic weight and valence of hydrogen, lead, sulphur, and mercury.
12. What is the relation between albumin and the specific gravity, and sugar and the specific gravity of the urine?

HISTOLOGY.

1. To what part of the anatomy does histology apply?
2. What relation does a knowledge of histology bear to physiology?
3. Describe in a brief way the histology of the kidney.
4. Give the minute anatomy of the liver.
5. Name the minute endings of the bronchi.
6. What are Haversian canals and where found?
7. Mention the communication between the great systemic blood vessels.
8. Mention the three great groups into which the tissues of the body are divided.
9. What are the principal forms of fibrous tissue?
10. Mention principal difference between cartilage and bone.
11. What structures compose secreting glands?
12. What are lymphatic glands, and where are they found?

PATHOLOGY.

1. Describe in a brief way the pathology of yellow fever.
2. In what part of the system would you expect to find primarily the infectious element in yellow fever?
3. From results of recent investigations, what, in your opinion, is the infectious element in yellow fever, and how is it conveyed?
4. What other infectious disease, common in the country, the morbid appearances of which sometimes so much resemble those of yellow fever?
5. What, in your opinion, is the source of infection in malarial diseases?
6. In malarial cachexia, or chronic malarial poisoning, what morbid conditions are usually found?
7. A case—age 26. Recurring hematemesis, profuse—enormously enlarged spleen. Anemia—lemon-tinted skin—moderate general dropsy. Sclera bluish white; digestion poor, with inclination to costiveness. History: Two or three terms of chills in boyhood, each lasting one year or more. Diagnosis made without microscope. Gave him quinine in acid solution for six or eight weeks—nearly 400 grains in all. Spleen reduced like magic to almost normal size, no more hemorrhage, dropsy disappeared, skin resumed more natural tint, when he passed from under my care. What, in your opinion, was the morbidity causing the hemorrhage; and what caused this morbidity?
8. Where would you expect to find pathological lesions in hydrophobia, and mention some of the most pronounced.
9. What pathological lesions to be found in simple acute endocarditis?
10. How does endocarditis differ from acute plastic pericarditis pathologically?
11. Which of these will likely affect most seriously the circulation of the blood, and why?
12. Mention some disease which is most commonly the cause of either or both of these morbid conditions.

PRACTICE.

1. What is intestinal obstruction and its pathological anatomy?
2. In acute indigestion resulting in cholera morbus, what would be your first plan of treatment?
3. What are biliary calculi, their cause and treatment?
4. How would you diagnose and treat a case of gastric cancer?
5. What is sciatica, symptoms, and treatment?
6. What are the symptoms and treatment of acute catarrhal laryngitis?
7. How would you diagnose and treat a case of diphtheria?
8. What are the methods employed in making an examination of the heart? Describe the same in normal condition.
9. What is epilepsy, its cause, and varieties?
10. What is interstitial nephritis?
11. What is anemia, its causes, and pathological anatomy?
12. How would you diagnose a case of croupous pneumonia?

SURGERY.

1. Give the principal methods of abdominal drainage with which you are familiar. What method do you consider best?
2. How would you treat a case of ingrown toe-nail?
3. Mention the most important symptoms of an acute synovitis involving the hip-joint.
4. Give your treatment of a large varicose ulcer of the leg.
5. What are the principal signs of a simple fracture involving the femur?
6. What important tissues may be accidentally wounded during an operation for femoral hernia?
7. What are the symptoms of acute intestinal obstruction?

*It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.

8. How should an aneurysm of the femoral artery be treated?
9. How would you treat a large varicocele?
10. Describe in detail how you would correct the deformity and dress a case of Colles' fracture.
11. Describe in detail how you would proceed to control hemorrhage during an amputation of the hip-joint.
12. How would you treat a carbuncle?

EYE, EAR, NOSE, AND THROAT.

(Four questions to be answered.)

1. What are the dangers of otitis media?
2. How would you make a differential diagnosis between a case of diphtheria and a bad case of follicular tonsillitis?
3. Upon what would you base a diagnosis of suppurating disease in the antrum of Highmore?
4. Describe in detail how you would proceed to remove a small foreign body embedded in the cornea.
5. Upon what symptoms would you make a diagnosis of mastoiditis?

OBSTETRICS.

1. (a) What is the connection between ovulation and menstruation? (b) What is the average duration of menstruation? (c) What is the interval between the menstrual periods? (d) Give the average age at which menstruation first occurs.
2. Describe the axis of the inlet and the outlet of the pelvis and the axis of the cavity.
3. How are the organs of generation divided, external and internal?
4. Describe the changes which occur in the ovum after impregnation.
5. (a) What are the uses of the liquor amnii during pregnancy? (b) During labor?
6. (a) What is puberty? (b) Describe the changes that take place in the female at puberty.
7. (a) What comprises the puerperal state? (b) Describe the maternal changes during that period.
8. Describe the lochia and the conditions that change its composition and quantity.
9. Give the diagnosis and treatment of trunk presentations.
10. In what way may delivery be arrested in twin births? Describe the management of the same.
11. Give the causes, diagnosis, and treatment of purulent ophthalmia neonatorum.
12. Give causes, pathology, and treatment of thrush.

HYGIENE.

1. What is the difference between a contagious and an infectious disease?
2. Describe two of the best methods of fumigation to prevent the spread of contagious diseases.
3. What steps are essential to prevent the spread of typhoid fever from a patient to other members of the household?
4. Describe a good plan for ventilating a sleeping-room in a temperate climate during winter.
5. What are the normal constituents of atmospheric air?
6. What are the deleterious ingredients of exhaled air?
7. What is meant by absolute and relative humidity?
8. What symptoms are produced in some persons by sudden changes from low to high altitudes?
9. Why should the principles of hygiene be observed in construction of dwellings?
10. In the selection of a building site, what things are to be sought and what avoided?
11. How would you guard against the bowel disturbances of infants during their first and second summers?
12. From what foods does ptomain poisoning arise?

MEDICAL JURISPRUDENCE.

1. Define forensic medicine.
2. Briefly enumerate the difference between an ordinary and a medical expert witness.
3. Enumerate the general rules to be observed in testifying as an expert witness.
4. Define criminal and civil malpractice.
5. Briefly enumerate what you would do if called to view the body of a person found dead.
6. What do you understand by personal identity?
7. Give a practical and reliable test for human blood.
8. State what is considered a live birth by law and what manifestations of life would establish it medico-legally.
9. If called to see a person before death suspected of having been poisoned, state what steps you would take to determine this fact both before and after death.
10. What do you understand by a dying declaration, and what is its value in court?
11. Give a differential diagnosis between opium poisoning, acute alcoholism, and apoplexy.
12. If called to view a person found dead from gunshot wound, state how you would determine as to whether it was probably suicide or murder.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS FOR THE STATE OF TEXAS, *October* 10, 17, *and* 18, 1906.

PHYSIOLOGY.

1. *Blood pressure* is the pressure on the blood due to the ventricular systole, the elasticity of the walls of the arteries, and the resistance in the capillaries. This latter is called *peripheral resistance*.
2. At the beginning of the aorta.
3. The pulse travels at the rate of about fifteen to thirty feet per second in the arteries; the blood stream travels at the rate of about one foot per second in the arteries.
4. There are two theories as to the formation of lymph:—(1) That it is formed from the blood plasma by the processes of filtration, diffusion, and osmosis. (2) That in addition to these, the endothelial cells of the capillaries exercise some influence.
5. Proteid digestion may be slightly delayed.
6. Vegetable foods.
7. During the earliest months of life milk is a perfect food. Later on it will not suffice, as it contains too little iron; further, tremendous quantities of it would have to be ingested in order to ensure an adequate supply of carbon and nitrogen.
8. It is generally held now that the glandular organs, chiefly the pancreas, liver, and the ductless glands, produce a secretion, peculiar in each case to the particular gland producing it, and which is supposed to be given off to the blood or lymph, and to have some peculiar value in the general metabolism of the body. Such secretions are called internal secretions, in contradistinction to the previously known secretions, which are carried off by a duct, and are known as external secretions. Very little is definitely known of these internal secretions, but much work is being done on the subject.
9. Urea is produced from the proteids of the food and tissues. It is chiefly formed in the liver.
10. To carry oxygen from the lungs to the tissues.
11. The normal salt solution abstracts water from the tissues of the body and causes a condition of hydremic plethora; the capillaries of the kidneys thus contain a greater quantity of blood, and capillary pressure is increased. The result is:—(1) more rapid filtration, and (2) an increased amount of urine.
12. (1) It changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; (2) it converts starch into maltose; (3) it emulsifies and saponifies fats; and (4) it causes milk to curdle.

CHEMISTRY.

1. Molecular weight is the weight of a molecule of a substance as compared with the weight of an atom of hydrogen. It may also be said to be the sum of the weights of the atoms composing its molecule.
2. A *potable* water is one that is apparently fit to drink. A *hard* water is one that forms a curdy deposit with soap. In a *temporary hard* water the hardness is due to the bicarbonates of magnesium and calcium, and can be removed by boiling and filtering.
3. H_2S may be prepared by treating ferrous sulphid with dilute sulphuric acid. Thus: $FeS + H_2SO_4 = FeSO_4 + H_2S$.
4. Albumin, if present, must be removed. Add to the urine enough Na_2CO_3 to render it strongly alkaline. Put about three cubic centimeters of the urine into a test tube, add a very small quantity of powdered bismuth subnitrate, and boil. If sugar is present the bismuth powder becomes black. The test is not reliable, for other substances than sugar will produce the reaction.
5. Arsenic is a brittle gray solid with a metallic lustre, or a black amorphous powder. It is insoluble in water, and is either odorless or has the odor of garlic. It is tarnished by moisture; in dry air it is not altered; heated in air it becomes arsenic trioxide. It combines with most metals, also with chlorine, bromine, iodine, sulphur, and with nascent hydrogen.
6. The boiling alkaline solution converts glucose into substances which are very easily oxidized, and are therefore good reducing agents. If cupric sulphate is present it is converted into cuprous sulphate, which latter is decomposed, and cuprous oxide is deposited.

7. When two gases are placed [illegible], or are separated from each other by a porous substance, the gases will pass into one another, and a homogeneous mixture is the result.

8. White of egg, in moderation, and followed by an emetic.

9. The chief incompatibles of *Iron* are: acids, acid salts, vegetable astringents, alkalies, and their carbonates. Of *Antipyrin*: nitrous compounds, ferric salts (in solution), nitrites (in solution), chloral hydrate, tincture of iodine, mercuric chloride, and tinctures containing iron or tannin.

10. *Fats* are mixtures of the glycerol esters of stearic, palmitic, and oleic acids. Soaps are the sodium or potassium salts of stearic, palmitic, and oleic acids.

11. Hydrogen: atomic weight, 1; valence, 1. Lead: atomic weight, 207; valence, 2 or 4. Sulphur: atomic weight, 32; valence, 2 or 6. Mercury: atomic weight, 200; valence, 2.

12. (1) The presence of *Albumin* may have no material effect upon the specific gravity of the urine, but (2) a specific gravity lower than normal has been held to denote the presence of albumin. *Sugar* in the urine causes a higher specific gravity.

HISTOLOGY.

1. Microscopically, to all parts.

2. *Histology* treats of the minute or microscopical structure of the various tissues and organs of the body; *physiology* is concerned with the functions of the same. Hence, a knowledge of the former is supposed to be an aid to the proper understanding of the latter.

5. The alveoli.

7. The capillaries.

8. Epiblastic, mesoblastic, and hypoblastic.

9. White fibrous, yellow elastic fibrous, mixed fibrous, mucous, and retiform; areolar and adipose tissues also contain some fibrous tissue.

10. Bone tissue is impregnated with lime salts.

11. A basement membrane, epithelial cells, vascular tissue with lymphatics, nerves, and capillaries, secreting cells which are capable of elaborating the elements proper to the particular secretion.

PATHOLOGY.

1. Rigor mortis is well marked, and appears early; the muscles are dark and dry; the skin is yellow or very dark, yellow green; subserous hemorrhages are found in the lungs and heart, and the blood may be thin and fluid. The gastric mucosa is strongly congested and swollen, and hemorrhages into the membrane and in the cavity are common; the blood is dark and thick; in the upper part of the small intestine similar lesions may be found, and in the colon there may be dysenteric necrosis. The liver is swollen, or moderately decreased, soft, and of a color varying from dark red to light yellow, with bile staining; the gall-bladder contains a small amount of dark, thick bile. The spleen [illegible] small. The kidneys show acute nephritis, often hemorrhagic. (Thayer's Pathology.)

2. In the blood.

3. Probably *Bacillus ictteroides* of Sanarelli. It is conveyed by the *Stegomyia fasciata* mosquito.

4. Severe bilious or remittent malarial fever.

5. The *plasmodium or hematozoon malariæ*, conveyed by the *anopheles* mosquito.

6. Secondary anemia; diminished number of white blood corpuscles; spleen enlarged, hard and pigmented; liver enlarged; kidneys pigmented; skin, dirty yellow color, and sometimes paraplegia and orchitis may be present.

7. Chronic malarial poisoning or malarial cachexia. Caused by the *plasmodium malariæ*.

8. The upper part of the spinal cord, pons, medulla, and cortex of the cerebrum. Hemorrhages, and dilated and congested blood-vessels.

9. Vegetations occur on the valves or in the lining membrane of the cavities of the heart. These vegetations consist, at first, of fibrin and leucocytes, later of connective tissue. Micro-organisms are also generally present.

11. The endocarditis; because the vegetations present may become broken off and carried by the circulation to distant parts of the body, thus causing embolism or infarction.

12. Both of these diseases may be caused by acute articular rheumatism.

PRACTICE.

2. Remove any irritant or offending matter; give calomel in fractional doses, and, to allay the pain, a hypodermic of morphine [illegible] and atropine (as in question 2 above), application of heat, and diffusible stimulants if shock is present. Prophylaxis includes: plain and easily digested food, the ingestion of plenty of good drinking water between meals, sufficient outdoor exercise, saline, and the avoidance of indigestion.

3. The predisposing causes are: age, sedentary habits, and obstruction of the bile ducts. The exciting cause is probably infection of the gall-bladder. The treatment during the [illegible] consists of chloroform, a hypodermic of morphine and atropine (as in question 2 above), application of heat, and diffusible stimulants if shock is present. Prophylaxis includes: plain and easily digested food, the ingestion of plenty of good drinking water between meals, sufficient outdoor exercise, saline, and the avoidance of indigestion.

7. For diagnosis, see below, *Eye, Ear, Nose, and Throat*, question 2.

SURGERY.

1. Gauze; rubber tubing; glass tubing; strands of gut, or horsehair, or silk. There is no one method that is universally best. For blood or serum, capillary drainage along a strip of gauze is best; for pus, the tubes are better employed.

3. Pain; limited movement of the joint; the limb is flexed, abducted, and everted; there may be tenderness and fullness in Scarpa's triangle and in the gluteal region; the muscles controlling the movements of the joint may undergo tonic contraction or become atrophied.

6. The obturator artery, if abnormal; the deep epigastric artery; the spermatic cord, in the male; the round ligament in the female. This latter is not of much consequence, but, if the spermatic cord is cut, the vas deferens and spermatic artery are also severed.

8. It may be treated by (1) extirpation, or (2) ligature of the common femoral or superficial femoral artery, or (3) by compression in the groin.

EYE, EAR, NOSE, AND THROAT.

1. Deafness or impairment of hearing; necrosis of the ossicles; caries or necrosis of the temporal bone; polypi; inflammation of the mastoid cells and antrum; cholesteatoma; facial paralysis; subcranial abscess; cerebral compression; meningitis; thrombosis of the lateral sinus; abscess in the cerebrum or cerebellum; death.

2. In *diphtheria* the onset is more gradual; the temperature rises to about 101° to 103° F.; the tonsils are not much enlarged, there is an exudate of a thick grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon re-forms and may be found on the fauces and pharynx as well as on the tonsils, in the exudate the Klebs-Löffler bacilli may be found.

In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white cheesy spots or plugs, which consist of broken-down epithelium, and are easily brushed away; Klebs-Löffler bacilli are never found.

3. Pain; a periodic purulent discharge from the nose; the presence of pus on puncturing the antrum; and, sometimes, fracture. Transillumination will be of service.

4. "The eye is anæsthetized, the patient is seated facing a good light, with the surgeon standing behind and supporting the head; the lids are separated and the eyeball is steadied by the fingers of the left hand, the index finger is applied to the margin of the upper lid, and the middle finger to the lower lid, and the two fingers are separated, at the same time gently pressing backward. The instruments used are either the blunt spud, the gouge, or the foreign-body needle. When the foreign body is superficial, the blunt spud will answer. When it has penetrated into the corneal substance, it must be picked or dug out with the gouge, or the needle; in such cases, the instrument is passed behind the foreign body. The wound which results must be kept clean by frequent irrigation with solution of boric acid; frequently a protective bandage is indicated. If a ring of rust is present, this also should be removed. Care must be taken to inflict as little injury as possible, and when the foreign body is deep, not to perforate the cornea." (From May's "Diseases of the Eye.")

5. Intense pain, of a throbbing character in the ear or mastoid process; a depressed and tumefaction of the posterosuperior wall of the auditory canal; great tenderness on pressure over the mastoid region; swelling, redness, and edema of the mastoid process.

OBSTETRICS.

1. (a) The connection between ovulation and menstruation is not yet definitely settled, but the two functions seem to be closely associated. It has been held that ovulation is dependent upon menstruation; also that menstruation is dependent upon ovulation; it has also been proved that each may occur without the other, and it is possible that they are both dependent upon some common (and as yet unknown) cause.

(b) About three or four days.

(c) About twenty-eight days, from the beginning of one period to the beginning of the next.

(d) In this country, about fourteen years; in warmer climates it occurs earlier.

5. (a) (1) As a protection to the fetus against pressure

and shocks from without. (2) As a protection to the uterus from excessive fetal movements. (3) It distends the uterus, and thus allows for the growth and movements of the fetus. (4) It receives the excretions of the fetus. (5) It surrounds the fetus with a medium of equable temperature, and serves to prevent loss of heat. (6) It prevents the formation of adhesions between the fetus and the walls of the amniotic sac. (7) It has been supposed, by some, to afford some slight nutrition to the fetus.

(b) It acts as a fluid wedge, and dilates the os uteri and the cervix; it also slightly lubricates the parts.

HYGIENE.

1. An *infectious* disease is one that is caused by bacteria. A *contagious* disease is one that can be communicated to a healthy person by contact with one who is infected.

5. Oxygen, nitrogen, carbon dioxide, water vapor, argon, ammoniacal compounds, hydrocarbons, ozone, oxides of nitrogen, and solid particles.

6. Carbon dioxide, crowd poison, organic matter given off from the skin and lungs, fatty acids, and pathogenic bacteria.

7. *Absolute humidity* is the amount of watery vapor contained in the atmosphere, irrespective of the temperature. *Relative humidity* is the proportion of watery vapor in the atmosphere at a certain temperature, as compared with air completely saturated (which is expressed by 100).

8. Any of the following: giddiness, dyspnea, palpitation of the heart, headache, gasping for breath, dryness of the throat, intense thirst, general malaise, fatigue, loss of appetite, nausea, vomiting, tinnitus aurium, slight elevation of body temperature, and occasionally epistaxis, bleeding from the gums, bloodshot eyes, and hemoptysis.

MEDICAL JURISPRUDENCE.

1. Forensic Medicine has been defined as the application of medical, surgical, or obstetrical knowledge to the purposes of legal trials.

2. The ordinary witness testifies only to *facts*. An expert witness, in addition, gives his *opinion* on facts or supposed facts as noted by himself or asserted by others.

3. The following, which admirably answers this question, is from Witthaus and Becker's "Medical Jurisprudence":

(1) A physician should refuse to testify as an expert unless he is conscious that he is really qualified as an expert.

(2) After accepting the responsibility, his first duty should be to make a diligent examination and preparation for his testimony, unless it be upon a subject with which he is familiar, and which he is satisfied that he has already exhausted, by reading the best authorities that he can find, and by careful reflection upon particular questions as to which his opinion will be asked.

(3) Where he is to make an examination of facts, such as the post-mortem examination of a body, a chemcial analysis, or an examination of an alleged insane person, he should insist upon having plenty of time and full opportunity for doing his work thoroughly. He should take particular pains to make his examination open and fair, and, if possible, should invite opposing experts to cooperate with him in it.

(4) He should be honest with his client before the trial in advising him and giving him opinions, and upon the trial should observe an absolutely impartial attitude, concealing nothing, perverting nothing, exaggerating nothing.

(5) On the preliminary examination as to his qualifications as a witness, he should be frank and open in answering questions. He should state fully the extent and the limits of his personal experience and of his reading upon the subject, without shrinking from responsibility, yet without self-glorification.

(6) He should be simple, plain, and clear in his statement of scientific facts and principles, avoiding the use of technical language, and trying to put his ideas in such form that they will be grasped and comprehended by men of ordinary education and intelligence.

(7) He should avoid stating any conclusions or principles of which he is not certain, but having an assurance that he is right he should be firm and positive. He should admit the limitations of his knowledge and ability. Where a question is asked that he cannot answer, he should not hesitate to say so, but he should refuse to be led outside the subject of inquiry, and should confine his testimony to those scientific questions which are really involved in the case, or in his examination of the case.

(8) He should always bear in mind that at the close of his testimony an opportunity is usually given to him to explain anything which he may be conscious of having said which requires explanation, and partial statements which need a qualification to make them a truth. This is the physician's opportunity to set himself right with the court and with the jury. If the course of the examination has been unsatisfactory to him, he can then, by a brief and plain statement of the general points which he has intended to convey by his testimony, sweep away all the confusion and uncertainty arising from the long examination and cross-examination, and can often succeed in producing for the first time the impression which he desires to produce, and can present the scientific aspects of the case briefly and correctly.

8. To constitute a "live birth," there must be (1) complete extrusion of the child from its mother's body, and (2) some certain sign of life. The latter would be established by one or more of the following: pulsation of the cord, beating of the child's heart, motions of the limbs, twitchings of the muscles, wrinkling of the brows, puckering of the face, opening of the eyes, even if respiration does not take place. (From Witthaus and Becker's "Medical Jurisprudence, etc.")

10. By a "dying declaration" is understood any statement made by a dying person who believes that he cannot recover, and that he is, at that very time, in actual danger of death. The statement need not be sworn to; it should be voluntary and sincere, and it is admissible as evidence in a court if the individual making it dies.

BULLETIN OF APPROACHING EXAMINATIONS †

STATE	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION	
Alabama*	W. H. Sanders, Montgomery.	Montgomery.	March 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	April 1
Arkansas*	F. T. Murphy, Brinkley	Little Rock.	April 9
California	Chas. L. Tisdale, Alameda	San Francisco	April 10
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver.	April 2
Connecticut*	Chas. A. Tuttle New Haven	New Haven.	March 1.
Delaware	J. H. Wilson, Dover	Dover.	June 12
Dis. of Col'bia	W. C. Woodward, Washington	Washington	April 11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May 15
Georgia	E. R. Anthony, Griffin	Atlanta.	April —
Idaho	J. L. Conant, Jr., Genesee	Boise.	April 2
Illinois	J. A. Egan, Springfield	Chicago	April 17
Indiana	W. T. Gott, 129 State House, Indianapolis	Indianapolis.	May 28
Iowa	J. F. Kennedy, Des Moines	Des Moines	March '10
Kansas	T. F. Raines, Concordia	Topeka	Feb. 12
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May 9
Maine	Wm. J. Mayburv, Saco.	Portland	March 5
Maryland	J. McP. Scott, Hagerstown	Baltimore	June —
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March 1
Michigan	B. D. Hanson, 295 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	O. E. Lanier, 24 South Fourth Street, Minneapolis	St. Paul	April 2
Mississippi	J. F. Hunter, Jackson	Jackson	May 14
Missouri	J. A. B. Adcock, Warrensburg	St. Louis / Kansas City	April 17
Montana*	Wm. C. Riddell, Helena	Helena.	April
Nebraska	Geo. H. Brash, Beatrice	Lincoln	Feb 1
Nevada	S. L. Lee, Carson City	Carson City	Feb 1
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	
New Jersey	J. W. Bennett, Long Branch	Trenton	June 18
New Mexico	B. D. Black, Las Vegas	Santa Fe.	June
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse Buffalo	May 21
N. Carolina*	G. T. Sykes, Grissom	Morehead City	May —
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April 2
Ohio	Geo. H. Matson, Columbus	Columbus	June 11
Oklahoma*	J. W. Baker, Enid	Guthrie	March 26
Oregon*	B. E. Miller, Portland	Portland	April —
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia / Pittsburg.	June —
Rhode Island	G. T. Swarts, Providence	Providence	April 4
S. Carolina	W. M. Lester, Columbia	Columbia	June —
S. Dakota	H. E. McNutt, Aberdeen.	Sioux Falls	July
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May
Texas	T. T. Jackson, San Antonio	Austin	April
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April
Vermont	W. Scott Nay, Underhill	Burlington	July
Virginia	R. S. Martin, Stuart	Lynchburg	June
Washington*	C. W. Sharples, Seattle	Spokane	July
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April
Wisconsin	J. V. Stevens, Jefferson	Madison	July
Wyoming	S. B. Miller, Laramie	Cheyenne	

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for details regarding the examination in any particular State.

Illinois and Indiana.—The reciprocity in medical licensure which has existed between these two States is no longer in force. This is not the first time that disagreement on this subject has occurred between Illinois and Indiana. Reciprocity was originally established between these States in 1902; in January, 1904, the Illinois State board broke off reciprocal relations with Indiana. Reciprocity was reestablished on January 1, 1905, but lasted only until July, 1906, when Indiana returned the compliment and broke off reciprocal relations. Illinois was notified of this in November, 1906.

New Instruments.

A STERILE EYE BATH.

By C. EVERETT FIELD, M.D.,

RICHMOND HILL, L. I.

In ophthalmic practice we sometimes neglect to make full use of the common eye bath for irrigation purposes. Objections have been raised many times against both glass and hard rubber devices; still they have done good service.

An eye bath fashioned from a single piece of aluminum has been made for me by the Kress & Owen Company. That this little device will be well received by the medical profession is not to be questioned when one considers the many points of advantage this metal cup has over the old style glass contrivance. It is cleanly, unbreakable, and can be sterilized instantly by dropping into boiling water.

111 Lefferts Avenue

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending January 26, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	420	197
Diphtheria	273	34
Measles	181	6
Scarlet Fever	268	7
Smallpox	2	—
Varicella	263	—
Typhoid Fever	35	9
Whooping Cough	54	5
Cerebrospinal Meningitis	14	14
Malarial Fever	..	..
Totals	1410	272

A Case of Pick's Disease.—E. Tranquilli describes a case of peridiaphragmitis, or Pick's disease. This is a morbid entity of complex nature, not a pure and simple peritonitis. It may result from tuberculosis or from syphilitic inflammation with sclerosis. The central tendon of the diaphragm is the structure that has to do with the absorption of corpuscular substances. The disease begins as an inflammation of the diaphragm, which ends in sclerosis of the central tendon and pressure on the inferior vena cava. In the author's case there was marked ascites, the fluid being confined to the abdomen, with no edema of the limbs. The quantity of fluid was sufficient to require frequent tapping. The patient had mediastinal pericarditis, left exudative pleurisy, chronic peritonitis with exudate in the abdomen, and perihepatitis, due to stasis of peripheral origin. In this disease the kidneys are not diseased and the urine is normal, although often increased in amount. The heart is usually normal, and hence the long resistance to the disease which is essentially chronic, and may run on for fifteen or more years. The sclerosis begins in the diaphragm and is propagated toward the pericardium and pleura. Treatment requires paracentesis to relieve the pressure of the fluid. Aside from this tubercular remedies when it is of tubercular nature, and iodide of potassium and arsenic when regarded as of syphilitic origin.—*Gazetta Medica di Roma.*

Obstruction of the Ileocecal Orifice and Appendicitis Proper: Treatment.—W. C. Abbott calls attention to the confusion sometimes existing in the diagnosis of appendicitis proper. He cites several cases in point. Although the typical case of true appendicitis is not difficult to diagnose, it is not always possible definitely to differentiate mild cases of appendicular inflammation from other conditions having similar symptoms. Tenderness upon pressure about McBurney's point or in the right iliac fossa, with nausea and diarrhea, or obstinate constipation, with rapid pulse and a rise of temperature, may all be caused by disorders outside of the appendix entirely. The writer believes that in certain cases inflammatory conditions exist about the ileocecal orifice that are diagnosed and operated upon for appendicitis, which would, if the bowels were freely opened and spasm and congestion relieved, recover within a short time.—*The American Journal of Clinical Medicine.*

Bier Treatment in Acute Purulent Otitis and Mastoiditis.—Basing his experience on seven cases of acute otitis media purulenta with acute mastoiditis and one case of distinct subperiostea abscess, S. J. Kopetsky offers the following conclusions as to the value of artificially induced hyperemia (Bier method) in this class of cases: (1) If used early it will greatly increase the probabilities of curing the condition without resort to major operative measures. (2) In cases cured under its influence the reestablishment of ear function will occur quicker than under the usual line of treatment. (3) Its use by the inexperienced is absolutely dangerous. (4) Its employment should be limited to the young and the otherwise healthy. (5) Finally we submit that when the indications are kept in mind and when properly and intelligently used, induced hyperemia will be found a measure destined, when its scope and limitations are better understood, to find a permanent place in otological therapeutics.—*Archives of Otology.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 25, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATH
Georgia, Augusta	Jan. 8–15	11	..
Illinois, Chicago	Jan. 12–19	2	.
Galesburg	Jan. 12–19	11	
Indiana, Indianapolis	Jan. 6–13	2	
La Fayette	Jan. 14–21	3	.
South Bend	Jan. 12–19	5	..
Louisiana, New Orleans	Jan. 13–20	3	2 import'd
Michigan, Ann Arbor	Jan 12–19	1	..
Detroit	Jan. 12–19	7	..
Missouri, St. Joseph	Jan. 5–12.	10	.
St. Louis	Jan. 12–19.	2	
Montana, Choutean County	Dec 1–30	5	..
Dawson County	Dec. 1–30.	2	
North Carolina, Greensboro	Jan. 12–19.	1	
Ohio, Cincinnati	Jan. 11–18	1	
Texas, Houston	Jan. 5–12.	3	..
Washington, Spokane	Dec. 29–Jan. 12	10	7 import'd
Wisconsin, Appleton	Jan. 12–19	1	..
La Crosse	Jan. 12–19.	2	.
Milwaukee	Jan. 5–19.	8	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Dec. 8–15.	1	.
Brazil, Bahia	Dec. 8–15.	2	.
Pernambuco	Nov. 15–30	..	26
Rio de Janeiro	Dec. 8–22	10	..
Canada, Cape Breton, Sydney	Jan. 12.	..	Present
Chile, Antofagasta	Dec. 24	3	..
Coquimbo	Dec. 24	19	2
Iquique	Dec. 24	..	Present
China, Chefoo	Nov. 13	1	On U.S.S. *Raleigh*
Shanghai	Nov. 26–Dec. 2.	1	..
Ecuador, Guayaquil	Dec. 1–15	.	10
Great Britain, Hull	Dec. 22–29	..	1
Sheffield	Dec. 31–Jan. 7	1	
India, Bombay	Dec. 18–25.	..	1
Calcutta	Dec. 8–15	..	1
Italy, General	Dec. 20–27	1	..
Persia	Nov. 30	In 9 localities.	Present
Russia, Odessa	Dec. 29–Jan. 5	5	1
St. Petersburg	Dec. 15–29	14	2
Spain, Barcelona	Dec. 23–30	..	7
San Feliu de Guixols	Dec. 29–Jan. 5	..	1

YELLOW FEVER.

Ecuador, Guayaquil	Dec. 1–15	..	

CHOLERA—INSULAR.

Philippine Islands, Manila	Nov. 25–Dec. 1.	1	1
Provinces	Nov. 25–Dec. 1.	115	77
"	Dec. 1–8	34	8

CHOLERA—FOREIGN.

India, Bombay	Dec. 18–25.		3
Calcutta	Dec. 8–15.	..	109
Rangoon	Nov. 17–24	.	15
"	Dec. 8–15		43

PLAGUE.

Australia, Brisbane	Nov. 17–24.	2	2
Brazil, Rio de Janeiro	Dec. 8–22	23	9
Chile, Antofagasta	Dec. 24	2	.
Egypt, Alexandria	Dec. 9–31	2	
Kench Province	Dec. 30	..	.
Menoufah	Dec 31—Jan. 1.	1	1
India, Bombay	Dec. 18–25.	..	10
Calcutta	Dec. 8–15	..	11
Rangoon	Nov. 17–24	.	22
"	Dec. 8–15.	..	18
Mauritius	Nov. 22–Dec. 6	83	53
Peru, Chicama Valley	Dec. 22	..	Present
Mollendo	Dec. 4–18.	9	3

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Original Articles.

FRESH AIR TREATMENT IN HOSPITAL WARDS.*

BY W. GILMAN THOMPSON, M.D.,

NEW YORK.

VISITING PHYSICIAN TO THE PRESBYTERIAN AND BELLEVUE HOSPITALS.

THE general medical hospital ward as exemplified in most of the hospitals in this city is a most uncomfortable and irrational place for the proper care of the sick. In the same long, narrow room are crowded a miscellaneous collection of ailments, all submitted to identical conditions and surroundings, without the slightest attempt at appropriate adaptation of environment. The pneumonia patient, with a temperature of 105° F., sorely in need of fresh, cool air, lies in the next bed to the uremic patient with a subnormal temperature and high tension pulse, who needs warm air and a hot pack! The typhoid fever patient, with a racking headache and photophobia, lies facing a glare of sunlight, which is doubtless beneficial to the man with pernicious anemia in the next bed (because the trained nurses think the ward looks better with the shades all at the same height). The neurasthenic with insomnia lies next to the patient with alcoholic cirrhosis and delirium tremens, who keeps the entire ward awake most of the night. The convalescent patient has nowhere to go during the day for a change of air and scene, and the poor old woman with a little chronic cough, who needs to rest in an easy chair toasting her feet at a heater, sits gazing wistfully and pathetically at a hole in the wall near the ceiling, where some architect (who never built a hospital before) has seen fit to place a hot-air register. But these are minor inconsistencies. The greatest evil of all is that the ward is "ventilated" by a thermometer, a little instrument which from October to May is kept steadily at 68° or 70° day and night, without regard to the moisture of the air, its freshness, its CO_2 content, its nitrogenous waste, its pollution with fetid odors, emanations from foul stools, foul breaths, and foul perspirations. Without regard also to the fact that during the visiting hours, or during the admission of classes of students or probationer nurses, the ward air, which ought to belong primarily to the patients, has been breathed for them by double and sometimes treble their number of outsiders. In some very much "up-to-date" institutions, the thermometer is replaced by an electric thermostat, communicating its valuable data to the superintendent's office, so that he may rest assured that in the wards above the air is always at 70° F., no matter if it is 15 per cent. CO_2 or hydrogen sulphide, for all he knows. The functionary usually placed in charge of this ingenious system is the hospital engineer, who is about as much of a ventilation expert as a hibernating dormouse. The nurses (who are given elaborate lectures on hygiene, and "how to ventilate the sick-room") are not allowed to raise a window as much as a crack from October to May, and as for the house staff—why, of course it is not for mere doctors to stoop to such details! One of our representative hospitals in which that most pernicious of all ventilating systems, known as the "closed system," was placed some eighteen years ago, with the endorsement of the Medical Board and at extraordinary cost, originally had locks and keys attached to its windows, and in lavatories the windows were, in addition, screwed down with bolts! Would anyone of us consent to live from October to May in a house in which his bedroom windows were locked fast and his lavatory window screwed to the sill? But we are in and out, getting the stimulus of a *change* of air, a change of temperature, as well as of air composition. The bedridden patient, on the other hand, lies perpetually at the mercy of the superheated air which is supplied him. The fundamental fault of the "closed ventilation" system is that heating and ventilation are made inseparable, and to deliver through long conduits air hot enough to warm a large number of distinct wards, it must be first superheated to about 400° F. and then all doors and windows must be kept tightly closed, for the opening of a single window in one ward "short-circuits" the entire system, and temporarily cuts out all the wards from both heat and air supply. This system may work in large assembly halls, such as churches or theaters, but there it is not continuous, and the people come and go, and refresh themselves with normal outdoor air. Superheated air is like superheated or sterilized milk—one can live upon it, of course, but there is nothing "uplifting" about it (as Walter James has said, in writing on this topic), and it admits of no advancement in health. I am convinced that there are properties which, for lack of better term, we call "vital" in the outdoor air that are not measurable by any of our present instruments of precision, such as the thermometer, hygrometer, thermostat, barometer, etc. It is only a few years since it was supposed that all was known about the chemical composition of atmospheric air. Then argon and other new elements were discovered. It is not unreasonable to believe also that some of the physical properties of the air are more or less permanently altered by its confinement and superheating.

Being unable to find any recorded scientific data upon the quality of hospital ward air, I undertook to obtain some a year ago in the wards of the Presbyterian Hospital. A study of the CO_2 content of the wards was made under varying conditions. The analyses were performed for me by Dr. C. G. L. Wolf (Instructor in Chemistry and Physics in the Cornell University Medical College in New York City), and the results were very illuminating. The experiments were carefully made, unusually

*A paper read before the New York Academy of Medicine, January 17, 1907.

large quantities of air were used to lessen liability to error, and control tests were made upon the hospital roof air and that of Dr. Wolf's laboratory, in which the chemical analyses were conducted. Without going into details, I will quote briefly from the conclusions of our report, which was submitted to the managers of the hospital: (1) Pure, normal atmospheric fresh air is admitted to contain 4 volumes of CO_2 per 10,000 volumes of air; 4.5 parts CO_2 represent highly impure air, 5 parts injurious air, and 6 to 7 parts air wholly unfit to breathe. (2) When the fresh air on the roof was practically normal (4.06 parts CO_2) that in the wards, with the most complete closed ventilation system in full operation, contained as much as 4.71 parts CO_2, and after twenty visitors and four nurses had spent one hour in the word this content rose to 5.13 parts. Immediately thereafter the ward windows were opened for ten minutes only, and the CO_2 content fell to 4.34 parts, although on a cold December day the ward temperature was lowered thereby only 3° F. Hence, with almost imperceptible change, as shown by the pernicious thermometer, the air impurities, which had been increased more than 20 per cent. by the visitors, were nearly eradicated by ten minutes of *window opening*. (Truly the nose is mightier than the thermometer as a ventilation guide!) (3) Of course the CO_2 content is only one of the many forms of atmospheric vitiation, but it is known to rise and fall *pari passu* with other impurities, and is therefore a fair index of the other conditions of vitiation. (4) In connection with these experiments others were made by Dr. G. A. Tuttle in the bacteriological laboratory of the hospital to demonstrate the injurious effect of raising dust by dry sweeping, so common in American hospitals. On an exposed agar plate 26 colonies of bacteria were deposited in quiet ward air. When the air was agitated by dry sweeping the number rose to 532 colonies, or more than twenty times as many colonies of streptococci, staphylococci, diplococci, with spores, fungi, and a variety of miscellaneous organisms. This was in a ward thoroughly cleaned every day.

Several years ago, while simultaneously visiting in two hospitals, I observed a very striking difference in certain classes of patients, especially those with marked anemias, chronic sepsis, pulmonary and chronic cardiac diseases, etc. In one the patients were supplied solely with superheated air forced through thousands of feet of metal conduits, and during their entire stay in hospital never received one single breath of unbaked air. Some of them improved, others grew well, to be sure, but they were a very long time about it. The other hospital is one of our oldest. The windows have settled, gusts of air and even the snows blow in through wide cracks. The wards are heated by steam pipes, and when too hot or too close the windows are opened, and even in midwinter are sometimes left open all day. Each patient receives good daily allowance of pure, fresh, unroasted air. The difference was really very striking in the greater promptness of recovery in favor of the old, tumbledown hospital that used to be an almshouse ninety odd years ago. It was so striking that we sought to do better, and as the old almshouse is the only hospital in this entire city that has adequate balcony accommodations attached to the wards we began to move the patients' beds out on the verandas. First the tuberculous were moved out, later the pneumonias, and later still any case that could be distinctly benefited by air which had never been in anyone else's lungs. At the Presbyterian Hospital we have as yet no balconies; but we have small rooms opening off the wards. In these we have sealed up the artificial ventilation system so that the windows may be kept open day and night, and a patient at the corner of Madison avenue and Seventy-first street who is dying for lack of fresh air, can get it without freezing out a surgical patient on the corner of Park avenue and Seventy-first street by short-circuiting his air supply! In these small rooms, as far as their capacity admits, we now place all those needing uncooked air, and the effect in certain cases is truly magical. We have made further improvement in the wards themselves by requiring that the windows be simultaneously opened widely at least twice a day to thoroughly air the ward, like any other bedroom, and by requiring that the night temperature be kept five degrees lower than that of the day, for there is something stimulating to respiration in such change which is lacking at the monotonous 70° F. level.

The most striking benefit of the uncooked air treatment is shown in cases of pneumonia. Delirious alcoholic patients, with profound cyanosis, when taken out of the general ward and placed at windows open day and night, become much less nervous and restless, and distinctly less cyanosed. I formerly gave such patients oxygen sedatives, whiskey, and other stimulants. In the open air they, of course, receive no oxygen, and require far less of stimulants and sedatives. During 1906 we treated in all at the Presbyterian Hospital 128 cases of acute lobar pneumonia. Of these patients 47, or 36.7 per cent., received absolutely no drugs whatever—no stimulants, no narcotics, no inhalations, no "specifics," nothing except the occasional laxative, which anyone in bed with fever may require, and they all recovered, in the usual way, when the time came. Some defervesced by crisis, some by lysis, some in five days, some in 12 days, or other intervals. A large proportion of these patients received the uncooked air treatment and enjoyed it. The air temperature was often as low as 35° F. or 40° F. They never complained, except when some emergency required them to be taken back to the ward, as when the room was needed for some other patient in more urgent condition. They were not all thus treated merely from lack of sufficient isolation rooms or balconies. The remaining ward patients who recovered received various drugs or stimulants, solely because certain complications arose which needed treatment. But I would again emphasize the fact that of 128 patients with pneumonia, 36.7 per cent. made complete recovery in the usual time, without any medication, and for the most part with their heads lying close to open windows in midwinter weather.

Other diseases that do remarkably well with open window treatment are cerebrospinal meningitis, chronic sepsis, and all forms of anemia. The meningitis patients become very much quieter, sleep much better, and look better in every way. A patient with a pernicious anemia in which the red blood corpuscles numbered only 828,000 gained over a million red cells in a week when I took her out of the general ward and placed her in a small room with wide open windows. She left the hospital a few weeks later, with over 4,000,000 red cells, and a hemoglobin estimation that had risen from 20 to 80 per cent.

When the pneumonia or other febrile cases require a cold bath, or the use of a bedpan, or any procedure necessitating exposure, they are temporarily taken into the ward, or the windows of their rooms are closed, and the rooms warmed.

All this is nothing new, but it is well sometimes to preach again from old and well established texts. Forty-two years ago there was an epidemic of typhus and typhoid fever in New York City. As the wards of Bellevue Hospital became overcrowded, 520 patients were transferred to Blackwell's Island and placed outdoors under tents, in the late autumn and early winter. Dr. Austin Flint in his Practice of Medicine (5th ed., p. 978), in writing of this incident stated: "The average death-rate in the hospital wards was 1 in 5.97; in the tents 1 in 16.77." "Making the fullest allowance for the conjecture that the cases in the tents were milder than those in the hospital wards, it can hardly be doubted that the superior ventilation in the tents was the means of saving many lives." Fifty-six years ago Dr. John H. Griscom reported in this Academy the treatment by open air in Perth Amboy, New Jersey, of 82 cases of typhus fever. The patients who were derived from an immigrant ship, had the additional advantage of being soaked by a thunder shower, and all made good recovery from the fever. (Flint, *loc. cit.*) Eighteen years ago, during a reconstruction of the Presbyterian Hospital after the fire, I treated a number of cases of erysipelas, with high fever, in open tents on the hospital grounds, with excellent results. Every midwinter army campaign in which the sick and wounded have had tent treatment has shown anew the advantages of outdoor air. In answer to those who object to giving a pneumonia patient first-hand, unbreathed uncooked air (and such objectors have usually never seen the treatment tried), it should be stated that this form of treatment is not a temporary fad or a "fresh-air crusade," but a very old, well tried, and widely tried, common-sense method, from which we have been somewhat led away of recent years. The undesirable necessity of building large metropolitan hospitals of the "sky-scraper" type, the idea of massing all manner of heterogeneous cases with a series of long wards, all precisely the same, like sheep corrals, and the inhumanity of architects, who strangely prefer mansard roofs and straight ornamental façades to roof gardens and ward balconies, pernicious application of wholesale ventilation "systems" for the air supply of the air-hungered —these are some of the factors which have led us to turn from the open window and fix our exalted gaze upon the cast iron heater in the wall!

In Continental Europe they are far ahead of us in modern hospital construction in many different countries. Closed ventilation systems are practically unknown. Windows are built with transoms of different sizes, permitting easy regulation of the ward air. Heaters, porcelain stoves, and even open fires, are placed where patients who feel cold and need warmth may sit and be comforted. Numerous small rooms of variable sizes admit of the scientific classification of patients, especially as regards their individual requirements for ventilation and air temperature (two essentially different things). Attractive day rooms are provided next the wards, so that convalescents not only obtain change of air, scene, and occupation, but leave fresher air in the wards for the benefit of the very ill. Many visitors are thus kept out of the wards by being admitted to the day rooms instead. The evil of dry sweeping in the wards is unheard of. Finally, broad, open corridors abound, and attractive grounds, with shelter tents, are so arranged that patients have free access to them at all times. In all these things we have very much to learn, especially just now, while propositions are already before us to spend $29,000,000 (see MEDICAL RECORD, January 5, 1907, Stephen Smith on "A Hospital System for New York") of the taxpayers' money for new public hospitals.

I have purposely thus far omitted mention of tuberculosis, because the object of this meeting is to stimulate interest in the application of fresh air—not necessarily cold air, but always *fresh* air—treatment to a very large variety of other diseases. Tuberculosis has demonstrated for us that fresh air acts not as a specific for any one disease, but by increasing the resisting power of the organism against many diseases. To this end we should learn to adapt our modern hospital construction as well as that of our own homes.

The following conclusions for the betterment of ward ventilation in this cold and very changeable climate are submitted:

1. Ward heating and ward ventilation should be capable of independent adjustment at all times.

2. The night temperature of the ward should be at least 5° F. below the noon day temperature, which latter should not be above 68° F. or 70° F.

3. The ward windows should be furnished with transoms and one or two movable separate panes, to admit of easy regulation and ventilation.

4. No window should be so heavy that it cannot be readily handled by the nurse.

5. The ward should be in communication with balconies or porches, on to which patients' beds can be moved through windows of the casement type. Such balconies need not interfere with the adequate lighting and ventilating of the ward, as proved at the Bellevue and other hospitals in which they have been used. (They are being put upon all the wards of the new Bellevue).

6. The building of very large wards should be discouraged and a greater number of small adjacent rooms should be provided to admit of the scientific adjustment of the ventilation and temperature to suit the requirements of different patients.

7. The windows of the ward, even on the coldest day, should be opened at least twice daily, in the early morning and late afternoon, for a few minutes to thoroughly change all the air in the room. During this time any patient may be covered temporarily with extra bed clothing if there be fear of exposure from draft. The same procedure should be carried out immediately after visiting hours.

8. Day rooms should be provided for convalescents where they can obtain change of air and scene, and leave more fresh air for the bedridden patients in the wards.

9. The ward should have at least one *accessible* heater, where patients temporarily sitting up may gather and warm their feet if desirable.

10. It is entirely unnecessary to have all the ward windows precisely alike, except from some fanciful esthetic standpoint. Thus certain windows of the casement type should spring from the floor and give on to balconies. Obviously heaters cannot stand in front of these windows as they should in front of other shorter windows of the ordinary height. Windows should be grouped with more reference to sunlight exposure, ordinary wind exposure, etc., than is usually done.

11. House staff and nurses should not only be taught ventilation theoretically, but made to put it into practice in the wards, and should be made to regard fresh air as of equal importance with fresh food.

Where these simple common-sense principles are in daily practice it is possible to use fresh air as a definite therapeutic means and secure most gratifying results. Finally, air temperature and ventilation are *not* synonymous terms!

34 EAST THIRTY-FIRST STREET.

RESECTION OF THE SIGMOID FLEXURE.

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THIS case is reported primarily for the purpose of calling attention to a simple method of end-to-end intestinal anastomosis which has been practised by the writer upon numerous occasions during the past two or three years.

Joseph J., aged sixty-three, native of the West Indies, was admitted to the service of Dr. J. T. Joseph Bird in the Harlem Hospital, November 20, 1906,

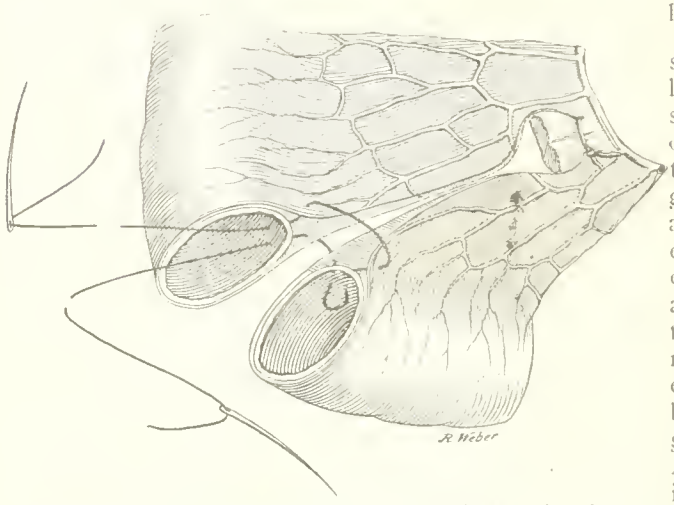

FIG. 1.—The mesenteric suture has been introduced; when drawn tight and tied it obliterates the "dead space" seen between the diverging layers of the mesentery; it also opposes the serous layers.

suffering from acute intestinal obstruction. The diagnosis of volvulus was made and operation advised.

Operation November 21. Chloroform anesthesia. An incision made in the middle line exposed the greatly distended gangrenous sigmoid flexure, which was twisted upon its mesentery through four complete turns. The twisted portion of the bowel corresponding to the entire sigmoid flexure was resected. An end-to-end anastomosis was made between the end of the descending colon and the end of the rectum by the method which is described in detail below.

After the lapse of three weeks the patient was discharged cured.

Description of the Method.—Two straight needles are threaded upon a piece of silk thread about twenty-four inches long, and with this as a suture the two ends of the bowel are joined together at their mesenteric border. In order to facilitate the description of the application of this mesenteric suture, we shall speak of the two ends of the bowel that are to be joined as the first and second ends. The suture is passed through the edge of the first end of the bowel entering upon the mucous surface near the mesenteric border; it passes across the mesenteric "dead space" and pierces the mesenteric serous layer; it then passes through the edge of the second end of the bowel, piercing its mesenteric serous layer, and after traversing the "dead space" emerges upon its mucous surface. The suture is then passed back in reverse order through the edge of the second end of the bowel entering upon the mucous surface alongside of the point where it had just emerged, and after traversing the "dead space" it pierces the mesenteric serous layer of this second end of the bowel; finally the suture is carried through the edge of the first end of the bowel, piercing the mesenteric serous layer, passing across the "dead space," and emerging upon the mucous surface of the bowel alongside of the point where it was first entered. The ends of the suture still carrying the two needles are left long for the purpose of continuing and completing the union of the two ends of the bowel. When the mesenteric suture is drawn tight it brings the two ends of the gut together, obliterating the "dead space" absolutely and bringing the corresponding mesenteric serous surfaces into accurate apposition. When the suture is tied it retains the parts thus closely applied permanently. The proper application of the mesenteric suture is the most important and essential step of the entire procedure.

The edges of the two ends of the gut are now secured with a silk tractor suture at a point nearly half way around their circumference—nearly opposite the mesenteric border. Making traction with one tail of the mesenteric suture and the silk tractor, the edges of the two ends of the bowel are sewed together with the other tail of the mesenteric suture as far along as the silk tractor, thus joining the two ends of the bowel for nearly half their circumference. The tractor being of no further use is cut and removed. A second silk tractor is applied so as to secure those edges of the bowel which still remain unsutured at a point about one-third of the circumference of the gut distant from the mesenteric border, and these edges of the bowel are sewed together with the second tail of the mesenteric suture. After this portion of the suture has been introduced, it will be seen that the edges of the bowel have been united for more than two-thirds of their circumference. The second tractor is of no further use and is cut away.

The gut is now spread out lengthwise, and it will be seen that there remains an opening to be closed corresponding to less than one-third of the circumference of the bowel, and this final step of the operation is accomplished with a nonpenetrating Lembert stitch, using the remaining portions of the two tails of the original mesenteric suture which still carry

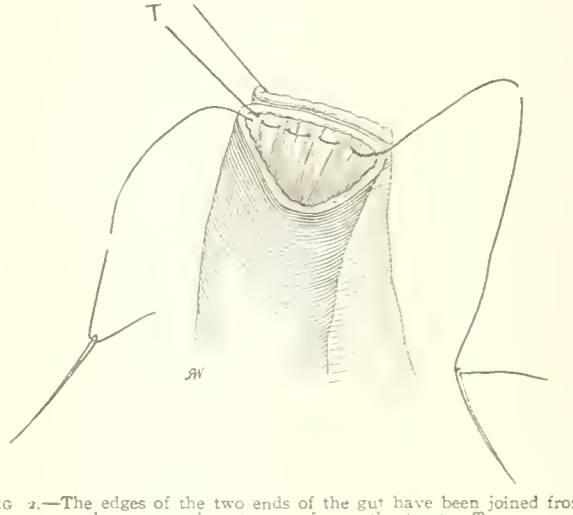

FIG. 2.—The edges of the two ends of the gut have been joined from the mesenteric suture as far as the tractor T.

the two needles for this purpose. Each of the two needles, which had last emerged upon the mucous surface of the gut, is thrust through the edge of the gut, so that it emerges upon the serous surfaces, and with these the opening that remains (corresponding to less than one-third of the circumference) is closed. A Lembert stitch is used for this purpose, with each thrust of the needle taking

a good secure bite in the serous and muscular coats, but not penetrating the mucous membrane layer. Finally the operation is completed by tying the two ends of the suture together.

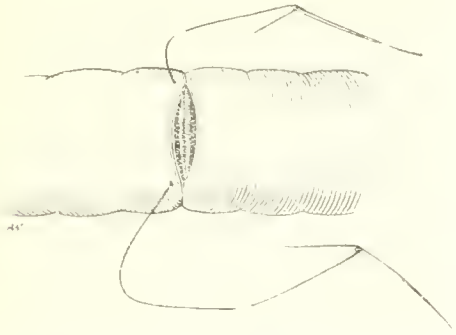

Fig. 3.—The gut has been joined for more than two-thirds of its circumference, and the sutures have been brought out through the edges of the gut for the purpose of completing the anastomosis with the Lembert stitch.

When the suture is applied at the mesenteric border and tied the mesenteric "dead space" is obliterated and the serous mesenteric layers are brought right down into close contact with the wall of the gut—two conditions that are absolutely essential to a successful end-to-end intestinal anastomosis. The ends of this same mesenteric suture are used to accomplish the union of the two ends of gut, using the tractors to facilitate the application of the suture as far as possible and finally completing the union with the Lembert stitch. For that portion of the anastomosis which is made with the assistance of the tractors a through-and-through stitch is used. The suture line should be placed at least one-quarter-inch below the edges of the gut, and the individual needle thrusts should be made about one eighth-inch apart. Each stitch is drawn fairly tight, and at every fifth or sixth thrust a back-stitch is made so as to prevent "pursing" of the suture.

The advantages of this method of anastomosis are its simplicity and efficiency and the fact that no apparatus, button, clamp, or other mechanism is necessary to its accomplishment.

104 West Seventy-first Street

CONSERVATIVE SURGERY IN SEVERE INFLAMMATORY AFFECTIONS OF THE UTERINE ADNEXA.*

By HIRAM N. VINEBERG, M.D.,

NEW YORK.

It was with readiness that I accepted the kind invitation of your chairman to participate in the discussion of the subject that is placed before you to-night.

From the outset of my active career in gynecological surgery I was deeply interested in the subject of conservative surgery in pelvic diseases. At that time it was not so much in vogue as it is now. Then it was customary if both tubes were markedly diseased to take little heed of the ovaries and to make a clean sweep of the pelvic organs. It was then held that in the face of so much inflammatory disease of the tubes the ovaries were disorganized or secondarily involved through adhesions, and that it did not pay to try to save them. There are a good many prominent gynecologists at the present day who still hold that view. But all are beginning to have more respect for ovarian tissue, so as to maintain the function of menstruation if the patient is under forty years of age. Whether or not we accept the theory that the ovary has the capacity of providing an internal secretion, we all admit that it is of considerable moment to the woman's economy to preserve her menstrual function if she be still several years on this side of the average age of the normal climacteric. All have ceased some time since to remove so-called microcystic ovaries for various nervous disorders and for vague pelvic symptoms. But in the subject before us a serious question arises. Is it wise, or even justifiable, in the presence of extensive inflammatory affections of the pelvic organs to retain a part of or an entire ovary that has been bound down by adhesions and is in a ragged and more or less pathological condition? This question will be answered variously by different operators. Some who have had unfortunate experiences and have had to do a second laparotomy a short time after the first to remove the ovarian structures that they left behind at the first, will be strong in their condemnation of what they term "false conservative surgery." Others, again, who have been chagrined and disappointed with their results in their efforts to do conservative surgery, will be equally strong in their condemnation. They will tell you the patient was not benefited thereby, that she continued having the same symptoms as before the operation, although on bimanual examination no marked changes could be found. To the latter I would say that they operated upon wrong indications. To my mind one of the most common causes of disappointment in conservative surgery upon the adnexa is the negligence of taking into account the condition of the uterus itself.

Let me cite a case. A young, healthy woman goes through a normal gestation, has a normal labor, and apparently a normal puerperium. Six months or a year later she begins to suffer from pelvic uneasiness, has a feeling of weight in the hypogastrium, a soreness or a burning in one or other groin or in both, has more or less backache. She is examined by a prominent gynecologist who may also be the obstetrician who delivered her. He finds everything apparently normal. There may be some tenderness over one or other adnexa on pressure. He puts the case down as one of neurasthenia. The symptoms, nevertheless, persist and she goes from one specialist to another. Later on she may have an attack laying her up in bed, attended with moderate elevation of temperature. The pelvic examination still does not show any marked changes. The patient grows tired of being treated locally without any relief, and clamors for an operation if it holds out any promise of cure. The abdomen is opened, the adnexa themselves are found fairly normal, there are evidences of more or less perisalpingitis resulting in membranous adhesions. These are broken up, and one or more cysts of varying size from a kidney bean to an almond in either ovary are found and excised. The patient makes an afebrile recovery. But she is no better afterward. In fact, her symptoms persist and grow steadily worse. In the course of a year or longer the abdomen is opened again, this time for the purpose of doing a radical operation. The portion of the adnexa left at the former operation seems to have undergone but little change. More adhesions are probably met with, some, no doubt, as a result of the prior interference, and the uterus now is so large as to arrest attention. The patient is cured after the second operation, although she may suffer very markedly from the nervous disturbance attending the artificial climacteric. This is not a fanciful case, but is the exact portrayal of an actual one, and is

*Read at a meeting of the Section on Obstetrics and Gynecology of the New York Academy of Medicine, December 27, 1906

illustrative of numerous cases I meet with operated upon by others, and, I am frank to admit, by myself occasionally. A conservative operation should never have been performed upon that patient. Her condition was one of chronic metritis, either as a result of a subinvolution or gonorrheal or other infection, and the slight periadnexitis was only a secondary affair. What to do with these cases does not come under the head of this discussion, but in my opinion one thing is certain: they should either not be operated upon, or if operated upon, the uterus, the prime cause of the trouble, should be removed. In the discussion that followed the reading of my paper, it was stated by one of the participants that in case of chronic metritis he could not concur in the alternative of noninterference or hysterectomy. In such cases he would curette and treat palliatively. The gentleman failed to grasp the point I endeavored to make. I was in favor of trying to benefit these cases by all the palliative means we have at hand, although curetting is seldom of much value. What I did try to emphasize was that these patients were usually subjected to two major operations, with all their risks and ordeals. If one were forced to operate upon these patients, after all palliative measures had failed, it was a mistake to attempt conservative surgery upon the adnexa, as they were not the organs at fault. It was the diseased uterus that was causing the symptoms, and would continue to do so until removed. The laparotomy for removing the one or the other adnexa would prove simply futile. I feel quite sure of my ground in this connection.

Next comes a series of cases that can scarcely, with propriety, be placed in one class, but which we must do for the purpose of a discussion of this kind. I refer to pus tubes of various sizes, with varying degrees of adhesions, and in which the ovaries are more or less involved as a result of the extensive inflammatory process that has gone before. To my mind it makes little difference in these cases as to the pathological microorganisms that were the direct etiological factors. In this I find myself differing from a leading and prominent operator who took part in a similar discussion before the New York Obstetrical Society a few weeks ago. He stated he always endeavored to do conservative surgery in inflammatory disease of the adnexa, excepting where he knew or suspected that there was gonorrheal infection. In that case he always did a radical operation. If one were to adopt that stand the cases of suppurative disease of the adnexa that would be appropriate for a conversative procedure would be very limited indeed. We all know that at least 75 per cent., roughly speaking, of the suppurative cases of the adnexa that we meet with are of gonorrheal origin. The remaining 25 per cent. of other causation than gonorrheal are usually of so serious and extensive a nature that frequently anything short of a radical operation is entirely out of the question. Further, as far as my own experience goes, the most gratifying results that I have had have been just in such cases of pus tubes of long standing, and of undoubted gonorrheal antecedents. In this class of cases also we have less fear of peritonitis following the less ideal operation (for such we must designate the conservative operation to be, at least, from a purely surgical standpoint) than in the cases due to staphylococcus or streptococcus infection.

It has been and is my custom, therefore, when operating on a patient much younger than the climacteric age to make every effort to save as much of the ovarian tissue as possible, and if feasible to do a plastic on the less diseased tube, independent of the microorganism that may have been the etiological factor. And if we be very determined to pursue such a course it is remarkable in what a number of cases we will be able to put the method into practice, that at first sight seemed unsuitable for anything short of a radical operation. Cases that looked hopeless from the standpoint of conservative surgery when the abdomen was first opened with care, patience, and, I may add, some experience, will gradually be disclosed as lending themselves to that procedure. I may have something to say of the technique later.

I have not the time at my disposal to discuss the methods to pursue to tide over acute cases of suppurative disease of the adnexa to a period when conservative surgery may be called into play. We are all pretty well agreed that acute cases lead themselves but poorly to conservative surgery, as I understand the term in this discussion. I would not designate a vaginal incision and drainage of a pus tube or an ovarian abscess as conservative surgery, that is "palliative surgery," and may be all that the case may ever require. But this discussion I fear will go far afield if we do not adhere strictly to an exact meaning of the term "conservative surgery upon the adnexa." By it I would understand the opening of the peritoneal cavity, be it through the vagina or through the abdominal parietes, and excising under the sight of the eye the most diseased structures, leaving such behind as are fairly normal, or present the prospect of restitution to the normal.

I have not had the time to investigate all the cases coming under this head that I have operated upon during the past ten years; I have, however, gone over, as well as the time would permit, the cases that occurred in my own private practice from January, 1896, to January, 1906. There were fifty-one cases. All cases of minor disease or cases of one-sided ovariotomy for ovarian cysts, or cases of ectopic pregnancy, in which conservative surgery was done, on the opposite adnexa were excluded. Some of the fifty-one cases were in acute stage when operated upon. There were two deaths. Case 1 occurred in March, 1898. It was in a young woman who had been ill for several weeks as a result of infection following a criminal abortion by a midwife. The whole pelvis was filled with irregular inflammatory masses. The temperature ranged from 101° to 104°, pulse from 120 to 130. An attempt was first made to reach the pus focus through a posterior vaginal incision, but this was unsuccessful. The abdomen was then opened, the large intestine was found covering, and extensively adherent to the pelvic organs, which were matted together into an indistinguishable mass. After separating the adhesions of the sigmoid the left adnexa were enucleated, the tube being the size of a bologna sausage, and filled with pus, the ovary completely disorganized and no ovarian tissue distinguishable with the naked eye. The tube and ovary were excised. The right adnexa were also firmly and extensively adherent to the floor of the pelvis and to the posterior aspect of the broad ligament. When they were enucleated after great difficulty some ovarian tissue was recognizable; this was left behind after cutting away the diseased tube and the disorganized portion of the ovary. The posterior portion of the uterus was raw and irregular from adhesions. The uterus was ventrofixated and iodoform gauze was packed lightly in Douglas' cul-de-sac, the end of which was carried through the

vaginal incision originally made. The patient withstood the operation poorly, but reacted fairly well later. The symptoms of septic peritonitis set in on the second day, which gradually progressed and proved fatal on the sixth day. Two criticisms readily occur to one: (1) The patient should not have been operated then, but tided over until the acute stage had been passed. It did not seem to me to be safe to wait any longer. That was over eight years ago, but I have learned better since; (2) having been forced to operate, either through the severity, threatening character of the symptoms, or through other exigencies such as the advice of other counsel, etc., a radical operation should have been done preferably through the vaginal route and with as much expedition as possible.

The second fatal case occurred in a young unmarried woman of twenty-one, who contracted an acute gonorrhea which was very virulent and extended rapidly to the tubes on both sides. For two weeks she was running high temperature, ranging from 101° to 105°, pulse 90 to 130. The pain was very severe in the right side of the abdomen, so that acute appendicitis was feared. On bimanual examination both tubes were found to be as large as the index finger and moderately fixed. A prominent surgeon was called into consultation by the family, who concurred in the opinion that an operation was imperative. On opening the abdomen both tubes were found enlarged at the outer two-thirds to the size of one's thumb. They were open and pus was flowing from the fimbriated extremities. The left ovary was excised with the tube. The right ovary was in fairly good condition, and it was left *in situ*. The appendix was adherent to the right tube, and its peritoneal coat was considerably injected. It was also excised. Drainage was carried out through the vagina. The operation seemed to have no influence for good or bad upon the patient's condition. The symptoms merely progressed. Manifestations of profound toxemia accompanied by delirium finally developed, and she died on the seventh day following the operation.

In this case I don't think it would have made much difference what course would have been pursued. It was evidently a mixed infection (although I had no positive evidence of that) which would have run a fatal course, whether it had been left alone or submitted to a radical operation. If we knew how to distinguish these cases early we might, perhaps, save some of them by timely operation, as we are able to do in cases of appendicitis. The remaining cases recovered from the operation.

A third patient (Case 3) was under observation only for two months. The menses had recurred twice, but the patient continued to suffer a good deal from abdominal pain, although the pelvic examination was negative.

A fourth patient (Case 19) failed to menstruate during the year she was under observation, although the left tube and ovary were not removed. They were bound down by firm adhesions, which were broken up. The patient was free from pelvic symptoms.

A fifth patient (Case 39) developed a cystic mass to the right of the uterus which disappeared and recurred several times since the operation. At the present time it is in abeyance. The whole pelvis was found filled with small inflammatory cystic collections at the time of the operation. The left adnexa were completely disorganized, and removed. The right seemed in fairly good condition, and was left. Menstruation has been regular, but scanty. It has been nearly four years now since the operation. A sixth patient (Case X) had ectopic gestation in the left tube (the right adnexa were excised for tuboovarian abscess) two years after the operation.

The remaining forty-three patients are practically cured and have menstruated regularly and normally since the operation. They have all been under observation or have been heard from for periods varying from two to ten years.

One patient (Case 5) became pregnant twenty-one months after the operation, and was delivered of a living child at full term. She has since miscarried twice, probably owing to a retroversion which recurred after the birth of the child, otherwise she has remained in good health. This, as far as I know, is the only case of pregnancy following the operation in the series of cases that I have presented.

In several cases of the series both tubes were filled with pus and the ovaries were extensively adherent to the intestines and the pelvic structures. In some of these so extensive was the disease that it was only the comparative youthfulness of the patient, being under twenty-five years of age, that induced me to refrain from a radical operation, which to my mind seemed to be the safer procedure, after all of the diseased structures had been enucleated and the field of operation investigated. Still the boldness of my practice was justified by the recovery of the patient, and her enjoyment of good health afterward, and by the continuation of menstruation regularly and normally.

A word or two in reference to the technique. While I have been, and am still, a strong advocate of the vaginal route, for many operations on the pelvic organs, the abdominal route, in my opinion, is the only legitimate one for the class of cases under consideration now. To carry out successfully conservative surgery upon extensive and marked disease of the adnexa requires easy accessibility, plenty of room, and good exposure to light. One needs to be in a position to be able to meet the complication of extensive injury to the intestine by careful surgical technique, as I had to do in two of my cases. In one case the tuboovarian abscess was extensively adherent to the sigmoid and had broken into the bowel by a small opening. After I removed the structures of the abscess a good sized hole in the gut had to be repaired. The patient made a good recovery.

In some of the worst of my cases, when the adhesions have been very thick and their separation has left a large, irregular, and ragged area in Douglas' cul-de-sac or on the posterior aspect of either broad ligament or of the uterus, it has been my custom to pack the area lightly with iodoform gauze and carry the end through the posterior vaginal vault into the vagina. I am aware of the tendency nowadays to discard this procedure, which is falsely termed "drainage." But I am certain many operators in this work at the present time have allowed the pendulum to swing too far. In my opinion the ultimate successful issue of conservative surgery upon the adnexa depends in a great measure upon many details in the technique, and this is something that to my mind has a great bearing.

I think we operators have a solemn duty devolving upon us in every operative case in women much under the climacteric age. We should strain every power we possess to cure our patient without sacrificing all her pelvic organs, and we should make every effort to ensure preservation of the menstrual function.

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THE CAUSE OF COMMON BALDNESS.*

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THIS report relates to an investigation of the subject of Common Baldness that has been carried on since 1887, and is still in progress.

The forms under which baldness presents itself, with extremely rare exceptions, are three in number, as follows: Common baldness (alopecia vulgaris), alopecia areata and alopecia secundaria. These forms all differ one from another in origin, symptoms, and other important particulars.

Common baldness (alopecia vulgaris) includes all cases of baldness in which the hair shedding occurs independently of any other disease, and, in addition, is limited as to its field of operation to the portion of scalp occupying the top of the head. What might be termed ordinary, every-day baldness is common baldness. Common baldness accounts for more than 90 per cent. of all cases of baldness.

Alopecia areata, on the other hand, refers to a form of baldness in which the hair shedding occurs sometimes in one, but oftener in several round or oval patches, which are located as a rule on the sides or back of the head.

Finally, alopecia secundaria is loss of hair occurring as a symptom or sequel of another disease. There are several diseases that tend to cause this form of baldness, among which are typhoid fever, scarlet fever, and erysipelas.

At different times in the course of the investigation that is under consideration, progress of the work has been reported to different medical and pathological societies. The last comprehensive report of this kind was contained in a paper entitled the "Etiology of Alopecia," which was read at a meeting of this society in June, 1901, and published in the MEDICAL RECORD in the following July.

At this time it is intended first to review, in a general way, the conclusions presented in the paper of 1901, and then, with somewhat more attention to detail, to set forth what the investigation has developed since.

In this paper the fundamental cause of common baldness was declared to be a form of respiration that leaves residual air undisturbed in the air cavities of a portion of the lungs; or, to be more explicit, since the residual air of any portion of the lungs that is not made use of for breathing purposes must necessarily lie undisturbed, and since the function of respiration can be carried on without the upper portions of the lungs being utilized but cannot be carried on without the lower portions being used, the fundamental cause of common baldness is absence of upper chest breathing.

The connection between absence of upper chest breathing and the existence of common baldness was explained in the following manner: In the first place attention was directed to the circumstance that residual air is warm, that it is saturated with moisture, that in amount it is five times greater than the tidal air, and that it contains among its constituents oxygen, nitrogen, carbon dioxide, argon and organic matter. Attention was also directed to the fact (previously proven) that whenever residual air (or what is the same thing, expired air) is kept chambered in the presence of warmth and moisture, it invariably undergoes change and develops a soluble poison that is capable, when present in the blood, of exerting a disturbing effect upon hair growth.

With this introduction it was explained that absence of upper chest breathing is the fundamental cause of common baldness, because it establishes conditions that permit the above-mentioned soluble poison to be formed from the residual air contained in the air cavities of a portion of the lungs, whence by a process of absorption it is taken up by the blood and is thus placed in position to exert its specific effect.

That a poisonous substance circulating in the blood should limit its destructive action to the hair of the top of the head, as must be the case if the theory that is being considered is correct, was explained by the statement that the roots of the hair of the top of the head, by reason of lying over the hard, glistening and practically bloodless occipitofrontal aponeurosis, are deprived of the nourishment that the roots of the hair of other portions of the head and of the face derive from the soft, blood-saturated muscular tissue with which they are in close relationship; and as a result the hair roots of the top of the head are of comparatively low vitality.

In support of the contention that absence of upper chest breathing is the fundamental cause of common baldness evidence was presented that had been derived: (1) From observing cases of common baldness; (2) from treating cases of common baldness; (3) from experimenting on animals.

Observation.—It was stated that an observation extending over a period of many years and applied to thousands of persons had developed not a single exception to the rule that persons affected with common baldness do not employ upper chest breathing, while those not affected with this disease as regularly do employ this form of respiration. It may be added that during the years intervening between the time the paper was published and the present no exception to this rule has been discovered.

Results of Treatment.—In describing the evidence derived from treating cases it was stated that during a period of ten years successive groups of persons had been treated for common baldness by means of directions to practice continuously upper chest breathing. These persons followed the directions they had received with widely differing degrees of thoroughness. Some followed their instructions to the letter, others not at all, and still others to different degrees between these extremes. The results received from the treatment were described as being satisfactory in direct proportion to the thoroughness with which the treatment had been applied. The results from a case in which the treatment had been followed closely were described as follows: After one week dandruff, when present (and this affection is present in about 80 per cent. of all cases of common baldness) entirely disappeared. At this time, too, the hair, which is frequently either dry and harsh, or unusually oily when common baldness is present, assumed a natural appearance. Then some weeks later, usually five or six weeks from the time of starting the treatment, new hair began to make its appearance. The new growth as a rule appeared first among the hairs about the margins of the bald areas, and after multiplying there invaded the bald patches by extension. The new hair growth, even after being well started, developed slowly, so that months or even years were passed before even a moderately sized patch of uncovered scalp became covered with new hair. In all cases any interruption in applying

*Read at a meeting of the Detroit Academy of Medicine, September 11, 1906.

the treatment was accompanied by a corresponding interruption in the progress of the case toward recovery. As a result of treatment that involved nothing but the continuous performing of upper chest breathing it was declared that hair had been seen to appear on portions of scalp that had been bald for upward of twenty years.

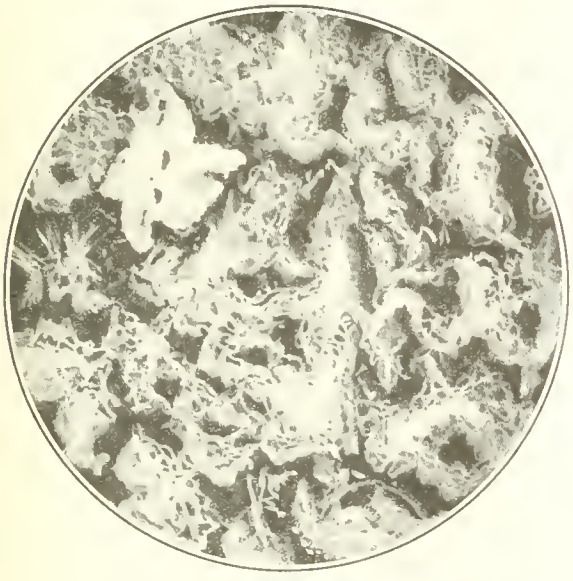

Fig. 1.—Material isolated from expired air. ×5.

Results of Experiments Applied to Animals.—These experiments were based on the supposition that if expired air should be kept chambered in the presence of warmth and moisture outside the lungs, it would undergo the same change as when kept under the same conditions within the lungs; and that the products resulting from such change injected artificially into the blood of animals, would exert the same effect upon such animals as would have been the case had these products been absorbed by the blood from the lungs.

Accordingly a two-liter (half gal.) flask was sterilized and filled with distilled water. When this had been done all but a small portion of the water in the flask was displaced with expired air. This was accomplished by having two glass tubes of unequal length passed through the stopper of the flask, after the manner of those of an ordinary laboratory wash bottle, and crowding the water out by forcing expired air either directly from the lungs, or from a rubber bag, into the flask through the shorter tube.

When charged with expired air and a small amount of water, the flask was closed by connecting together by means of a piece of rubber tubing the outside ends of the tubes, then agitated so as to bring the inclosed water and expired air into close relationship (in imitation of the conditions that prevail in the lungs) and finally kept at body temperature in an incubator. Ten days were allowed for the change in the expired air to take place.

When the flask was placed in the incubator the expired air within, both as to condition and surroundings, was very similar to residual air left undisturbed in the lungs. Moreover, after the flask had been in the incubator some hours this similarity became more marked by reason of the circumstance that drops of water gathered upon the inner surface of the flask to such an extent that the air within was in contact only with a wet surface. In these circumstances it could be affirmed that the principal difference between the expired air chambered in the flask and the same air chambered in the lungs lay in the fact that in one case the air was held in a single cavity, while in the other it was held in a great number of small cavities. An attempt was made to overcome this difference by agitating the flask occasionally so as to bring all parts of the air in contact with the water. This maneuver also made it certain that any soluble material in the expired air, whether there originally or whether formed by reason of the expired air's being in a warm and moist place, would become dissolved in the water.

The animals used for the experiment consisted of dogs, hens, and pigeons. The injecting material was the water that had been kept in the flask with the expired air. This water in appearance differed in no respect from ordinary distilled water. It was colorless, odorless, neutral in reaction, and apparently of the same specific gravity as when placed in the flask. It was found also not to deviate polarized light.

In making the injections the flask was first agitated and then from 5 to 10 c.c. (1¼ to 2½ drams) of its inclosed water injected with an ordinary serum syringe beneath the skin of each animal. This was done once a day and continued for five months. At the expiration of this time the hens and pigeons had lost completely their coats of feathers, while in the case of the dog, the abdomen, sides, and hind legs had become denuded of hair. During the time they were being treated the animals showed no signs of disturbed health, and in six weeks after the injections had been discontinued all had gained new coats to take the place of those lost.

In addition to these experiments other like animals were treated with other substances closely related to the preparation already described. In one case water from a flask in which atmospheric air was made to take the place of expired air, was used. In another case, distilled water by itself constituted the injecting material. And in still another case, water impregnated at the time the injection was made with freshly expired air, was used. In this instance the injection was the same as that of the experiment first described, except that the flask was not placed in the incubator and no time was allowed for change to occur in the expired air.

Fig. 2.—Another field of same material shown in fig.

The injections in these control experiments were

given daily and continued five months. At the time they were discontinued no effect of any kind had been observed in any of the treated animals. These control experiments showed that in the first experiment described above the shedding of hair and feathers had been caused not by the water as such, nor by the expired air as such, but by some-

FIG. 3.—Pigeon above received injections of material from expired air not soluble in absolute alcohol; pigeon below received injections of material from the same source soluble in absolute alcohol; the results are shown in Fig. 4.

thing that had developed in the expired air during the time it had been in the incubator.

The skin coverings of fur-bearing animals, such as guinea-pigs and rabbits, were found not to be affected by injections of the material that caused the shedding of the skin coverings of the animals above mentioned. There is an anatomical reason for this that need not be explained at this time. It is only necessary to state that fur differs in many important particulars from both hair and feathers.

As to the nature of the change that takes place in expired air when such air is chambered in the presence of warmth and moisture, nothing at the time the paper was published had been determined; but as organic matter is a constituent of expired air, and as organic matter is prone to undergo decomposition when kept moist and warm, the change was considered (without warrant, however), to be putrefactive in character, and the organic matter of the expired air the material acted upon.

The paper that is being considered coincided in point of time of appearance with the concluding of the experiments above described.

In the closing portion of this paper the following words were used: "The results of the experiments just described show that when expired air from human beings is kept chambered in the presence of warmth and moisture long enough for decomposition of its organic matter to take place, there is developed a substance, which, when introduced into the blood of certain animals, exerts a selective poisonous action upon the hair, or tissues analogous to hair, with which such animals may be endowed, and that beyond this, so far as careful observation can determine, it produces no effect whatever."

Trichotoxin.—With the existence and action of the substance under consideration demonstrated, the need of a word, to take the place of a phrase or sentence, in making reference to the substance itself, is apparent. To meet this want, the writer presents "Trichotoxin," from the Greek θρίξ hair, and ἰοξικόν poison. So much for the paper published in 1901.

Since that time the work of the investigation has been devoted chiefly to the study of the agent to which the name trichotoxin had been given. The work itself represents a series of experiments carried on partly in the bacteriological laboratory of the Detroit College of Medicine and partly in the Detroit Clinical Laboratory. The first task undertaken in this connection consisted of an effort to isolate trichotoxin from its aqueous solution.

As has been said, the agent at this time was looked upon as a product formed by putrefactive changes taking place in the organic matter contained in expired air, or, in other words, as formed by bacteria acting upon such organic matter. This view made it necessary to consider the possibility of the agent's being a ptomain.

A ptomain, as defined by Vaughan and Novy (*Cellular Toxins*, 1902, p. 29), "is an organic chemical compound, basic in character, and formed by the action of bacteria on nitrogenous matter."

In undertaking to isolate trichotoxin as a ptomain it was found that there are several methods of extracting ptomains. The so-called Stas-Otto method was used. This was applied by placing 60 c.c. (about two ounces) of water containing trichotoxin, previously rendered slightly alkaline with sodium carbonate, in a separatory funnel with an equal

FIG. 4.—Pigeons shown in fig. 3 after three and one-half months of treatment.

amount of pure ether. When this had been done, the funnel, tightly stoppered, was agitated for some time and then left to stand twenty-four hours to allow the fluids to separate. When this had taken place the water was drawn from the funnel and the ether transferred to an open glass dish and allowed to evaporate spontaneously. When this had oc-

curred the bottom of the dish was found to be covered with a thin, tightly adherent residue much resembling a light coating of frost on a window pane. To determine whether or not this residue contained trichotoxin, the whole deposit was redissolved in distilled water and introduced by means of small daily injections beneath the skin of a small

Fig. 5.—Trichotoxin crystals. × 87.

bird. As a result of this procedure at the end of six weeks the bird had lost completely its coat of feathers. This experiment showed that trichotoxin can be extracted from watery solution by ether, and also that it exists as a solid.

It did not, however, prove trichotoxin to be a ptomain. Many substances not ptomains can be extracted with ether. It showed that the possibility of the agent's being a ptomain still existed, and that the applying of further tests was in order. Accordingly, reagents considered capable of precipitating ptomains from aqueous solutions were added to different portions of the preparation that was being tested. Potassio-mercuric iodide, potassium iodide, mercuric chloride, picric acid, sulphuric acid, tannic acid, and phosphomolybdic acid were used. None of these reagents caused a precipitate to appear.

Efforts were then made to demonstrate the presence in the liquid of the bacteria that should be there in case a ptomain was present. The liquid was centrifugalized and examined, both in thin layer and in a hanging drop, with the aid of a microscope provided with a 2 mm. (1-12 inch) oil immersion objective. This procedure brought no bacteria to light.

Next, portions of the centrifugalized liquid were evaporated to dryness on cover glasses and the residues thus secured stained, one with Löffler's methylene blue, another with cold aqueous fuchsin, another with cold carbol fuchsin, and a fourth with hot carbol fuchsin. An examination of these products with a high power oil immersion objective did not disclose the presence of bacteria.

Finally an experiment was undertaken to determine whether or not expired air, from which trichotoxin is developed, contains bacteria.

This was done by keeping at body temperature two flasks, one containing sterile agar and atmospheric air, the other sterile agar and expired air. The results were as follows: In a few hours colonies of bacteria developed on the surface of the agar in contact with atmospheric air, which in a few days were in sufficient quantity to render the whole of the agar cloudy. In the other flasks, on the other hand, the agar remained unchanged for two weeks. This showed that so far as the ordinary bacteria of atmospheric air are concerned, expired air is practically sterile.

The results of these tests, taken as a whole, proved trichotoxin not to be a product resulting from the decomposition of the organic matter of expired air, a finding that made it necessary to abandon the idea of its being a ptomain.

Trichotoxin is Non-Volatile.—Coincidently with the performing of the experiments just described, others of a different character were carried on. In one a bird was treated with daily injections of trichotoxin-bearing liquid that had been left for some time in an open dish. This bird lost its feathers as promptly as those treated with material from closed receptacles. This showed trichotoxin to be a nonvolatile substance.

Trichotoxin Given by the Mouth is Inert.—In another, a bird was permitted to drink nothing but water charged with trichotoxin for a period of several months. No effects of a disturbing nature followed. This showed that the characteristic effects of trichotoxin cannot be secured by introducing the agent into the system by way of the stomach.

Trichotoxin May Be Isolated by Evaporation.—Returning to the isolating of trichotoxin, when this substance was found to be nonvolatile the idea at once presented itself that it might be isolated by evaporation. Accordingly, water was charged with trichotoxin in the usual way and then evaporated to dryness on a water bath. As a result the bottom of the dish used to hold the liquid was found to be thinly covered with a residue appearing in all respects but color like the residue obtained when ether had been used to extract trichotoxin. The evaporation product was yellowish in color. This residue was redissolved in water and shown to contain trichotoxin by the results obtained from its use in treating pigeons.

Thus the efforts made to isolate trichotoxin had

Fig. 6.—Trichotoxin crystals × 87.

discovered two methods of accomplishing this result, one by using ether, the other by evaporating the mother liquor to dryness. The latter was found to be the more satisfactory on account of its greater simplicity. The residue obtained by evaporating the mother liquor, as said above, resembles frost on a window pane except that it is tinted yel-

low. Viewed under a microscope with a 16mm. (2-3 inch) objective, which magnifies 87 diameters, the deposit was found to consist of different-shaped crystals, with a waxy substance either clinging to the crystals, or lying in separate masses. Figs. 1 and 2 represent different fields of the same deposit as seen with the microscope.

Trichotoxin Does Not Develop Singly.—After inspecting its external appearance an effort was made to learn something of the behavior of the residue under the influence of different reagents. With this end in view, scrapings of the substance were placed on glass slides, and with the aid of a microscope were watched while different reagents were applied to them. As this continued nothing occurred to attract attention until absolute alcohol was used. When this substance was brought in contact with a specimen of the deposit, part of the crystals disappeared in solution and part remained unacted upon. This showed that an original deposit of the material contains at least two constituents, one soluble, the other insoluble, in absolute alcohol. This information also raised the following questions: Had the specific effects that had followed the injecting of the material into animals

Figs. 1, 2.—Trichotoxin crystals. × 87

been caused by one of these constituents, or by their combination? And if by one of them, which was the one? Manifestly there was but one way to secure answers to these questions. This was to treat different animals with the different constituents and note the results. This plan was adopted and carried into effect.

Two pigeons were made the subjects of the experiment the work called for (Fig. 3). The pigeon occupying the upper position in the illustration was treated with a watery solution of the body not soluble in absolute alcohol, the other with a like solution of the body soluble in alcohol. The injections were made once daily, and continued for a period of three and a half months. At the expiration of this time the pigeon receiving the substance not soluble in alcohol had lost completely its coat of feathers, while the other was unaffected, so far as losing its protective coat was concerned (Fig. 4). Thus it was shown that of the two known constituents of the material that had been employed to destroy the skin coverings of animals in previous experiments, only the body not soluble in absolute alcohol had exerted a destructive effect on the skin appendages of such animals. It was shown also that the word trichotoxin, taken in the sense in which it had been adopted, should apply to this constituent alone, and not to the combination of substances it had previously been employed to designate.

Figs. 5, 6 and 7 represent different fields of the material not soluble in alcohol (trichotoxin) as seen with the aid of a microscope magnifying 87 diameters. The heavier shaded parts seem to be composed of the waxy material mentioned above in connection with the description of the original deposit, while the crystalline portions resemble spicules of newly formed ice. Whether the crystals and the waxy part are different forms of the same substance, or are different substances with different properties, has not been determined. In the form in which it is here represented the product is permanent in the air. Specimens have been kept for months on glass slides without cover glasses without undergoing appreciable change in appearance.

The body soluble in alsolute alcohol has been named "stearotoxin." Its properties will not be considered in this paper.

When the pigeon that lost its feathers in the last experiment had served the purpose mentioned above it was made the subject of another experiment for the purpose of learning if absence of feathers for a considerable time tends to delay the forming of a new crop. By means of repeated injections of trichotoxin the bird was kept denuded of feathers for a period of six months, when, upon discontinuing the injections, a new crop of feathers developed as promptly as had been the case in any of the experiments already described. In this way it was shown that the structures that develop the skin covering of birds may be subjected to the action of trichotoxin for a considerable length of time without suffering permanent injury.

Time Required for Trichotoxin to Develop.—By means of experiments information was gained concerning other points in the inquiry as follows: By evaporating at short intervals successive specimens of water kept in contact with expired air, and examining microscopically the residues thus secured, it was found that expired air kept chambered at body temperature, begins to develop trichotoxin in about six hours, and that the process is completed, so far as a fixed amount of expired air is concerned, in four or five days.

Proportion in Which Trichotoxin Develops.—By placing a known quantity of expired air—240 liters (about 60 gallons) being the amount—under conditions that favor the forming of trichotoxin, it was found that one liter of expired air developed Gm. 0.0003 of trichotoxin, and Gm. 0.000054 of stearotoxin; or, to use a different standard, one gallon of expired air developed grain 1-53 of trichotoxin, and grain 1-300 of stearotoxin.

The Constituents of Expired Air That Develop Trichotoxin Soluble in Water.—By forcing air directly from the lungs through a glass tube placed so that the air rose in bubbles through a column of distilled water, it was found that the water takes from expired air the constituents that are converted into trichotoxin, and that water thus treated develops trichotoxin even when kept in an open receptacle.

Reagents That Precipitate Trichotoxin.—As a result of efforts made at different times during a period covering several months it was finally found that trichotoxin may be thrown out of its aqueous solution by adding any of the following reagents: Barium chloride, barium sulphide, barium nitrate,

barium hydrate, barium dioxide and strontium nitrate. The barium preparations vary with respect to the amount of precipitate they cause to appear. They are arranged here in the order of their activities, the most active being first. Strontium nitrate corresponds in precipitating power to the most active of the barium preparations. Calcium and magnesium, the other members of the alkaline earth group of metals, so far as tested, do not form a precipitate when added to a watery solution of trichotoxin.

By utilizing a precipitating reagent the finding previously made, that under favorable conditions a fixed quantity of expired air begins to develop trichotoxin in about six hours and completes the conversion in four or five days, was confirmed.

Warmth Not Essential to the Forming of Trichotoxin.—That expired air does not necessarily require the presence of warmth in order to undergo the change requisite to the forming of trichotoxin was brought out by finding that the different reagents that precipitate trichotoxin, upon being added to water charged some days previously with expired air, cause a precipitate to appear even when such water has not been subjected to heat.

Water from a laboratory wash bottle that has been in use for some time has as a rule absorbed enough expired air to give this reaction. It is altogether probable, however, that the presence of warmth not only hastens the forming of trichotoxin, but also tends to make the process of conversion more complete.

Present Status of the Investigation.—At the present time the attempt is being made to clear up two of the more important points of the inquiry that remain undetermined. One involves the determining of the chemical formula of trichotoxin; the other, the ascertaining of the nature of the change that expired air undergoes when trichotoxin is developed. The first of these tasks, that of finding the chemical formula of trichotoxin, is under the direction of W. H. Allen, Ph.G., while Thaddeus Walker, M.D., and Joseph Sill, M.D., of the Detroit Clinical Laboratory, are aiding in the endeavor that is being made to accomplish the second. It has already been found that when expired air has been heated to 80° C., the temperature at which practically all known ferments are destroyed, it cannot be made to yield trichotoxin. Also that when water charged with expired air has a large surface exposed to the atmosphere, it develops trichotoxin more readily than when it has only a small surface thus exposed. These two facts seem to show that the change referred to is dependent on the action of an aërobic enzyme. Other tests must be applied, however, before a definite conclusion in regard to this point can be reached.

The work of analyzing trichotoxin was begun some months ago, and thus far has consisted chiefly of efforts to secure material in sufficient quantity to meet the demands the work imposes. For this purpose a specially constructed apparatus has been devised. This consists of a 36 liter (8 gallon) crock, a bell-jar, an iron table, and a bunsen burner, all arranged as in Fig. 8. In using the apparatus the crock is filled with distilled water, the bell-jar, open at top, submerged in the water, and the burner lighted and the flame regulated so as to keep the water at a temperature of 37° C. (98½° F.). Next a glass tube, bent at a right angle at one end and connected with a piece of rubber tubing provided with a glass mouthpiece at the other, is passed down between the side of the crock and the bell-jar and turned so as to bring the end beneath the bell-jar. When this has been done, as many persons as can be secured, are assembled and one after another directed to force air directly from the lungs through the tube. While this is being done the vent at the top of the bell-jar is kept open until all but three or four of the persons have forced expired air through the tube, when it is closed. By proceeding in this way a comparatively large volume of expired air is made to bubble up through the water, and by so doing to give up to the water a greater or less portion of its convertible constituents, while in the end the bell-jar is left filled with expired air resting in contact with the water. In concluding the charging operation the glass tube is removed and the crock screened from dust by means of a cloth cape.

For a period of five months the apparatus was

Fig. 8.—Apparatus for developing trichotoxin from expired air.

charged and recharged with expired air at intervals of eight or ten days, and the water in the crock then evaporated to dryness. The residue thus secured, containing both trichotoxin and stearotoxin, weighed Gm. 0.807 (grains 13.38). When split up with absolute alcohol, the trichotoxin thus secured weighed Gm. 0.718 (grains 11.08), and the stearotoxin, Gm. 0.149 (grains 2.30).

This yield of trichotoxin is now available for the purpose of the examination. The apparatus will be kept in constant use, however, in the hope that a deficiency of material may be avoided.

Summary.—From what has been written above it will be seen that the theory discussed in this paper makes common baldness depend for its existence on a double cause, one being the remote or fundamental cause represented by the absence of upper chest breathing, a condition that allows a poisonous substance to develop in the lungs; the

other, the direct or exciting cause, represented by the effect produced by this poisonous substance circulating in the blood.

Conclusion.—The evidence here submitted in support of the theory that absence of upper chest breathing is the fundamental cause of common baldness cannot yet be said to be complete. Its real value has not been demonstrated to be that of its face value. Before its real and face values can be said to correspond, the evidence itself must be vouched for by many times more than one person. That this condition of affairs was bound to prevail was fully understood when the task of preparing this paper was entered upon, a circumstance that caused the attempt to be made so to describe any evidence made use of that the testing of its value might become as simple a matter as possible.

550 Jefferson Avenue

SOME POTENT ETIOLOGICAL FACTORS IN BACKWARD CHILDREN.*

By M. NEUSTAEDTER, M.D., Ph.D.,

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Much stress has been laid upon such physical defects as enlarged tonsils, adenoids, refractive errors, and carious teeth, as the most prominent etiological factors in backward children. But when we survey the statistics and find on the one hand 85 per cent. of all school children are suffering from some physical ailment, and among the sufferers 95 per cent. are bright pupils, when we think of the vast army of graduates who yearly leave schools and in spite of their physical defects become bright men and women, and we are reminded by history that such great men as Rousseau, Kant, Mendelssohn, Darwin, and others were physically incapacitated, that great singers suffer from incurable diseases of the vocal cords, and on the other hand some of the most vicious children whom I have personally examined presented no physical defects that I was able to detect, it seems to me to be imperative that we look further than tonsils and other physical defects. Apart from the fact that with the adenoids and enlarged tonsils out of the way, every pupil is not yet supplied with pure air in his badly-ventilated dormitory nor provided with wholesome food, we have to contend with other factors that are far worse and create greater havoc in the physical and mental make-up of the child, than all the physical defects combined. These defects are certain drug habits to which all these backward children are addicted.

After having carefully studied ninety-five cases of backward children between the ages of ten and sixteen years in one school, without any prejudice as to the etiological factor or factors, I have come to the conclusion that it is the addiction to alcoholic stimulants or strong decoctions of tea or coffee, or to the smoking of cigarettes, or to a combination of two or all the poisons enumerated, that far outweighs in importance as etiological factors all the physical defects combined.

Before going into a discussion of the physiological action of these drugs, permit me to pass a review of the examination of the ninety-five backward children mentioned. Of these (the figures representing percentages) 22.8 were badly nourished, 66.5 had enlarged cervical glands, 1.0 had chorea, 3.8 were suffering from cardiac disease, 1.9 were suffering from pulmonary disease, 2.7 had skin disease, 0.95 deformity of the chest, 32.3 had defects of vision, 28.5 had defects of the ear, 9.5 had nasal defects, 34.2 had bad teeth, 2.7 had deformed palate, 20.9 had enlarged tonsils, 71.25 had bad mentality, 6.6 were drinking strong decoctions of tea or coffee, 3.8 were drinking coffee and smoking cigarettes, 36.1 of all and 98 of boys were addicted to the use of tobacco, coffee, and alcoholic stimulants, 25.65 were addicted to the use of tea and beer, 1.1 claimed to have partaken of none of these drugs, 16.1 had no physical defects at all, 54.0 had a two-inch chest expansion during the act of respiration, 18.0 had three-inch expansion, 12.0 had one-inch expansion, 90.0 were underweights.

These statistics speak for themselves. I then examined seventy-two pupils of the same school whom the teachers termed the brightest, and found total abstainers 7.2, users of tea 5.6, of coffee 23, of beer 0.72, of tobacco 4.3, of tea and coffee 8.6, of coffee and beer 11.5, of tea, coffee, and beer 0.72.

Let us now consider the effects of alcoholic stimulants: The experiments of B. W. Richardson, Dogiel, and others indicate that alcohol, even in very small quantities, affects protoplasm, and therefore the entire system. It tends to cause cessation of the ameboid movements of the leucocytes, destroying their function. These are driven in masses by increasing rapidity of the heart's action and become blocked in the capillaries, forming centers of obstruction and injury.

Prout, Edward Smith, Harley, Schmiedeberg, Vierordt, Kerr, and others have proved that alcohol lessens the absorption of oxygen by the red blood corpuscles and the exhalation of carbonic oxide. It favors the growth of many pathogenic organisms, including those of pus and diphtheria; Lancereaux enumerates cases showing marked inhibitory influence of alcohol on the growth of children, and in my ninety-five cases we had 99 per cent. of underweights. It inhibits or even entirely destroys the food-dissolving action of the gastric juice. Inflammation of the mucous membrane of the stomach, with increased secretion of a thin tenacious mucus and a loss of secreting power, as a result of the ingestion of alcohol, is known to every one. The appetite becomes impaired or even lost. Ptyalin of the saliva and pepsin are precipitated, the gastric vasodilators are paralyzed, while the constrictors are stimulated, preventing the flow of gastric juice and accounting for irritability, anorexia, etc. Duodenal and pancreatic function is prevented. Stearin is dissolved out of the fat by alcohol, and remaininig elements are contributing to fatty degenerations of various organs. Wilkins holds that the continued use of alcohol will prevent the rehydration of glycogen and its transfer to the blood and oxygenation of bilirubin to form biliverdin. In this sense even small quantities of alcohol are inimical to life.

That the liver suffers organic changes from the continued use of alcohol is well known to us. Lancereaux reports the findings of an histological examination in two rabbits, which were subjected to small doses of wine. There were traces of an irritating influence upon the liver, which were found principally in the central parts of the lobes. The connective tissues of the portal spaces did not present lesions that were very clear, but the subhepatic veins and the capillaries were filled with leucocytes and proliferated endothelial cells. The glandular parenchyma was remarkable for the considerable size of its nuclei, which were vesicular; the cellular protaplasm seemed to be intact. One had died at the end of twenty days, without presenting any visceral alterations. The other had died after thirty days, and presented hemorrhage of the stomach.

*Read before the Society of Medical Inspectors of the City of New York, December 4, 1906.

The liver was of a pale-grayish color and the spleen was tumefied.

The intestinal tract bears the brunt of the irritating action of improperly digested food, and this condition is frequent, especially in children. Koplik claims that many children suffering from acute or subacute gastrointestinal disease are the victims of unrestrained administration of alcoholic stimulants. Wintz and Hudelo hold that the ingestion of alcohol causes migration of microbes from the intestines to the peritoneum and to the blood of the vena porta.

The habitual ingestion of alcohol interferes with the functions of the kidney structures and the products of metabolism are retained in the system. The various forms of nephritis are the natural consequences of the irritation produced. Glaser observed that uric acid and calcium oxalate crystals are found in the urine of persons in good health after taking alcoholic drink, besides an increased number of leucocytes with cylinders and cylindroids. From this premise we may conclude that, even in moderate quantities, alcohol irritates the kidneys, the augmented leucocytes, cylinders, and crystals being due either to the increased metabolism of the tissues or an alteration by alcohol of the relations of solubility of urine salts.

The direct action of alcohol upon the involuntary muscular system would indicate that the heart muscle and blood-vessels will suffer on account of their continuous overdistention. By lowering the vitality of the entire system, alcohol exposes its victim to the danger of tuberculous infection of the lungs. It is a well-known maxim to even the recent college graduate that the prognosis of pneumonia in one addicted to the use of alcohol is invariably bad. Tharain holds that one of the most efficient prophylactic measures against tuberculosis would be the repression of alcoholism, and Lagneau states that the increase of tuberculosis is proportionate to that of alcoholism in France.

As regards the action of alcohol upon the nerve tissue and cells: (1) It changes the granular matter of the nerve cell, breaking up its nutrition and thereby inhibiting its dynamic force. (2) This action is followed by contraction and atrophy of the dendrites, shrinking of cell walls, as in fatigue; and coalescense and disappearance of the granular protoplasm. (3) The special injury from alcohol seems to be in protoplasm and terminal fibers of nerve trunks: the irritation and inflammation of the nerve walls and fibers ending in sclerosis are common. There is a marked sensorial palsy and a slowing of all mental operations. The use of alcohol produces an apparent temporary increase of brain activity, which is but an evidence of its paralyzing and deleterious effect. It destroys the special functions of the cerebellum and produces tremor and weakness of the lower limbs. Rust states that a large percentage of insanity in children in Germany is due to habitual drinking.

Mental disorders and crime are shown by statistics to have in alcohol one of their most potent etiological factors. J. J. Ridge shows that from one-fourth to one-third of the lunacy of the United Kingdom is the result of the custom of drinking alcoholic liquors, and in every country where the habitual use of alcohol prevails there is an increase in lunacy and degeneracy. The literature of the past three years has fully demonstrated that fact. Neurological and pathological, together with recent experimental work, show that in the early stages of the insanities there is a profound nutritive and dynamical failure in the nerve elements of the brain, which finds expression in the insomnias, the melancholias, and the commencing loss of memory, with easily induced mental fatigue which their subjects experience and the pathological facts ascertained insofar as they afford any light, force on us the conviction that we are dealing with serious nutritive and dynamical changes in the central nervous organ.

The manner in which the pathological lesions and the symptoms correspond with one another is as follows: The sensory disorders, the exaggeration of the sensibility of the skin, the anesthetic troubles, and the ocular and auditory disorders would correspond to the beginning of the vascular disturbances, when the nerve cells, irritated by an insufficient supply of proper nutriment, the presence of a poisonous stimulus, overact for the time; then, as nutriment is still withheld from them, altered metabolism results. The beginning swelling of the dentrites of the sensorimotor region is marked by paresthetic symptoms, those of the purer sensory region by visual and ocular troubles, and some amnesia, especially for recent events; or, in other words, cells that have the function of evolving and transmitting thought cannot work properly, and defective memory results; later, as the motor cells are more and more involved and nuclear changes begin, continuous tremor becomes apparent, the muscles no longer coordinate perfectly, unless for a moment under the direct influence of the will. Still later, when a portion of the cell structures have become highly degenerated and the altered cells have become more numerous, the already tottering will-power becomes more and more deadened, memory and judgment fail, and when the degenerative process is far advanced an incomplete dementia is the final result.

Alcohol is a narcotic poison, its food value under ordinary conditions is practically nil, and put in the most advantageous light can only be temporary, and then of an exceedingly slight and wasteful character.

The injurious effect of tobacco upon the system is admitted even by the habitual smoker, and it is my aim to show the extent of the injury and manner in which it affects the system of the child and thereby constitutes an etiological factor in his backwardness. The physiological effects of tobacco are exerted through its alkaloid, nicotine, and the alkaloids produced by the combustion of the tobacco and its destructive distillation in the act of smoking, such as pyridine, callidine, picoline, and an oil. It acts especially on the spinal and sympathetic system of nerves as well as, in a minor degree, upon the cerebrum and cerebellum, the nerves of special sense, the medulla oblongata, and the vasomotor system producing slight stimulation at the beginning, followed soon by a depression. Many a smoker remembers the first "smoke," followed by vomiting, dizziness, profuse cold, clammy perspiration, diarrhea, sense of alarm, and feebleness of pulse. These effects become lessened as the habit of smoking is acquired. The physically healthy child, addicted to its use, loses the power of resistance; how much more harm then is done to the child with physical defects already established? We are familiar with effects of other poisons ingested in small quantities for a long period of time, such as lead, mercury, arsenic, iodine, etc., and we hardly doubt that tobacco will produce a deleterious effect upon the organism. Various experiments, recorded in medical literature, show that the presence of the alkaloids of tobacco in the system diminishes the amount of feces, lessens the quantity of urine and the amount of uric acid, phosphoric acid, and sulphuric acid

eliminated through the lungs, and that retrograde metamorphosis is stopped. This shows conclusively that tissue waste is excessive, especially the waste of nerve tissue is shown by the increased elimination of phosphorus.

Grasset and Parentz have studied the physiological action of nicotine oxalate, which is eight times less toxic than nicotine. The constant symptoms were contractions of the pupils, paralysis and convulsions, salivation, cerebral anemia, peripheral vasomotor constriction and cardiac asystole. Not only does tobacco produce insomnia, but it renders sleep less deep, and consequently less refreshing. The result of an inadequate amount of refreshing sleep is to render the child irritable and heavy during the day, and the feeling of lassitude and incapacity for intellectual work is especially pronounced during the forenoon. Tobacco acts as a cerebral irritant, and interferes with the vasomotor centers of the brain to such an extent that the vessels are unable to adjust themselves forthwith to the condition required for healthy and untroubled sleep. Every smoker is aware that a change of tobacco or a strong cigar will rob him of his sleep.

A careful study of this subject by Dr. J. W. Seaver of Yale, based upon the observation of one hundred and eighty-seven students during their first and final college years yields the following results: He claims that the nonuser of tobacco increased 10.4 per cent. more in weight than the regular user, and 6.6 per cent. more than the occasional user. In growth the nonuser increased 24 per cent. more than the regular user, and 14 per cent. more than the occasional user. In the increase in chest measurement, the nonuser had an advantage over the regular user of 26.7 per cent., and over the occasional user of 22 per cent., but in capacity of lungs the growth was in favor of the nonuser by 77.5 per cent. when compared with the regular user, and 49.5 per cent. when compared with the occasional user. He concludes that tobacco has a dwarfing effect, and he is corroborated by Prof. Hitchcock of Amherst College, who has published the following: Of the class of '91 75 per cent. increased in their measurements and tests during the whole course, while 29 per cent. remained stationary or fell off: In separating the smokers from the nonsmokers, it appears that in the item of weight the nonsmokers increased 24 per cent. more than the smokers; in height they surpassed them 37 per cent., and in the chest girth 42 per cent.; in the lung capacity there was a difference of 8.36 cubic inches (about 75 per cent. in favor of the nonsmokers), which was 3 per cent. of the total lung capacity of the entire class.

The knowledge of the pathological effects of tobacco is rather meager. The only anatomical lesion claimed to be due to the effect of tobacco is that incidental to a chronic form of retrobulbar neuritis of the optic nerve, which generally affects both nerves and is caused by certain poisons, chief among which nicotine has been claimed to be an efficient factor. Dr. G. E. De Schweinitz, in his treatise on the Toxic Amblyopias, includes this substance among the etiological factors. In Germany this is regarded as the most potent agent. The result, then, of our study of tobacco as a factor in the production of functional or organic disorders is that the use of tobacco by children retards not only their proper physical development, but also their mental progress.

The coffee bean, when green, contains caffeine, caffeotannic acid, and, according to Palladine, an alkaloid caffearine. During the roasting process, however, a volatile oil is developed, which with other substances is collectively termed "caffeone." Besides there remain some astringent acids, as caffeotannic acid, and caffeic acid. The empyreumatic oil modifies the action of the coffee bean, inasmuch as before roasting, caffeine alone acts. Marshall, Hare, and T. Lauder Brunton have studied the action of the empyreumatic oil of coffee and report that 11.6 per cent. of oil is obtained from an average browned bean; in consequence, an ordinary breakfast cup of coffee contains about 45 minims of the oil, provided all the oil in the coffee used is extracted. In their opinion the oil directly increases cardiac action in small doses and depresses it in large doses. On the spinal cord of the frog it causes increased reflex activity, but on the mammal with a well-developed brain, drowsiness and sleep. Cohnstein and Gaetano Vinci have formulated the following conclusions with respect to the physiological action of coffee: (1) In small doses caffeine increases arterial pressure while a larger amount prevents this increase. (2) The influence upon the blood pressure is the result of the changed condition of irritability of the vasomotor center, caused by caffeine. (3) It has a direct action on the heart, showing itself in the pulse-frequency and wave-height, first as an irritant and then as a paralyzant. (4) The heart muscle is affected by caffeine in precisely the same manner as the skeletal muscle.

Pavinski holds that caffeine exerts its stimulating action chiefly on the nervous system and Germain Sée and Lapicque concur in this view that muscular labor is affected only inasmuch as the corresponding cerebrospinal center is affected and not the muscle itself. T. Lauder Brunton and Bennet contend that its effect on the spinal cord is in lessening the conducting power of the sensory columns of the cord. This they proved by irritating the posterior roots of the cord before the injection of caffeine into the circulation; this caused violent struggles and loud cries; a like irritation after the injection caused only a slight quiver. This is the characteristic difference between the action of caffeine and theine, the alkaloid of tea. The first acts most prominently on the sensorium, while the latter acts on the motor tract. Irritation of the motor tract, after the injection of caffeine into the circulation, caused violent muscular contractions, the same as before the injection. Its action on the brain is the same as that of theine, causing a local dilatation of the arteries supplying the brain, and therefore a hyperemia. The respiration center stimulated by caffeine quickens respiration, a most undesirable phenomenon in the growing child. Respiration becomes superficial and shallow, there is an increased amount of tidal air, and a consequent diminution of the exhalation of CO_2. As regards heat-production and tissue metamorphosis the investigations of E. D. Reichert are of great interest. He concludes that caffeine increases heat production, and as a corollary increases destructive tissue metamorphosis, and therefore coffee is injurious to health, especially when taken daily at frequent intervals. He also states that the assumed ability of coffee to replace food or to increase the power for work without corresponding tissue destruction is entirely deceptive, and the conditions produced by it are comparable to those occasionally observed in the insane, in hysteria, or in fright, when the individual may be capable of performing prodigious feats of strength and endurance, but nevertheless at the direct expense of his tissues.

As a causative factor in nervous disorders we can say that its rôle is that of a stimulant or depressant. It causes such disorders of the nervous system as

insomnia and restlessness, fullness and heaviness of the head; disturbances of special senses, as flashes of light before the eyes and ringing in the ears; frequency, irregularity, and intermittence of the heart's action, and muscular tremor.

When we come to consider tea as an etiological factor in backward children, it must be borne in mind that I allude to a strong decoction of tea, the form usually drank by those who habitually partake of the beverage. In the form of weak infusions drawn off from the leaves, I believe tea is harmless. Very little, if any, of the alkaloid or the tannin is dissolved, and its action is purely that of boiled water. The chief constituents of tea that exert a harmful effect on the system are theine, tannic acid, some volatile oil, and some less soluble ingredients. Its action on salivary and gastric digestion and upon the tubules of the kidneys is due to the large amount of tannic acid, upon the nervous system, and through that upon the muscles, to the alkaloid theine.

Dr. McKechnie reports some experiments to determine the influence of tea upon the digestion. He carried out these experiments by means of test tubes and of a gastric fistula formed in a monkey's stomach and found that tea infusion retards digestion. He is of the opinion that this is due not to the tannic acid alone, but also to some less soluble extractive matters. T. Lauder Brunton declares that the tannin in tea interferes very considerably with the digestion of fresh meat, but not with that of dried meat, such as ham or tongue. According to Roberts, tea has an intensely inhibitory effect, on account of the large amount of tannin, on the salivary digestion.

That tea prevents sleep is an experience with which every tea drinker has met. It quickens the intellect both in thought and imagination. As a result of the overstimulation a period of depression follows. In a report upon insanity in Ireland, in 1894, attention is called to the immoderate use of tea as a cause of mental diseases among the poorer classes. "While the moderate use of properly prepared tea," the report states, "is regarded as innocuous and even beneficial in its action on the nervous system, its ill effects, when decocted or overinfused, on persons who make it their staple article of diet, are dwelt on by almost all the resident medical superintendents in their several reports. Undoubtedly, the method of preparation adopted, and the excessive use of this article of diet, now so general among the poorer population, tend to the production of dyspepsia, which in its turn leads to states of mental depression highly favorable to the production of various forms of neurotic disturbances. Incidentally I want to mention that the report also states that the excessive use of tobacco, especially among the young, is thought to contribute in a minor degree to swell the statistics of mental failure. Dr. W. P. Spratling, in speaking of a case of multiple neuritis, mentions the significant fact that in Japan and India multiple neuritis is endemic, because of the habitual use of strong tea decoctions.

Dr. Thomas J. Mays, in contrasting the physiological action of caffeine and theine, states that his experiments made on frogs lead him to the following conclusions: (1) Theine produces spontaneous spasms and convulsions while caffeine does not. (2) Theine impairs the nasal reflex in the poisoning process, while caffeine does not, if at all, until the very last stage. Dr. Mays also claims that theine is a powerful local anesthetic. Thus we see that all the phenomena observed by Dr. Mays that were induced by theine, including spasms, convulsions, abolition of nasal reflex, and anesthesia, were purely of nervous origin.

With regard to its action on the structure of the kidney, Bartels states that tea acts sometimes as a diuretic due partly to its stimulant action on the heart and the rise of blood pressure, and partly to its stimulant action on the cells of the urinary tubules. As to its effects upon the urinary excretion, the following facts are given by Dr. W. J. Morton of New York. He made experiments on himself covering seven days: (1) A decided increase in the sulphuric and phosphoric acids and a moderate increase in the uric acid, while NaCl remained stationary. (2) A steady daily decline in the amount of urine excreted, on an average of 2 oz daily. (3) A large daily decline in the amount of urea excreted, on an average of 24 gr. per day. The most marked decline was that on the first day of 95 grains, when he suffered for twelve hours from extreme toxic effects of tea.

These results seem to point to nerve depression and a decrease of normal metabolism.

To sum up, then, tea in moderate doses is a stimulant to the nervous system, and in excess a depressant to the functional action of the nerve cells of the cerebrum, medulla, spinal, and vasomotor systems; and the nervous disorders produced by its use are such as are due to overstimulation and depression.

With such knowledge of the poisonous action of these drugs and from a study of the statistics as well as of the results obtained by my own investigations, I do not hesitate to say that the use of alcohol, tobacco, and coffee, or tea is an immediately exciting cause of backwardness in children.

111 East Second Street.

A CASE OF EXTENSIVE LEUCOPLAKIA BEGINNING IN CHILDHOOD, ACCOMPANIED IN THE EARLY STAGES BY FOLLICULAR KERATOSIS OF THE SKIN, AND FOLLOWED BY CARCINOMA OF THE TONGUE.*

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While, as a rule leucoplakia must be regarded as a strictly local affection due to some locally acting cause, yet, in exceptional cases, it seems probable that it is but the local expression of a widespread tendency on the part of the epithelium to increased cornification resulting from some constitutional fault, congenital or acquired. In the following case an extensive buccal leucoplakia was apparently only a part of a widespread disturbance of the process of cornification, since the skin as well as the buccal mucous membrane was affected.

Miss X., at that time a girl eleven years old, was brought to me in December, 1891, on account of an affection of the skin which consisted of irregularly shaped, variously sized patches of dirty-gray spines situated upon the sides of the neck, and hemp-seed sized, flat, slightly elevated, scaly lesions scattered over the back. The spines upon the neck projected considerably above the surface of the skin, giving it a grater-like feel, and were evidently situated in the dilated mouths of the sebaceous gland ducts from which they could readily be extracted with forceps. The exact nature of the lesions upon the back was somewhat less apparent, but they were regarded as also keratosic. Unfortunately the one excised for microscopic ex-

*Read before the College of Physicians of Philadelphia, December 5, 1906.

amination was lost before the examination was completed. In addition to the cutaneous disease the entire mucous membrane of the lips, tongue, and cheeks was a bluish white, looking as if painted over with a strong solution of nitrate of silver. The disease of the skin, which was slowly spreading to new regions, had lasted eighteen months; the duration of the leucoplakia was somewhat uncertain, but it had lasted for a considerable time. After local treatment, extending over a period of ten months, which consisted chiefly in the application of fairly strong ointments of salicylic acid and pyrogallol, the latter being used only on the back, the skin affection disappeared; but the leucoplakia, for which mouth washes of various kinds had been prescribed, changed but little if at all. With the disappearance of the eruption upon the skin the patient was seen infrequently and only at long intervals, and the treatment of the disease of the mouth was soon practically abandoned, as it caused little or no annoyance. In February, 1906, she again came under observation, complaining of some soreness of the tongue and of a lump upon the side of it. Inspection revealed extensive and marked disease: the entire surface of the tongue was a yellowish white, with here and there irregular areas of superficial ulceration, and a small wart-like nodule upon the right side posteriorly. A diagnosis of epithelioma having been made, the patient was referred to a well-known surgeon, who, agreeing in this diagnosis, advised the removal of half the tongue, which was done a few weeks later. Unfortunately, after doing well for twenty-four hours, she died suddenly and most unexpectedly from what was supposed to have been pulmonary embolism, but as no autopsy was performed the cause of death must remain somewhat uncertain.

Microscopical examination of the nodule on the side of the tongue fully confirmed the clinical diagnosis of epithelioma. Long, branching, and anastomosing processes of squamous epithelium extended from the epidermis deeply into the corium, and here and there were rounded and oval masses of epithelial cells containing numerous pearly bodies, the whole presenting a characteristic picture. Other portions of the tongue presented interesting microscopical changes. The entire epidermis showed pathological alterations: in certain areas there was a marked increase in its corneous layer, while the rete mucosum was everywhere thicker than normal. Here and there the interpapiliary prolongations of this latter layer were greatly enlarged in all directions, extending an unusual distance downward into the corium, representing, probably, a very early stage in the transformation of the morbid process into carcinoma. Immediately beneath the epidermis there was an abundant cellular infiltrate made up, for the most part, of polynuclear leucocytes, but also containing many plasma cells and an unusual number of small "mastzellen." This cellular infiltrate was most marked where the alteration of the epidermis was greatest, and was present to a greater or less degree in all the sections examined; indeed, the entire tongue showed evidences of an extensive glossitis of moderate severity.

Apart from the unusual association of keratosis of the skin and mucous membranes the case presents other features of more than common interest. The early age at which the leucoplakia began is most unusual. Mr. Butlin, in his well-known treatise on diseases of the tongue, states that this affection is practically unknown before the age of twenty, and is very rare in women. As already noted, my patient was of the female sex, and was only eleven years old when first seen, and it is quite certain that the leucoplakia had already existed for a considerable time. The occurrence of carcinoma of the tongue in an individual so young (26 years old) is also decidedly rare. Of eighty patients with cancer of the tongue observed by Mr. Butlin, but two were under thirty years of age.

Cases of the kind just reported are rare in literature, but it is not likely that the number of published cases represents, even approximately, the frequency with which leucoplakia is associated with keratosis of the skin, since, owing to the absence of annoying subjective symptoms, mild degrees of the latter readily escape the notice of both patient and physician. Morrow, some years ago (*Journal of Cutaneous and Venereal Diseases,* 1886), reported the case of a sailor, 31 years old, in whom, along with a very extensive follicular keratosis, the entire follicular apparatus of the skin being involved, there was a marked leucoplakia of the tongue with fissuring, the disease having lasted five years.

While this peculiar form of keratosis is observed most frequently in the mouth, it is not limited to this region, but may occur upon other mucous membranes adjoining the skin, such as the vulvovaginal, the anorectal, and especially the balanopreputial, presenting the same appearances found in the buccal and lingual mucous membranes and pursuing the same course.

The proportion of cases in which carcinoma follows leucoplakia is large. In the series of eighty cases of cancer of the tongue already referred to, Mr. Butlin found that a more or less marked leucoplakia had preceded the appearance of the cancer in 20 per cent., and this author believes that the frequency of this sequel is under- rather than overestimated.

Owing to the frequency with which it is followed by malignant disease more definite and exact knowledge of its etiology than we possess at present is greatly to be desired. Smoking and syphilis are the etiological factors to which it is most commonly attributed, but it seems to me very doubtful whether any considerable number of cases arise from these causes; it is much more likely that any frequently repeated or long-continued irritation, joined with a special tendency on the part of the epithelium to hyperkeratosis, may produce it. That it is, in the beginning at least, an inflammatory affection is quite evident from a study of its histopathology, but it is equally evident that the inflammation must possess some special characters since ordinary inflammatory processes do not give rise to keratosis and carcinoma.

Leucoplakia is notoriously rebellious to treatment, and few local applications cause any perceptible improvement. For this reason it seems to me worth while to call attention to two remedies which have been of real service in my hands in the past year or two. These two remedies are weak ointments of salicylic acid, 3 to 5 grains to the ounce, applied several times a day, and the *x*-ray, the latter having proved especially beneficial in two cases. In a long-standing and very marked case affecting the mucous membrane of the lower lip, in which there were several small, thick, horny patches and superficial ulceration, the careful use of the *x*-ray was followed speedily by a complete cure. I feel, however, in recommending this agent, I should urge the utmost care in its use since the mucous membranes are extremely susceptible to its action, and too long exposures or too frequent repetition will surely do harm. The duration of the exposures should rarely exceed three minutes, and they should not be repeated oftener than every five days.

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MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A PROPOSED ORGANIZATION OF ARMY SURGEONS.

IT is reported on good authority that there is no prospect of the passage of the bill for increasing the efficiency of the Medical Department of the Army, which is again to be sacrificed in favor of some other branch of the service. In the Spanish war the Medical Department was hampered until the public became frantic over the fever camps. In 1901, it was sacrificed to lessen opposition to the increase of the Army. In 1906, Speaker Cannon decided that only one military bill should pass, and the preference was given to the ordnance officers, and now the artillery is to be increased and the sanitary service again sacrificed. Congress seems to feel the weight of public opinion, which is naturally and properly against a large standing army. Increase of the force is deemed bad politics, and all changes towards greater efficiency must be carefully considered and grudgingly granted. Nevertheless, it seems remarkable that changes the least demanded by public opinion should be authorized, but that one for which there is the greatest clamor should be refused. The evidence of the urgent need of a better Medical Department is so great and overwhelming, it is amazing that Congress ignores it.

The cause of the lack of influence of the medical profession, and of the military part of it in particular, should be discovered. It has been suggested that the army surgeons are weak as a class because they have no organization. All their efforts are individual affairs, and lack the strength of concerted union. Their duties scatter them in all parts of the country, and now indeed of the world, they rarely see each other, there is no opportunity to organize, and they have made no advance in cooperation since the army was first organized.

There seems to be some truth in this suggestion. The cavalry and infantry officers are also scattered abroad, but each class is organized in associations for professional advancement. The military surgeons of the National Guard created an association which has taken in the Army, Navy, and Marine-Hospital services, but it is not exclusively interested in the Army Medical Department, and its members are mostly civil practitioners only temporarily attached to the local State militia as a side issue, and not as a profession. It does seem as though there were urgent need for the Army surgeons to organize for their own professional advancement, like all other specialists the world over. Indeed it would appear to be a duty. Congressmen are overwhelmed by private letters on thousands of subjects, and individual appeals to them are wasted effort. They really demand to know what an organization wants, and not what its individual members may suggest. Legislation is an impersonal and not a personal affair. The Army surgeons, then, should get together and work *en masse* for that increased efficiency which the good of the Army demands, and the absence of which was so deplorable in 1898. The public really look to the surgeons themselves to do this work, for no one will do it for them. Too much selfishness is always injurious in the long run, while a little self-sacrifice for the common good is often more beneficial to the individual himself. There is profound silence from most of the medical officers, so that we find it difficult at times to discover what are their wants, and what they think the Army needs. Congress wants the information, and so does the public. Organization would accomplish the purpose of inducing the surgeons to work in union and harmony, for the common good, and we see no reason why it should not be effected.

THE DANGERS OF GASTROENTEROSTOMY.

GASTROENTEROSTOMY has been favored to such an extent for the relief of a great variety of gastric conditions, that in the intense desire for its execution the conservative indications against such a procedure may only too often be forgotten. It is a matter of experience that the interference with the physiology of digestion which this operation entails is not well tolerated. The motor functions of the stomach are also disturbed by the procedure, for the churning power of this organ not only guarantees a thorough mixing of the food with the digestive fluids, but, as has been shown by experiment, the coarser particles of food are constantly being thrown back from the pylorus to the fundus and only the finely divided foods allowed to pass through the former. Portis summarizes the disadvantages and dangers attendant upon gastroenterostomy in a recent article in the *Annals of Surgery* for December, 1906, and, judging from his conclusions, it would appear that our general conception of the procedure is in need of revision.

The functional disorders of the digestive tract already referred to, which occur after gastroenterostomy and may seriously interfere with nutrition, and also the severe diarrheas, are due, not only to the premature emptying of the stomach, but also to the failure of neutralization by the bile and pancreatic juice of these acid secretions. This is due to the absence in the duodenum of the hydrochloric acid, which stimulates the flow of both of these. Jejunal ulcer following gastroenterostomy, which frequently occurs, and often with a fatal termination, should lead us, the writer believes, to advise the operation in question only as a last resort. It has also been suggested as a relief in certain cases of chronic dyspepsia in neurasthenic individuals where the condition is mainly due to imperfect mastication. Portis finds from a careful study of the reported results that here, as well as in the so-called atonic dilatation of the stomach and in gastroptosis, no benefit is derived from gastroenterostomy. In acute

ulcer of the stomach the operation is likewise not indicated unless perforation is imminent or has occurred, and in chronic ulcer only when repeated small hemorrhages menace life or there are extensive adhesions and the symptoms persist after prolonged and thorough medical treatment. The writer thinks that gastroenterostomy should always be done when the natural evacuation of the stomach is impossible and pyloroplasty or gastroduodenostomy is not feasible. This would include those cases in which there is mechanical obstruction due to pyloric stenosis and malformations due to hourglass contractions or disabling perigastric adhesions. When the operation is done, however, it is best to close off the pyloric opening. Although these views may not be in accord with the tendency which has been manifest within recent years to treat digestive disorders in great variety by operative procedures, they are eminently conservative, and if they should serve as a check to indiscriminate operation this can only act as an incentive to a more careful selection of cases in which such a course of treatment would actually be of value.

THE INJECTION TREATMENT OF SCIATICA.

Since the method of subcutaneous injection was first brought out by Wood of Edinburgh in 1853 it has been largely employed in the treatment of neuralgic affections. Various fluids of a narcotic or irritating character were used and met with favor for a time, only to be superseded by others. Schleich's name is also closely associated with the successful treatment of neuralgic conditions by the injection of his specially devised cocaine solutions into the perineural tissues. Sciatica was treated in this manner with very good results by a number of clinicians, cocaine or its derivatives being used. The toxic action of the drug continued to keep it more or less in disfavor, however, and as the results of the injection were deemed by many to be due to entirely mechanical causes the experiment was made of using physiological salt solution in its place, and Umber reports nine out of a total of fourteen cases cured by this means.

Notwithstanding the good results and the simplicity of the technique, these infiltration methods have not been very much used in actual practice, so that any new series of clinical observations should prove of interest. Among the latest of these is a report by Grossmann in the *Wiener klinische Wochenschrift*, No. 42, 1906, on fifteen cases of sciatica treated by infiltrations of salt solution. By means of a long needle (8 cm.) from fifty to one hundred grams of solutions may be injected, the needle being introduced directly down to the nerve at a point midway between the tuberosity of the ischium and the greater trochanter. The patient experiences a severe pain and paresthesia of the lower extremity as soon as the nerve is reached. The good effects of the injections are said to have been immediate, so that patients who were practically crippled could walk away from the operating table without assistance. In no instance were any unpleasant sequelæ observed. The effects on the disease in general were unfortunately not equal to the mere anodyne action of the injection, and in the majority of the cases the pain returned, but in a lessened degree, so that a second injection was necessary. The use of adjuvant measures such as hot air baths and hot packs was followed by excellent results, eleven of the fifteen patients being cured and three improved. It is evident therefore that although perineural injections cannot be looked upon as an absolute cure for sciatica, they do in combination with physical methods, produce a favorable result in most cases. The anodyne action of the procedure should certainly commend it for the alleviation, if only temporary, of this most painful affection.

APPENDICITIS AND JAUNDICE.

The appearance of icterus during the course of an appendicitis or following an operation for the relief of the latter condition has probably been observed by most surgeons, yet we find but scant notice taken of this complication in the very voluminous literature on the subject of appendical disease. That the condition is not infrequent is shown by the statistics of Reichel (*Zeitschrift für Chirurgie*, Vol. 83, No. 1), who found that among 165 of his cases of appendicitis jaundice had been noted in 18, and of these 10 resulted fatally. These mortality figures seem to afford sufficient reason for us to look upon this complication as indicating a very unfavorable prognosis. The type of jaundice under consideration is neither catarrhal nor obstructive, but is an indication of a general septic infection, the origin of which must be sought for in the inflamed appendix or its mesentery. Of quite a number of patients operated upon during the interval, Reichel found jaundice occurring in only one, and here the wound had suppurated.

Icterus, as a complication of appendicitis, usually occurs within from thirty-six to sixty hours after the beginning of the attack, and unless it subsides in a short time is rapidly succeeded by a condition of restlessness accompanied by a rise in the pulse rate, but not of the temperature. Reichel compares the clinical picture to that which we find associated with acute iodoform poisoning. In most cases the patients became delirious, then deeply comatose, and death followed in twenty-four hours. The fatal issue can only be ascribed to a severe and virulent septic infection, and this may be unaccompanied by peritonitis. In such cases not even an early operation will avert the unfortunate outcome. Reichel claims that the liver becomes involved by the transmission of masses of bacteria or infectious thrombi through the medium of the portal circulation. It would seem wise, therefore, to restrict all handling of the affected organ during an operation as much as possible, and the writer even urges that after forty-eight hours operative interference be limited to the evacuation of any abscesses which may be present.

Pancreatic Digestion in Man.

Thanks to the ingenious methods introduced into the physiological laboratory by Pavlov and his pupils, the processes of digestion have now been pretty thoroughly investigated, at least in animals whose functions are supposed to have a good deal in com-

mon with those of man. Through the impetus that gastric surgery has received of late years it has become possible in not a few cases to obtain confirmation in man of observations originally made in animals, usually dogs, and for the most part it has been found that the discrepancies in the results obtained are not very great. This is true particularly of gastric digestion, for opportunities of studying the physiology of the pancreas in man have so far been very infrequent. Such a case has, however, come under the observation of Wohlgemuth (*Berliner klinische Wochenschrift*, January 14, 1907) and has afforded material for some interesting studies. The patient was a man who was struck in the abdomen by a wagon pole and suffered a tear of the liver and a rupture of the head of the pancreas. He recovered from the injury, but a pancreatic fistula remained, and Wohlgemuth's observations were made on the juice collected from the sinus. It was found that, as in dogs, alterations in the composition of the diet caused great variations in the amount of juice secreted; for example, when fats predominated such as cream or milk, the flow was almost completely checked, meat caused it to increase, while carbohydrates gave rise to a very profuse secretion. Pavlov found in dogs that the secretion produced in response to either one of the three varieties of food stuffs would be richest in the particular ferment, *i.e.* amylopsin, steapsin, or trypsin, required for its digestion; but apparently this automatic adaptation does not take place in man, for it was found that the juice following the ingestion of fats was richest in all three ferments, while that accompanying the digestion of carbohydrates was weakest in its enzyme content. On the other hand, the effect of hydrochloric acid in stimulating pancreatic secretion and of alkalies in inhibiting it was the same in man as it had already been found to be in the dog. These observations would appear to justify a number of practical deductions, but Wohlgemuth so far restricts himself to the one suggestion that in dealing with cases of pancreatic fistula the diet should be a strictly antidiabetic one, and that alkalies should be administered, as in this way the secretion of pancreatic juice would be reduced to a minimum.

The Renal Origin of Increased Blood Pressure.

It is a commonly accepted belief that a constant elevation of blood pressure which may be associated with a nephritis is due to an adenomatous hyperplasia of the suprarenals and a marked stimulation of the functions of these organs. Ambard, in a recent communication (*Semaine Médicale*, No. 31, 1906), denies this and claims that the condition is entirely renal in origin. Although he admits that in nephritis this condition of the suprarenals is often found, it may also be present, he believes, when no elevation of blood pressure exists. In order thoroughly to comprehend the matter it is necessary to distinguish carefully between transitory and constant hypertension. The former is found in tabes, lead colic, eclampsia, epilepsy, exophthalmic goiter, and other conditions. Here the kidney is unchanged in its anatomical structure, and the tension is due entirely to functional disturbances. When the increase in arterial tension is permanent it is invariably associated with renal disease and may be either "reducible" or "irreducible." The former is found in connection with acute and subacute forms of nephritis, whereas those conditions of increased tension which are found with atrophic nephritis and advanced sclerosis of the glomeruli are irreducible. Ambard shows that increased tension in nephritis is not entirely dependent directly upon the changes in the vessels, but is caused also by the mechanical disturbances which result in a reduced permeability of the organ. Of importance in this connection is the relation between blood pressure and chloride metabolism. An increase in the blood pressure is favored by the retention of the chlorides, a decrease by an increased excretion of the same. Diuretics, such as theobromine, produce their effect on the blood pressure by stimulating the excretion of the chlorides. As controverting the usual ideas on the subject, Ambard's paper is of considerable interest and importance.

Education of the Cough in Tuberculous Patients.

The nature of cough varies from a slight irritable hacking commonly called "hemming" to the paroxysmal attack which may end in retching and vomiting. There is also a wide variation in the phonetic quality of cough. A cough may be metallic, stridulous, barking, or aphonic. A cough may occasion pain or this exertion may be painless. Sometimes a cough is frequent and continuous; in other cases it occurs only at certain times. Sometimes a patient coughs only on rising in the morning; again exertion may bring on a paroxysm. Change of temperature is another etiological factor to be considered. In 1878, Stoerk published a pamphlet in Vienna in which he discussed the existence of certain "cough-spots"—the posterior wall of the trachea, the interarytenoid fold, the under surface of the vocal cords, and the bifurcation of the trachea. This investigator does not believe that cough is caused by the accumulation of mucus in the small bronchi, but he believes that it must first reach one of the above-mentioned points. He does not, in this pamphlet, explain the cause of cough by reflex irritation. In *La Presse Médicale*, January 9, 1907, Ch. Mantoux discusses the cough of tuberculous patients. A tuberculous patient is nearly always a cougher. Since the remarkable work of Dettweiler, a distinction has been made in the case of pulmonary patients between the useful cough and the harmful cough. The useful cough is the one which serves to expel mucus. It ought to be reduced to a minimum; sometimes a "hem" which may at times be scarcely perceptible is sufficient to bring the mucus into the buccal cavity. The useless cough is one which does not end in expectoration, and every useless cough is harmful. Coughing fatigues the patient; it disturbs his repose and often his sleep. In some cases digestion is upset. It fatigues the muscles of the thorax and of the abdomen; it may even distend the abdominal walls to such an extent that hernia develops. It congests the larynx and the trachea. It disturbs the lungs by sudden and repeated changes in pressure when it is most advisable to immobilize these organs. It is a matter of common knowledge that a patient is often able to control a cough to a great extent by the exertion of his will power. He takes especial pains to do this when he is in the company of others, but when he is by himself there is not the same restraint, and he gives way to useless coughing. In order to prevent this the suggestion is made that the patient be instructed to indicate on a sheet of paper the number of times he coughs. In many cases this works like a charm, for these records are to be given to the physician at every visit, and the pride of the patient is bestirred to give a good account of himself.

THE RECOGNITION BY CONGRESS OF DR. CARROLL'S SERVICES TO SCIENCE.

THE Senate Committee on Military Affairs has voted to support a bill authorizing the promotion of Lieut. James Carroll of the Army Medical Corps to be a Major, and all who believe that devoted service in the cause of science is deserving of recognition will hope to see the bill passed. Dr. Carroll enlisted as a private thirty-three years ago, and was soon promoted to be a sergeant. He served as hospital steward for fifteen years and then, having in the meantime studied medicine and received a degree, was appointed contract surgeon in 1898. He was one of the commission under Major Walter Reed appointed to study yellow fever in Cuba, and was the first to submit to the bite of an infected mosquito in order to test the theory of the transmission of the disease. The severe attack of yellow fever which followed was the first link in the chain of evidence confirming Finlay's theory, and this example inspired others to submit to like tests. In 1902 he was appointed first lieutenant and assistant surgeon, the age limit having been waived to permit him to appear for examination. In the normal course of events, had he entered the medical corps at the usual age, he would now have reached the rank of major, and it is in recognition of his high scientific attainments and notable achievements in experimental medicine that this Senate bill has been introduced to give him the rank which others in the service of his own age have reached but which, by means of his late entrance into the medical corps, he could not attain in regular course. The highest rank which he could hope to reach before coming to the age of compulsory retirement would be that of captain. The proposed legislation is exceptional, but the circumstances calling for it are exceptional, for though Dr. Carroll's years in the medical service have been comparatively few they have been crowded with work of a high order, and of inestimable value to medical science and to humanity. The bill should be passed, if only to show that republics are not ungrateful.

News of the Week.

Scholarships and Fellowships of the Rockefeller Institute for Medical Research.—This institute purposes to award for the year 1907-1908 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions: The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physiological and pathological chemistry. They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects, and are granted for one year. The value of these scholarships and fellowships ranges from eight hundred to twelve hundred dollars each. It is expected that the holders will devote their entire time to research. Applications accompanied by proper credentials should be in the hands of Dr. L. Emmett Holt, 14 West Fifty-fifth street, Secretary of the Rockefeller Institute, not later than April 1, 1907. The announcement of the appointments is made about May 15. The term of service begins preferably on October 1, but, by special arrangement, may be begun at another time.

Cocaine Selling and Bottle Washing.—At its regular meeting last week the Board of Health added two sections to the sanitary code, the one prohibiting the sale of cocaine except upon a physician's prescription, and the other requiring the exercise of proper cleanliness in dealing with milk and cream containers. This clause reads that it shall be the duty of all persons having in their possession bottles, cans, or other receptacles containing milk or cream, which are used in the transportation and delivery of milk or cream, to clean or cause them to be cleaned immediately upon emptying; and no person shall use or cause to be used any such receptacles for any purpose whatsoever other than the holding of milk or cream, or receive or have in his possession any such receptacle so used or which is unclean or in which milk or cream has been allowed to stand until offensive. Offenders will be liable for misdemeanor. This regulation is aimed principally at the wholesale and retail milk dealers, though housewives also come under its provisions.

New York State Child Labor Law.—The Senate Judiciary Committee on January 30 decided to report favorably and without amendment the Anti-Child Labor bill introduced by Senator Page and drafted in accordance with recommendations in the governor's message. The bill makes it a misdemeanor to employ minors under sixteen years of age in factories for more than eight hours in each twenty-four, and stipulates that the hours of employment shall be between 8 in the morning and 5 in the evening. The presence of a minor in a factory would be considered presumptive evidence of a violation of the law.

New Health Department Dispensary.—Last Monday the Health Department opened its third tuberculosis clinic. The new dispensary is in the Bronx Health Department Building, at Third avenue and St. Paul's place, and will be open Monday, Wednesday, and Friday afternoons, from 2 to 4 o'clock. Later it will be opened on Tuesday, Thursday, and Saturday afternoons, and possibly in the evenings also. The other two dispensaries are at the Health Department building, Fifty-fifth street and Sixth avenue, and in Brooklyn. Only consumptives are treated in these clinics.

Anti-Noise Bill Passed.—The bill intended to suppress unnecessary whistling by steam vessels plying in harbors about large cities, which was introduced through the efforts of Mrs. I. L. Rice of this city, has passed the Senate and is ready for the President's signature. Supervising Inspector Harris issued an order last November providing for the correction of the abuse, but until the bill becomes a law he is without authority to enforce the order if a case should be carried into the courts. The particular waters referred to in Mr. Harris' order are Boston Harbor, west of Castle Island; Philadelphia Harbor, between the uppermost and lowest lines of ferries, and in New York Harbor, the East River, Harlem River, North River, Spuyten Duyvil Creek, and Buttermilk Channel.

Lectures for Cancer Homes.—Dr. James J. Walsh of this city will give his third series of Lenten lectures in aid of the two homes for destitute cancer patients, managed by The Servants of Relief for Incurable Cancer. The lectures will be held on Thursday mornings during Lent at Mendelssohn Hall and will have as their subject "Some Women Who Did." The two homes of the organization, one at 426 Cherry street, New York, and the other at

Hawthorne, N. Y., are entirely dependent on charity, as no pay patients are treated.

New Medical Inspectors Appointed.—Twenty new medical inspectors have been appointed by the Health Department. Eleven of these will be assigned to Brooklyn, five to Manhattan, two to the Bronx, and one each to Richmond and Queens. There are at present thirty-two inspectors in Brooklyn and fifty-seven in New York. With these additions it will be possible to make the examinations of school children more systematically, and especially to investigate the sicknesses of absentees. Last year over one thousand cases of unreported infectious diseases were discovered in this way.

To Test Hudson River Ice.—Five chemists and bacteriologists in the employ of the Merchants' Association of this city have been sent up the Hudson to examine samples of ice taken from the various fields along the river where ice harvesting is going on, with a view to determining the healthfulness of the supply.

Contagious Diseases in Chicago.—It is estimated that the total number of cases of contagious diseases, particularly diphtheria and scarlet fever, that have occurred in Chicago during the present epidemic is not far from 15,000. New cases of both diseases are still being reported in great numbers, though it appears that the morbidity is beginning to decrease, and the later cases are of a somewhat milder type than the earlier ones had been. In particular many instances of the aberrant form of scarlatina sometimes called Duke's disease have been observed. In an effort to restrict the dissemination of the disease the health authorities have requested the citizens to abandon for the time being social engagements, such as balls and parties, though the schools and Sunday schools are not interfered with. A movement is also on foot for the establishment of a new isolation hospital.

Poisonous Embalming Fluids.—Senator Breit of the Illinois Legislature recently introduced a bill for the purpose of prohibiting the use of arsenic and strychnine in embalming fluids. He has prepared two bills, one of which reads that no undertaker or other person shall embalm or inject into the dead body of any person any fluid or preparation of any kind before obtaining permission from the coroner when such body is the subject of coroner's inquest. The second bill provides that, "if any undertaker or other person embalms with, injects, or places on any dead human body any fluid or preparation of any kind which contains strychnine or arsenic, he shall be fined not exceeding $50 for each offense."

State Sanatorium for Tuberculosis in Illinois.—A bill recommended by Governor Deneen, and introduced by Mr. Glacken, of Cook County, asking for an appropriation of $150,000, for the establishment of a State sanatorium for tuberculosis, is expected to pass.

Bureaus to Prevent Suicide.—The officials of the St. Louis Salvation Army have announced their intention of forming a department for the purpose of discouraging suicide. The project is founded on a similar plan which has been put in execution in London by Gen. Booth, and which it is said has prevented much loss of life through self-destruction. The plan is to give practical and friendly advice to distressed persons. This advice will be given daily, free of charge, to all who need it. Letters will be individually treated. Absolute secrecy is to be maintained in all cases, and no inquiries are to be made.

Insanity in Connecticut.—The biennial report of the Connecticut Hospital for the Insane, just published, shows that there are now 2,487 patients in the institution, and that the annual increase of insane persons in the State is about 120.

Woman's Army Canteen Club.—This organization of Washington, D. C., is making active efforts to have the canteens reestablished at army posts and is now engaged in founding branch clubs throughout the country in order to popularize the movement. A delegation which recently called upon President Roosevelt received the assurances of his personal support in the work, with which he is thoroughly in sympathy.

Death Penalty Abolished in Kansas.—Kansas, which has never had a legal execution, will probably never have one in the future, as a bill was passed by the Legislature on January 29 abolishing capital punishment. No Kansas governor has ever signed a death warrant, and the prisoners condemned to capital punishment have been treated as life convicts.

Report of British Tuberculosis Commission.—The Royal Commission on Tuberculosis appointed some years ago has issued a second *ad interim* report confirming the conclusion reached in the first *ad interim* report to the effect that Koch was mistaken in alleging that bovine tuberculosis was not a menace to the human race. The commission has arrived at the conclusion that there can be no doubt that a certain number of cases of tuberculosis occurring in the human subject, especially children, are the direct result of the introduction into the human body of the bacillus of bovine tuberculosis. There is also no doubt that in a majority of these cases the bacillus is introduced through cow's milk. This opinion is founded on a very extensive series of observations and experiments, which are described in the report. The late Sir Michael Foster was chairman of the commission.

Meningitis in Great Britain.—Cerebrospinal meningitis, which has hitherto been rather rare in the British Isles, is very prevalent in Scotland and the North of Ireland. It appears to be epidemic in Glasgow, where 103 cases, with 47 deaths, occurred in January.

Cocaine in India.—The Bureau of Commerce and Labor has been informed that the Government of India has prohibited the bringing in of cocaine by means of the post, and has restricted its importation by any other means to cases in which it is imported by persons, or by their authorized agents, who have been especially permitted to import the drug by a local Government or administration. The Government has also empowered the postal officials to search for any cocaine in course of transmission by post, and to deliver all such to the nearest excise officer.

Famine in China.—The reports from China continue to show the danger of a widespread epidemic that is accompanying the famine. It is estimated that 10,000,000 people, living in an area of 40,000 square miles, are affected to a dangerous degree by the lack of food, clothing, medical supplies, and proper shelter. In the huge concentration camps formed by refugees from the stricken districts the sanitary conditions are as bad as possible, and the authorities are overwhelmed by the task confronting them. An outbreak of plague is reported from Niu-chwang, which, however, is not in the famine district.

A New University in Frankfort.—A recent issue of the *Lancet* notes the beginning of a movement to establish a university in that city. Rich citizens are said to have collected funds for the purpose, but since the creation of universities belongs exclusively to the State and not, as in America, to private initiative, the funds will be given to the Government if it approves of the objects of the contributors. Frankfort has for a long time possessed the nucleus of a medical faculty; the old Senckenberg Institute, founded by a wealthy citizen, contains a number of well-furnished chemical, physical, anatomical, and other laboratories; the Royal Institution for Experimental Therapy under the direction of Professor Ehrlich attracts every year a great many graduates from other parts of Germany and from abroad; the hospitals of Frankfort are of the first rank, and contain an immense amount of clinical material which has not hitherto been used for teaching purposes. The establishment of a university will therefore be easy, so far as the medical faculty is concerned. No new universities have been founded in Germany for about a century, except at Strasburg, where the old university existing previously to the French occupation was reestablished in 1872.

Maine Academy of Medicine and Science.—In view of the fact that there is a bill relating to medical expert testimony now pending in the State Legislature of Maine, the Maine Academy of Medicine and Science has decided to devote its next regular meeting on February 13 to medicolegal subjects, and Mr. Clark Bell of this city has accepted an invitation to deliver an address.

Springfield (Mass.) Academy of Medicine.—At a meeting of the leading physicians of western Massachusetts, held in Springfield on January 24, preliminary steps were taken toward the founding of the Springfield Academy of Medicine, a post-graduate institution for the teaching of medicine and its advancement generally on a cooperative basis. The officers elected are: *President*, Dr. J. A. Houston, Superintendent of the State Hospital for the Insane at Northampton; *First Vice-President*, Dr. R. H. Seelye; *Second Vice-President*, Dr. A. O. Squier; *Secretary*, Dr. W. R. Weiser; *Treasurer*, Dr. W. H. Van Allen. Articles of incorporation will be filed and a charter applied for under the laws of Massachusetts. It is also planned to erect a handsome academy building.

The American Society of Sanitary and Moral Prophylaxis.—The next annual meeting of this society will be held at the New York Academy of Medicine on Thursday, February 14, at 8:30 P.M. Papers will be read by Drs. Herman G. Klotz, James Pederson, A. D. Mewborn, Follen Cabot, Jr., and Frederick Holme Wiggin.

The Medical Society of the County of Kings.—At the annual meeting of this society, held January 16, 1907, the following officers were elected: *President*, Dr. Glenworth Reeve Butler; *Vice-President*, Dr. Onslow A. Gordon; *Secretary*, Dr. Henry G. Webster; *Treasurer*, Dr. John R. Stivers; *Associate Treasurer*, Dr. H. M. Mills; *Associate Secretary*, Dr. W. A. Jewett; *Directing Librarian*, Dr. James P. Warbasse.

Annual Meeting of the Chicago Medical Examiners' Association.—At the annual meeting of this association, held January 31, Dr. J. M. Patton was elected *President*, Dr. E. Eisenstaedt *Secretary*, and Dr. Ulysses Grimm *Treasurer*. The society adopted a resolution advocating the establishment of a National Department of Public Health.

Santa Barbara (Cal.) County Medical Society.—The officers for this society for the year 1907 are: *President*, Dr. C. S. Stoddard; *Vice-President*, Dr. E. A. Dial; *Secretary*, Dr. W. T. Barry; *Treasurer*, Dr. D. A. Conrad; *First Vice-President-at-Large*, Dr. W. A. Rowell, Goleta; *Second Vice-President-at-Large*, Dr. R. W. Brown, Santa Maria.

Muscatine County (Ia.) Medical Society.—The election of officers of this society for the ensuing year has resulted as follows: *President*, Dr. F. H. Little, Muscatine; *Vice-President*, Dr. C. B. Kimball, West Liberty; *Secretary-Treasurer*, Dr. T. F. Beveridge, Muscatine.

Nueces County (Texas) Medical Association.—Officers as follows were elected at the recent meeting of this society, held at Corpus Christi: *President*, Dr. Henry Redmond; *Vice-President*, Dr. W. E. Carruth; *Secretary and Treasurer*, Dr. C. H. Yeager.

Trumbull County (Ia.) Medical Association.—At the meeting recently held in Warren officers were elected as follows by this society: *President*, Dr. D. E. Hoover; *Vice-President*, Dr. T. O. Clingan; *Secretary and Treasurer*, Dr. F. K. Smith.

Aroostook (Me.) County Medical Society.—The medical societies of northern Aroostook and southern Aroostook have united in one organization—the Aroostook County Medical Society, which met at Houlton last week and elected officers as follows: *President*, Dr. A. D. Sawyer, Fort Fairfield; *Vice-President*, Dr. H. L. Putnam, Houlton; *Secretary*, Dr. F. H. Jackson, Houlton; *Treasurer*, Dr. W. E. Sincock, Caribou.

Iowa Clinical Surgical Society.—Under this name a new society has been formed in Des Moines, with the following officers: *President*, Dr. Pond, Dubuque; *Vice-President*, Dr. McCarthy, Des Moines; *Secretary and Treasurer*, Dr. Fairchild, Jr., Clinton. The State is divided into four districts, which will be in charge of the following counselors: Dr. Brockman, Ottumwa; Dr. Knott, Sioux City; Dr. Macrae, Jr., Council Bluffs; Dr. Hegebeck, Dubuque.

Sir Michael Foster, K.C.B., died on January 30, at the age of seventy-one years. At the time of his death he was Unionist member of Parliament from London University, his election dating from 1900. He held at various times the posts of professor of practical physiology at University College, London; prælector of physiology, Trinity College, Cambridge; president of the British Association; professor of physiology, Cambridge; and secretary of the Royal Society. He was joint editor of "Scientific Memoirs of Thomas Henry Huxley."

Prof. Dmitri Ivanovitch Mendeleef of St. Petersburg died on February 2 at the age of seventy-three years. He was for many years professor of chemistry in the University of St. Petersburg, and had made numerous discoveries in that branch of science. He was best known for his researches on the periodic law in relation to the elements, and by its means was able to predicate the existence and general properties of the three elements, gallium, scandium, and germanium, before they were discovered.

The Late Dr. William P. Brandegee.—The following minute has been adopted by the New York Otological Society: *Whereas*, During the past summer death suddenly called from us our friend

and fellow member, Dr. William P. Brandegee; and *whereas*, in his professional and private life he was known to us as an excellent example of all for which this society stands; then be it *Resolved*, That we place upon record the deep sense of sorrow which we feel at the loss of our colleague, and that we extend our sincere sympathy and condolence to the bereaved family. *Resolved*, That a copy of these resolutions be sent to them, and a copy be sent to the medical journals for publication. (Signed.) Arthur B. Duel, James F. McKernon, Joseph A. Kerefick.

Obituary Notes.—Dr. E. Elsner C. Guntiier of this city died on January 31 at the age of forty-two years after an illness of several months. He was born in this city and graduated from Harvard in 1889. He then entered the Harvard Medical School, after which he completed his professional education abroad.

Dr. George Douglass of Whitmire, S. C., died on January 22 at the age of fifty-six years. He was graduated in medicine in Baltimore in 1897 and had practised in Whitmire ever since.

Dr. Absalom W. Adair of Des Moines died suddenly of apoplexy on January 22 at the age of seventy-eight years. He was a pioneer physician of Jasper county, and had practised in the town of Kellogg until five years ago, when he removed to Des Moines.

Dr. B. F. Crummer of Omaha, Neb., died on January 24 at the age of fifty-nine years, as the result of an attack of paralysis beginning ten months ago. Dr. Crummer was born at Elizabeth, Ill., and received his medical education at the University of Ann Arbor and Bellevue Hospital Medical College in this city. He went to Omaha in 1888 and had practised there since that time.

Dr. Augustus V. L. Brokaw of St. Louis died on January 25 of a gastric affection at the age of forty-four years. He was born in St. Louis, his father, Dr. F. V. L. Brokaw, being the superintendent of the St. Louis City Hospital. He was graduated in medicine from the medical department of Washington University in 1883 and then spent some years abroad. He held several teaching positions at the time of his death and was well known as a railway surgeon.

Dr. Elliott H. Woolsey of Oakland, Cal., died on January 21 of pneumonia, after a brief illness. Dr. Woolsey was born near Rochester, N. Y., in 1843 and was educated at Hamilton College. He served as a surgeon in the regular army during the Civil War and shortly after its close he went to California, beginning to practise in Oroville. In 1873 he removed to Oakland and soon became prominent in medical circles. At different times he was president of the State Medical Association, Health Officer of Oakland, and member of the Oakland Board of Health, and for a number of years he conducted a free clinic for the poor. He retired from practice eight years ago, since when he had spent most of his time in travel.

Dr. J. Henry McNeel of Fond du Lac, Wis., died on January 23 of apoplexy. He was born in Essex county, N. Y., in 1838, and in 1854 his family emigrated to Wisconsin. He received his medical degree from Rush Medical College in 1863 and began practice at Greenbush, Sheboygan county, where he remained until 1872, when he removed to Fond du Lac. He was for several years a member of the State Board of Health and had also served as a member of the State Legislature.

Dr. Josiah P. Sugg of Tarboro, N. C., died on January 24 at the age of sixty-six years. Dr. Sugg was a native of North Carolina and received his medical education in the College of Physicians and Surgeons of this city.

Dr. Halsey B. Jenks of Ypsilanti, Mich., died on January 22 at the age of sixty-four years. He was a veteran of the Civil War, having served in the Twentieth Michigan Infantry, and was graduated from the University of Michigan Medical School in 1870.

Dr. Thomas F. Mayham of Fond du Lac, Wis., died suddenly on January 21 at the age of seventy-seven years. He was born in Blenheim, N. Y., but removed to Fond du Lac in 1854. After serving for some years as a school superintendent, he was graduated from the medical department of the University of Ann Arbor in 1859. He was elected Mayor of Fond du Lac in 1882 and held the office during several terms.

Dr. Wm. E. Ard of Westchester died on January 24, 1907, aged forty years. He was a graduate of the University of Maryland, was formerly house surgeon on the staff of the Woman's Hospital in this city, and attending surgeon to the City Hospital in Binghamton. He was practising in Westchester, New York City, until a few months before his death, when failing health compelled him to give up his work.

Dr. William Clawson Lott died at Philadelphia on January 22 at the age of forty-seven years. He was graduated from Brown University in the year 1882 and from the medical department of the University of Pennsylvania in the class of 1885. His earliest ancestor in America settled in New England in 1635 and he came of distinguished Revolutionary stock. He was a member of the First Troop, Philadelphia Cavalry, in which he served as quartermaster sergeant in Porto Rico during the Spanish-American War.

Dr. Wm. H. H. Miller died at Williamsport, Pa., on February 2 at the age of eighty-two years. He was graduated from the Pennsylvania Medical College in the class of 1849.

Correspondence.

THE NATURE OF JENSEN'S MOUSE TUMOR.

To the Editor of the Medical Record:

Sir:—My attention has just been directed to a letter in your issue of January 5, from Dr. Beard of Edinburgh. I welcome criticism even when it is adverse, but I deprecate gross misrepresentation such as enters largely into his communication.

Dr. Beard's special point against me is that I have not adduced my scientific reasons for denying the cancerous nature of Jensen's mouse tumor, but have, instead, endeavored to get the matter decided by an unscientific *ipse dixit*. Considering that the publication he refers to is a closely reasoned argument in support of my thesis, in which every special fact bearing on the subject is duly set forth and appraised, I must repudiate his suggestion as being neither reasonable nor fair.

The great mistake of those who have so prematurely identified "Jensen's tumor" with cancer is that, in making their diagnosis, they have placed far too much reliance on histological appearances—the fallaciousness of which has so often been demonstrated in recent times—and far too little on the *ensemble* of the indications available for diagnostic purposes. Dr. Beard's so-called "chemical test" for cancer belongs to the same order of fallacious experience; for chemical analysis has hitherto failed to reveal the presence of any specific cancer substance. The claims of Petry, Bergell, Blumenthal, *et al*, to have discovered a special cancer ferment, have very little basis in ascertained fact, but are rather the outcome of apriori considerations, which differ but little from Rokitansky's "kakoplastic albumin," and other kindred speculations, long since forgotten. The tissues of malignant tumors, like the normal

tumors probably teem with enzymes, but there is no proof that their specific qualities or quantities are in any way proportional to malignancy. As Buxton has judiciously remarked: "It has been shown that a number of enzymes are commonly present in cancerous tumors, but their amount and kind are independent of the character or malignancy of the growth, and are very similar to those found in the normal tissues of the same part." In short, it is evident that until we know more about the enzymes of normal tissues it is impossible to arrive at any definite conclusion as to the special significance of the enzymes of cancerous tumors. It quite accords with this, that cancerous tumors originate fairly often in the pancreas, and that their constituent cells secrete trypsin—"the killer" of cancer, according to Dr. Beard—as the important researches of Waring and others have clearly proved. In the light of the long-continued and oft-repeated failure of morphology and chemistry to reveal the presence of any specific cancer substance, we shall probably not be far wrong in concluding that there are no specific cancer substances, other than such as are concerned in determining the specificity of the various physiological tissue elements.

Now what are the plain facts in respect to which "Jensen's tumor" differs *in toto* from cancer or any form of human malignant tumor? They are briefly these: The disease is highly contagious; thus, when infected animals are introduced into cages with healthy animals the latter take the malady, as if by local contagion; and sometimes the proportion thus infected is so considerable as to constitute veritable epidemics. Nothing like this occurs with human cancer—at least, not outside the Munchausen sphere—but in the contagious venereal malady of dogs analogous conditions are commonly met with. "Jensen's tumor" is readily transmissible by implantation to other mice, the proportion of successful experiments often being as high as 30 per cent. No such property is ever manifested by human cancer; but, with the contagious venereal pseudoplasms of dogs similar conditions obtain. A considerable proportion of white mice are immune to the contagion of this disease, whether in its spontaneous or experimentally determined form, and sometimes whole families manifest the peculiarity. The same phenomena have often been noted in the contagious malady of dogs. Moreover, "Jensen's tumor" fairly often (over 20 per cent. —Clowes) undergoes spontaneous cure; and the cured animals are then immune to further contagion, and give only negative results when inoculated, as Gaylord has specially pointed out. With human malignant tumors no such spontaneous curability has ever been scientifically demonstrated, although sometimes alleged; but, in the several pseudoplasms of dogs, this phenomenon is of common occurrence. "Jensen's tumor" is circumscribed and easily enucleable, the tissues of the host forming no part of it; moreover, the latter do not acquire cancerous properties, nor do they become interpenetrated by injurious processes of the neoplasm; and besides this, "Jensen's tumor" causes no cachexia. Finally, according to Apolant and Ehrlich, "Jensen's tumor" in the course of experimental transmission often changes its type—from the epithelial to the sarcomatous, etc., and Morau found, under similar circumstances, that its physiological type also changed, with corresponding alteration in its power of inoculability.

In all of these vitally important respects, which, taken together, are crucial for diagnostic purposes, "Jensen's tumor," whatever its real nature may eventually turn out to be, is totally unlike any form of human malignant tumor.

W. Roger Williams.

Clifton, Bristol, England.

UNNECESSARY OPERATIONS THE OPPROBRIUM OF MODERN SURGERY.

To the Editor of the Medical Record:

Sir:—It cannot be denied that at the present day many operations are performed that are not only unnecessary but unjustifiable. This is especially true of abdominal and pelvic surgery. Time was when ovaries were removed by the peck for all sorts of nervous disturbances, which had no more to do with the condition of the ovaries than with the change of the moon. This was the era of Battey's so-called "normal ovariotomy," than which no greater outrage could be perpetrated upon a confiding woman. To-day it is not fashionable to remove the ovaries for an attack in which the globus hystericus is the most prominent symptom, but those organs are still subjected to certain operative procedures for pathological conditions which exist only in the mind of the operator. At times the ovary is removed for what the operator is pleased to dignify by the term of "ovarian cyst." This cyst is sometimes no larger than a cherry, and very often much smaller. At times the ovary is not removed, but the cyst is punctured with knife or cautery, and the fallopian tube, which he claims is the seat of salpingitis, but which may be perfectly normal, is resected. What justification is there for opening a woman's abdomen for such conditions? The operator may justify himself by saying that the woman suffered from pelvic pain which justified the operation. Now, every experienced gynecologist knows that this is not true; such conditions do not give rise to pain. If the woman really suffers pain she is probably a neurotic subject, whose pains and aches are due to anemia and general malnutrition. If she did not have pain in her pelvis she would have it somewhere else. Anstie has truly said "neuralgia is the cry of the nerves for healthy blood," and such patients require iron, fresh air, sunshine, and good food—not a mutilating operation.

The uterine adnexæ are not the only organs subject to atrocious assault, the uterus itself comes in for more than its fair share. To say nothing about the injury so often inflicted on it by the ignorant, through bungling attempts at dilatation and curettage, or malad[illegible] it trachelorrhaphy, the organ is often extirpated for no apparent reason, except the undying fondness of some men for notoriety or money. The uterus is often removed for a small myoma the size of a walnut. The writer saw two such cases during the past month. In one case abdominal hysterectomy was done by a prominent New York surgeon; in the other an inexperienced man performed a vaginal hysterectomy, which was attended by so much hemorrhage that he opened the abdomen in the hope of controlling it. In this he was not successful; more or less bleeding continued until the death of the patient about two days later. At the December meeting of the Obstetrical and Gynecological Section of the New York Academy of Medicine, Dr. Henry C. Coe protested against the performance of hysterectomy for insignificant benign growths, and the writer, in indorsing Dr. Coe's protest, stated that in his opinion such operations should be looked upon as pure surgical quackery. The overzealous gynecologist seems to be constantly in search of an opportunity to extirpate the uterus. If a woman has a large subinvoluted uterus with catarrhal endometritis attended by profuse menstruation, he scrapes the uterus and sends some of the scrapings to a personal friend—a *soi-disant* microscopist, who would not know a cancer cell from a load of hay. His friend, the "microscopist," having been told what the would-be operator "fears," proceeds to find "suspicious-looking cells." That is enough—out comes that uterus. Again, a woman has a badly lacerated cervix with ectropion and erosion. The cervix has certainly an angry look, but the experienced man knows that it is not cancerous. He has operated on scores, yea, perhaps hundreds, of similar cases by Emmet's method, and they have been permanently cured. But our enthusiastic confrère is ultra scientific. He is not willing to trust to his naked eye, or anybody else's naked eye; so he chips off a piece of the cervix and sends it to the same microscopist, being careful to tell him what he himself thinks. The microscopist is either again "suspicious" or "in doubt," and, as Cavendish says in regard to whist, "when in doubt play trumps," our friend plays trumps, and out comes that uterus also. Far be it from the writer to disparage the well-trained, intelligent, honest microscopist, whose assistance is invaluable in many doubtful cases. He makes reference to those who, without proper qualification, pose as experts, and whose opinions are often used by those who are overanxious to operate as a make-weight in overcoming the objections of patients or of the family physician, to operations which should never be performed. In a paper entitled "A Plea for Early Operation in Cancer of the Womb," the writer has denounced the criminal neglect and procrastination which allows a woman with cancer of the uterus to drift into an incurable state before she is referred to an operative gynecologist, and he sincerely hopes that nothing contained in this communication will detract from the force of what he then said. Every available means at our command should be brought to bear that may enable us to diagnose cancer in its incipiency.

It is one thing to make an honest search for the truth in the interests of the patient and quite another thing to play the charlatan, while pretending to base one's practice upon scientific accuracy. Next to the uterus and adnexæ, the appendix vermiformis and kidney are the most abused organs. With some practitioners every belly ache is called appendicitis, and an operation for the removal of a normal appendix follows forthwith. The writer has seen the appendix removed in a number of cases in which it was absolutely normal, and within the past five years he has been consulted by many women who had been told that they should submit to an operation for what was said to be appendicitis, but the subsequent history showed that no operation was necessary in most of the cases; and in those in which abdominal section was necessary it was found that the appendix had nothing to do with the symptoms

complained of. In times gone by, when a physician was too indolent or too ignorant to make a diagnosis, he labeled the disease "malaria," and everybody was satisfied. Now the so-called surgeon calls everything appendicitis, and cuts out the appendix, with equally gratifying results. The furor for unnecessary operations has spread to the laity, and the cheerfulness with which the would-be fashionable man parts with his appendix is only equaled by the *abandon* with which the modern woman submits to the evisceration of her pelvis by her pet gynecologist. Practising fantastic operations on the kidney keeps some men in the profession busy. A poor, thin, neurotic woman, whose circumrenal fat has been absorbed, leaving the kidney anchored only by its moorings, consults one of these men. With wonderful sagacity he diagnoses "floating kidney" and at once performs nephrorrhaphy. If from rest in bed and general improvement in health therefrom a layer of fat is deposited around the kidney the woman is cured, and the doctor gives the credit to the operation.

If the patient does not gain flesh after the operation, in a few months the kidney "floats" again as badly as ever. But the operator may remain ignorant of the fact, for the patient may consult somebody with common sense enough to put her in bed, feed her generously, remove all sources of worry, and thus put her in the way of gaining flesh, and after a time the kidney stays where it belongs. Splitting the capsule has been advised and practised as a panacea in Bright's disease. The writer has no knowledge of any authentic case in which a cure has been effected, but he knows of one case reported as a cure, although the patient died a short time after the operation, and the kidneys are in pickle in a jar which is the property of a well-known pathologist. Prostatectomy seems to be the latest fad, and the man of sixty who is still carrying his prostate where nature intended that he should, is looked down upon by his contemporaries who have yielded theirs as a contribution to extend the popularity of this surgical innovation. Let us hope that the interest shown in the prostate may result in giving a much needed rest to the appendix and the kidney.

From long experience the writer is fully aware of the difficulties and responsibilities involved in the diagnosis and treatment of serious abdominal and pelvic lesions, and is ever ready to deal charitably with the errors of judgment of a professional brother. We all make mistakes—we all are liable to sins of omission and sins of commission; but there is a vast difference between the honest mistakes of the well-trained, intelligent surgeon, who looks upon every case with an eye single to the good of the patient, and the stupid blunders of the inexperienced or meddlesome operator, whose ignorance of pathology and of the natural history of disease causes him to see in every case an indication for operation, and who is ever willing to sacrifice the good of the patient to his own love of self aggrandizement.

G. H. Balleray, M.D.

Paterson, N. J.

RECURRENT CORYZA IN CHILDREN.

To the Editor of the Medical Record:

Sir:—In your issue of January 5, 1907, there appears an abstract of my paper entitled "Rhinitis in Children, Including Recurrent Coryza, Due to Intestinal Autointoxication." In this article I am quoted as saying: "When this form occurs in children the urine invariably contains indican. The peculiar gastric and intestinal disturbance arises from overeating of meat. It should be prohibited in every form as soon as any evidence of the rhinitis appears. Saline cathartics should be given, sodium phosphate being administered in sufficient quantities to produce liquid stools, and the administration kept up until the urine contains indican." In the article referred to, I say:

"When the intestine contains stagnant fecal matter a general autointoxication results, frequently ending in rhinitis. . . . . These attacks last but two or three days. They recur, unless a general cleansing of the gastrointestinal tract, as often as once a month in some cases, is given. . . . . When recurrent rhinitis is seen in dyspeptic children then the urine invariably contains indican. . . . . Not only is the presence of indican an important aid in eliciting the etiological factor in this type of recurring rhinitis, but the presence of indican assumes a very important rôle in determining the proper therapeutical measures to be pursued. From what has just been said we can easily see that if indican exists, associated with stagnant feces (chronic constipation) then the treatment is one of distinct elimination."

From the above it will be seen that the diagnosis is strengthened by the presence of either large or small quantities of indican in the urine, and the stronger the blue reaction of indican the larger the amount present. Hence the point would be to keep up the eliminative treatment until the urine shows less and less, or only the normal trace of indican.

Louis Fischer, M.D.

New York City.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HOSPITALS AND THE COMPENSATION ACT—TROPICAL DISEASES—MUNICIPALITIES AND INFANTILE MORTALITY—ARMY AND NAVY AFFAIRS—MEDICAL OFFICERS OF HEALTH; PRESIDENTIAL ADDRESS—SIR C. DOYLE ON EDALJI'S CASE—PROPOSED BILL FOR THE KING'S HOSPITAL FUND.

London, January 18, 1907.

The friends of hospitals are concerned to know what will be the effect of the extension of the principle of compensation for injuries to whole classes of the population under the new Act. The King's speech at the Prorogation of Parliament put the enlarged scope of compensation as embracing "over six million persons not included under the benefits of preceding Acts." The added burden to our hospitals will be obvious on the slightest thought on the subject. Most of those entitled to compensation are likely to become patients at the hospitals. In minor cases the injured workman can get the best medical and surgical aid at the nearest hospital without cost, and this help tends to reduce to a minimum the period of his incapacitation. In graver injuries he will become an in-patient, and receive in addition free maintenance. But neither he nor the employer need give a penny to the hospital which has benefited both, nor can the amount received for compensation be attached for the expenses incurred by the hospital.

This hospital grievance has been felt more or less acutely ever since the compensation of workmen was rendered compulsory by law, and at intervals it has been made the basis of a claim that the great insurance companies should give pecuniary help to the hospitals, for these institutions enable the companies to reap large profits from the diminution of their risks through medical skill. This applies specially to those companies which do the largest business among the working classes. I do not mean to deny that insurance companies, or some of them, subscribe to hospitals, but I think no one can maintain that they afford adequate financial support considering the benefits they receive.

Another point is giving some concern to hospital managers and others. It seems as if the new Act will render the governing bodies of hospitals responsible for injuries occurring to "all persons in the regular employ" of these authorities. If so, it will be prudent for them to insure such persons, and this will be an additional burden on hospitals and an equal benefit to insurance companies. The outlook for the hospitals is not pleasant.

In the report of the Advisory Committee of the Tropical Diseases Research Fund for last year, the objects are said to be, on the one hand, provision of instruction for medical officers in the Colonies and Protectorates; on the other hand, the furtherance of research work. The first of these ends is said to have been in great measure attained by the provision of lectureships in entomology and parasitology, in helminthology and protozoology, at the Liverpool and London schools. Medical officers appointed to posts in the Crown Colonies or Protectorates are now required to take a three-months' course in one of these schools. It has lately been suggested that the course should be six months. The committee, however, think the expense and delay would be serious, and if any change be made it should be by enabling those medical officers who display exceptional promise to attend a more advanced course on the occasion of their first leave of absence in England. As to research, the Colonial Secretary, on consultation with expert advisers, sent a circular to the Governors of Colonies and Protectorates, suggesting that when they have an adequate staff, and can devote some funds, a sum might be voted for detailing one or more medical officers to study modern scientific research at the best known centers, and possibly afterwards to carry out further researches in the Colony before reverting to ordinary work. The committee express satisfaction that the appointment of a professor of protozoology at the London University has been followed by a similar step at Cambridge. They are considering a proposal to establish a post for investigation and instruction in pathological entomology in connection with the London University and Tropical School. The work done in the Tropical Schools is certainly most satisfactory, and the report seems to recognize this, especially in relation to prophylactic measures suggested as the result of their labors.

At the dinner of the African Society last week, Sir Patrick Manson was the guest of the evening, and in his

speech referred to the progress in the study of tropical diseases in the last eight or ten years, before which time quite half a dozen were lumped together as malaria. Sleeping sickness having crept into the Congo and devastated Uganda, now threatened the upper Nile, and might possibly reach India and tropical Asia, "a calamity to mankind too terrible to contemplate." He considered it of the utmost importance for immediate steps to be taken to guard against that as far as possible, and a hopeful sign was that people were beginning to learn the value of research on these diseases.

Some of the municipalities, including Glasgow, which calls itself the second city of the Empire, will seek powers in the coming session of Parliament to deal more effectually with infantile mortality and the decline in the birth-rate. Among the proposals made is one enacting that the father, or, in his absence someone in attendance on the mother, shall, within forty-eight hours of a birth, give notice to the medical officer of health, and shall be paid by the municipality one shilling for so doing, but fined twenty shillings for neglecting to do so. Public notice is to be given in the papers and by handbills, and medical practitioners and midwives are to be informed by registered letters. This proposal is not as a substitute for ordinary registration, but as an addition thereto. The time allowed for informing the Registrar would be too long for the purpose of this proposal, which is to enable the local authority to do more effectually what has been done in some places by volunteers, viz., to have poor mothers visited at once by ladies in order to assist them, instruct them when necessary on the feeding and management of the infant, and do all they can to secure it the best chance of survival during the first weeks of life—the most dangerous period. In connection with this subject, the London County Council, with its omnivorous propensities, could not be behindhand. It has, in fact, deposited a bill of ninety-two clauses extending its powers in various directions. One clause proposes that any Metropolitan Council may carry on milk depots and provide plants and laboratories for sterilizing or treating milk so as to make it suitable for infants under two years. But our Council does not stop here; it has a scheme for running a sort of restaurant in connection with its several lodging houses, selling "every description of food, solid or liquid," but the latter not intoxicating. This last proposal is being denounnced by many. It is very well, they say, to set up the milk depots, which seem successful, but that is no reason for opening shops to compete with rate-payers by means of rate-payers' money, and there is always a risk of loss, as the Council knows from its speculations in steamboats and other business failures. The electors may have something to say on these matters.

The amalgamation of the Army Medical Advisory Board and the Army Hospital and Sanitary Committee is now completed, and the War Minister announces that the reconstituted "Army Medical Service Advisory Board" is composed of the Director-General and Deputy-Director-General, Army Medical Department, as chairman and vice-chairman. Col. Bruce, F.R.S., is a member as "expert in Tropical Diseases," and Lieut.-Col. Melville, M.B., as "expert in Sanitation." Col. Moncrieff, C.I.E., Assistant Director of Fortifications, also has a seat. The civilian members are Sir F. Treves, Dr. Rose Bradford, Dr. Louis Parkes, Dr. Pembrey, and Sir C. A. Cameron. As a representative of the India office, Surgeon-General Branfoot is appointed, and the secretary is Lieut.-Col. Melville, M.B., the "expert in Sanitation."

The report on the Health of the Navy in 1905 is out this week. Compared with the averages of the last eight years, there are decreases in the ratios of cases, invalidings, and deaths, the death ratios being the lowest since 1856. The ratio for the year was 3.9 per 1,000, a decrease of 1.42 compared with the eight years. The daily average ratio of sickness was 30.31 per 1,000, which is a decrease of 1.04 compared with 1904.

The report of the Army Medical Department is also just published, but the statistics are not comparable with those of the Navy. There is a decrease in the admissions, mortality, and sick rates. The decrease in the admission rate is partly traced to the practice of treating cases in barracks, which under old rules would have been dealt with in hospital. The death rate for the year shows a decrease on the previous year, as well as on the average for decennium 1895-1904. It is also to be observed that the death rate is not that of sickness originating solely in the United Kingdom, but by that contracted while serving abroad, and here I have only referred to the statistics of the Army serving at home.

The new president of the Society of Medical Officers of Health is Dr. D. S. Davies, Medical Officer of Health for Bristol and lecturer on hygiene at the University. In his inaugural address he referred to the conception of disease prevention as a general formula having undergone great modification, and to the early notion on the discovery of pathogenic bacteria that they entered, permeated, and then passed out of the body like an army without stragglers. Had this been true, isolation hospitals would have been efficient. But diphtheria was more or less prevalent in all large towns, the periods of prevalence recurring, not after the manner of measles, at fairly constant and rather short intervals, but at long, uncertain intervals after comparative and often remarkable quiescence. During the first months of an outbreak hospitals might be more useful than later in preventing its spread, of course in conjunction with the treatment which restrained the diffusion of the infection. Having referred to school examinations in infected classes, he said that in Bristol they had not found the difficulty met with in London, of the inaction of some authorities when outbreaks were referred to them. Contrasting smallpox with diphtheria, he said its course and habits made it easier to control, in spite of its high infectivity. A patient either had, or had not smallpox, but he never carried it about in an inert but potentially infective form. The essential conditions of isolation could therefore be fulfilled. The fact which must impress all who studied the progress of the past sixty years was the replacement of broad generalization in regard to the causation and control of communicable disease by intimate study of each disease in detail, and specific adaptation of means to secure success in respect to each. The result was advance. But scientific advance is necessarily slow, and does not satisfy impatient critics. The public might weary of recurring changes in the attitude of scientific medicine towards disease through failing to recognize that every check of reconsidered knowledge is but the backwash of a single wave upon a rising tide.

Sir A. Conan Doyle has taken up the case of Mr. Edalji, who was convicted of maiming cattle at Wyrley, as some of your readers may remember. After three years he was released by order of the Home Secretary, and it may be presumed that this means he is thought to be innocent. All this time the *Medical Press and Circular* has held that he was either a lunatic or the circumstantial evidence, on which alone he was convicted, led to a miscarriage of justice. Sir Conan Doyle reports that Edalji is myopic with astigmatism, and he appeals to ophthalmologists to say whether it would be possible for him to have set forth on a dark night, with neither moon nor stars, to have crossed country for half a mile, climbing fences, finding gaps in hedges, and passing over a broad railway line, to have mutilated a pony which was loose in a large field, to have returned, and done all in thirty-five minutes. Such a task would not be easy with perfect vision. It should be said the man had never worn glasses. The point raised by Sir C. Doyle is interesting. But many people will think it more important that similar outrages took place at the same place while Edalji was in prison.

Among the bills to be brought forward in the coming session, and which have fulfilled the necessary formalities, is one to incorporate King Edward's Hospital Fund and establishing its administration on a permanent basis. H.R.H. the Prince of Wales is nominated President during the pleasure of the Sovereign, and it is further provided that "every succeeding president shall be appointed by and hold office during the pleasure of the Sovereign." The general council of management is to consist of such and so many persons as the President shall from time to time appoint. Thus the King, and with his sanction the Prince, may do just as he pleases, as it may be said he does at present. What then is the need for an Act of Parliament? The people are willing to give their money for King Edward to allot to the hospitals. It therefore seems inadvisable to provoke comment on such an autocratic proposal, or to ask them to endow a future monarch.

Progress of Medical Science.

New York Medical Journal, January 26, 1907.

Empyema of Some of the Accessory Sinuses of the Nose Complicated by an Orbital Abscess.—J. Guttman's patient was a girl of fifteen years, whose initial symptom was toothache followed by a swollen jaw. Later the swelling extended to the eyelid and the author was called to see the girl. Pus was found in the antrum. A radical operation was done on the antrum, the middle turbinal removed in front, and the ethmoidal sinus entered. Pus escaped from the latter cavity. Before the operation there were evidences of an orbital abscess. The latter was opened through the inner canthus and the communication between the orbital abscess cavity and the ethmoidal sinus enlarged by breaking through the lamina papyracea, which had already been partially destroyed by the suppurative

process. The whole process of infection was very short, only forty-eight hours having elapsed from the beginning of the toothache to the swelling of the eyelids. It is not improbable that the primary cause of the onset of the disease is to be found in an inflammation at the root of the tooth, which spread to the maxillary sinus, from there to the ethmoidal sinus, and thence to the orbita' cavity.

Treatment of Chronic Urethral Discharge.—S. L. Gans describes the methods which have commended themselves to his judgment. He uses the term urorrhea to signify the sticky discharge which follows a prolonged or severe attack of urethritis. This is the product of overactive mucous glands or relaxed vessels. All local treatment has a tendency to increase the condition, except in some cases which will respond to the local injection of a few minims of 1-2000 adrenalin solution. General tonics and hygiene are called for, and cold spinal sponges in the morning will soon effect a cure, if the patient can be persuaded to abandon the pernicious habit of constantly "stripping" the penis. The author takes up the details of instrumentation in cases of gleet dependent on a patch or errosion independent of a stricture. Concerning strictures, he says, dilate all strictures except those that are resilient, cartilaginous, irritable, or bleeding, allowing that the technique is correct. Where a stricture reaches a certain point and persistently refuses to dilate further; where there is repeated and excessive bleeding, or urethral fever, then, regardless of the caliber, a cutting operation is advisable. Internal urethrotomy is indicated when the lesion is at or near the meatus, but external urethrotomy or perineal section should always be done when the stricture is at or near the bulb. A departure from this rule is to invite infection, as the bulb represents the base of a U-shaped tube (urethra) with its consequent bad drainage.

The Management of Laparotomy Patients and their Modified After-treatment.—The general conclusions of H. J. Boldt are summarized in the following propositions: No particular preparatory treatment is necessary for patients upon whom it is intended to do an abdominal operation, unless the operation involves the opening of the stomach or the bowels. Stomach lavage is of benefit at the conclusion of the operation. Patients should not be kept unnecessarily under an anesthetic. The application of a tight bandage around the upper part of the thighs, to keep a blood reservoir in the lower extremities, in exsanguinated and very weak patients, is excellent. The same may in exceptional cases be done with one of the upper extremities. These bandages are taken off as soon as the operation has been completed, and thus more blood is thrown into the trunk. The administration of strychnine during and after an operation should be conducted with more care than is usually done. The intravenous infusion of a 0.9 per cent. saline solution should not be too long delayed when the condition of the patient makes it evident that its employment may be of benefit. In instances of large myomata, where the patient has been much exsanguinated by bleeding, it is desirable that the infusion be begun as soon as the patient is fully under an anesthetic, so that by the time the operation has been completed about 1,000 to 1,500 c.c. may have been infused. The application of a very simple dressing over the wound, and the adjustment of a snugly fitting Scultetus bandage made of oxide of zinc plaster; the administration of a dose of morphine if restlessness or pain makes this desirable, the medication then acting as a heart stimulant; the allowing of regular diet and unrestricted mobility within twenty-four hours after the operation, unless specially contraindicated; the getting patients out of bed as soon as possible after an operation; the avoidance of forced catharsis before the first four or five days after an operation unless there is a special indication for it. In instances where resort to vaginal drainage is had, or where it is evident that there will be some secretions intraperitoneally after an operation (purulent cases, and oozing from torn adhesions), the employment of trunk elevation as soon as the patient is put into bed. For this the employment of a bed-lifter such as described, or the placing of high blocks or chairs under the head of the bed, is preferable to back rests.

Journal of the American Medical Association, February 2, 1907.

Diagnosis of Rheumatoid Joint Disease.—The differential diagnosis of chronic arthritis deformans and gout is discussed by J. B. Herrick. He points out that there are many exceptions to the rule that arthritis deformans is always chronic, afebrile, and begins in the smaller joints. In fact, the recurrence or acute exacerbations of supposed chronic rheumatism are frequently arthritis deformans or gout. In the acuter type of arthritis, however, there is not the shifting of the process from one joint to another. The excessive sweating is lacking and cardiac complications are very rare. The acute process is slower to subside than in acute rheumatism. With the passing of time the tendency to deformities begins to be apparent and in the larger sometimes as well as in the smaller joints. Arthritis deformans is more likely to attack the temporomaxillary, sternoclavicular and vertebral joints than rheumatism and there sometimes may be considerable fluid in the joints. Various nervous symptoms, such as burning, weakness, numbness, may be present. The *x*-ray may help the diagnosis. As regards gout, he holds that it is commoner in the United States than is generally supposed and is by no means confined to the "high livers." Beer drinking, lead intoxication, heredity, intemperance in diet, and a sedentary life seem to be the most common causes in this country. The suspicion of gout should be present in all cases of typical rheumatism. Herrick remarks that the typical febrile big-toe attack, or a history of such, excepting tophi, is the most valuable aid to diagnosis. Tophi are usually sought for in the ear. They should be looked for also in the cartilages of the nose and larynx and in the joints. They are often overlooked, he thinks, not only if they are small, but also when they are large and soft. If one watches for the points mentioned, looks out for cardiovascular accompaniments of the disease, studies the uric and phosphorus acid output, and employs the *x*-ray, he can generally make a sure diagnosis. There are, nevertheless, some cases without tophi that are pretty baffling.

The Physiological Action of Alcohol.—W. S. Hall discusses the relation of alcohol to living protoplasm, pointing out that it is a normal product of metabolism of the yeast fungus; that it belongs to the class of substances that are completely metabolized and is passed out because its existence is destructive to the living cell; in short, that it is an excretion toxic to the organism that produces it. An excretion of this type is also toxic to higher organisms, and this is the case with alcohol. Admitting that it is oxidized in the liver and produces heat and that it may lead to decrease in the catabolism of carbonaceous foods, the heat produced is not a normal catabolism, but is simply the result of a protective oxidation, which is insufficient, the toxic action showing in its narcotic effects. The decreased catabolism of carbonaceous and nitrogenous foods following the ingestion of a narcotic is a universal fact depending on the drug effect and giving to the oxidized narcotic no significance as a food. It may be said, he says, without reservation that ethyl alcohol is not a food in the scientific significance of the word.

Alcohol in Its Relation to Degeneracy.—E. S. Talbot holds that alcoholism is often the expression of an existing degenerative taint rather than its causal factor, and that ignoring all but the alcoholic factor in degeneracy is often the source of error. He points out that the effect of alcohol on the individual is much like that of the chronic contagions, but with a greater deteriorating action on the nervous system, and that in its degeneracy-producing action it is aided by poverty and other bad environmental conditions. The routine prescription of alcohol for various ailments is undoubtedly responsible for much inherited degeneracy, and this way an immense amount of harm is done by alcoholic nostrums. The precursor of degeneracy is a neurasthenia induced by alcohol in these cases, and the neurasthenia of the ancestor becomes the neurosis of the descendant.

The X-Rays in Lupus Vulgaris.—H. W. Van Allen has employed the *x*-ray in the treatment of lupus, using for the treatment of the general surface a tube with an air-spark gap of from one to two inches and a distance of the anode of about ten inches, and duration of twenty minutes. Application is made twice a week till the first indication of hyperemia is obtained. This is usually a month or less, and then the treatments are given about once a week for a month longer. After this the patient is told to return in a month, when the surfaces will usually have a healthy pinkish color and nodules can be clearly discerned. The intervening tissue is protected and the nodules are alone treated with a tube of less than an inch air-spark gap, the distance being six inches and the duration twelve minutes. The applications are made three times a week

until reaction takes place, when the cumulative effect is produced, with scabbing and slight ulceration. As soon as the active cautery action begins to subside, he finds the high frequency discharge given off from a low vacuum tube excited by a Tesla coil and resonator, attached to the static machine, to have great value in hastening repair and cicatrization. Other special details are given, but the above are the essentials. He compares the *x*-ray treatment with the Finsen method, pointing out the disadvantages of the latter as regards time required and the need of special personal attention. A table is appended giving the results in fifteen cases, selected on account of the certainty of diagnosis, and giving a percentage of 80 per cent. of cures, with an average duration of treatment of six months and a lapse of time since discharge averaging eighteen months, indicating, he thinks, a permanent cure.

Further Study of the New Infectious Disease.—L. K. Hirschberg defines this disease as an acute infection of sudden onset and unknown bacterial origin, characterized clinically by fever, constipation, absence of blood parasites, agglutination with the usual bacteria, rose spots, enlarged spleen, and tympanites. Its pathology is unknown, as there have been no deaths, and there was no way to ascertain its incubation period from the histories; the onset was always sudden. The duration was from ten to twenty days. Constipation was a conspicuous symptom, and the slowness of the pulse was a striking peculiarity. No epistaxis, chills, or sweating. In no case were there any abdominal tenderness or characteristic eruption; the fever was rapidly ascending, reaching even 105.4° without delirium or nervous symptoms in some cases. Cultures and agglutination tests were failures. The diagnosis is simple; there is little chance to confuse the condition with other diseases; it seems, he says, to be a distinct clinical entity. In all cases thus far reported the patients have recovered without apparent sequelæ, except one, who had, some weeks later, an attack of typical typhoid with Widal reaction. The general management of the disorder, like typhoid, consists in good nursing, attention to diet, and hydrotherapy. The constipation is stubborn and should be closely watched.

The Lancet, January 19, 1907.

Some Limitations of Medical Evidence.—S. B. Atkinson notes that limitations of medical evidence may arise in two directions: First, limitations of medical knowledge, and, second, limitations imposed by the policy of the law. The former restrictions become fewer with the advance of time, research, and medical education. Limitations imposed by rules of law are enlarged much less easily. Modern statutes are notorious for the strictness of their definitions. All definition implies limitations. Limitations of medical knowledge may be relative to the witness concerned or they may be absolute. Thus the diligence, skill, and knowledge of medical men vary from age to age and from person to person. So variable is this range that a man is expected to treat a patient only to the best of his ability and not in the best manner possible by an authority on such matters. Recognizing personal limitations, it is wise for all professionals to be on their guard and to risk no disgrace, when in doubt by a delay in applying to a superior authority at once. Another relative limitation arises when some restriction is imposed upon the medical witness while, wittingly or unwittingly, he is qualifying to give his evidence. Thus when a full physical examination of a person cannot be obtained, or when consent to conduct a post-mortem examination is withheld, there are several matters which otherwise might be made patent, but which will in the circumstances remain obscure. A second variety of limitation owing to the lack of sufficient medical knowledge is not relative to the medical witness personally, but is a general inability to make a positive declaration owing to the uncertainty, insufficiency, or inconclusiveness of the facts available. Even real authorities in this variety of limitation may have to confess that they do not know certain facts, or will, when pressed, offer a very guarded opinion. The last variety of limitation is that imposed by the rules and policy of the law; it arises on account of the essential strictness of the presumptions and of common law or statutory definitions which become more rigid with modern legislation. Thus crimes must be defined in exact terms and the medical facts must, to be of any avail, be capable of being pigeon-holed—counsel will endeavor, as they did in the bad old days of special pleading, to fit the facts into a loophole if possible. Loose popular phraseology has led to occasional surprise in this connection; thus, in a moment of righteous anger we may say of drunkenness: "It's a crime," but as a matter of fact the law books do not recognize it as such, although it may incidentally or consequentially lead to the commission of crime.

Opsonins and Treatment by Bacterial Vaccines.—J. L. Bunch discusses the opsonin theory and in closing his paper refers to two cases, one of lupus of the face and the other of testicular tubercle cured by injections in accordance with this theory. Nothing particularly new is brought out. Concerning the "negative phase," which is such an important factor, the author says that if the right dose has been given the phase will not be too marked or unduly prolonged and will soon be followed by a well-marked positive phase, and in succeeding inoculations the negative phase will be still less. But if too large a dose be given or it be injected when the index is falling, the positive phase will make its appearance very late or not at all. The author purposely lays stress on this point because some of the first injections which he gave more than eighteen months ago were too large, and he has known an injection of 1-500th or 1-400th milligram to be followed by a negative phase which was so marked as to last for weeks. It seems to be generally agreed that only the minimal dose must be employed which will produce a satisfactory response, and this must not be increased until it ceases to produce its effect. The dose, moreover, must not be repeated until the effect of the preceding dose is passing off. If it were possible to produce a summation of positive phases it would be advantageous to give successive doses at short intervals, so as to produce a maximal favorable effect, but such summation is not possible in the case of tubercle. Each inoculation, therefore, produces its effect independently, and it remains to take the greatest advantage possible of the increased elaboration of protective substances which the artificial stimulus has produced. It is obvious that this can only be done by bringing the protective substance as closely as possible into contact with the bacteria which are the cause of the disease. This is simple enough when the bacteria lie within easy access of the blood stream, but when they are flourishing in the tissues in circumstances most favorable to their growth, remote from the blood stream and in contact only with a lymph which is naturally poor in antibacterial substances, the mere increase of the opsonic power of the blood is not sufficient. The opsonin must be brought into direct action with the bacilli in the diseased focus, and this can only be done by increasing the lymph flow through that focus. When it is situated near the surface this may best be brought about by the application of counter irritants, rubefacients, or heat, either dry or moist, in the form of hot-water bottles, hot-water tins, or the commonly used hot boric fomentations. When the focus or disease is in a joint Bier's method of passive congestion is one of the greatest service. The effusion of lymph produced by each of these methods is very considerable, and, in addition, the viscosity and coagulability of the blood can be greatly diminished by the internal administration of decalcifying agents, such as citric acid.

Scepticism in Therapeutics.—A. H. Bampton declares that man is an organized collection of differentiated and highly specialized cells, and that cellular action is governed by physical laws and chemical processes and is profoundly influenced by slight causes, and that nine-tenths of disease is due to the interaction of cells and their products and germs and their products, chemistry being the interpreter of these phenomena. Barely 50 years ago belief in drugs and energetic treatment was the faith and practice of the majority of the profession. It was the rise of the pathological school and the study of morbid anatomy that shook the faith of the succeeding generation of practitioners, viewing only the last stages of disease and seeing structural alteration in the mass. It was thought unreasonable to imagine that any pharmaceutical product could have any influence whatever on such profound structural changes in vital organs. It was argued that the cause of many diseases being unknown, therefore the remedies were irrational. But we do not know but that remedies given early may affect some of these earlier cell alterations, which eventuate in familiar gross pathological changes. So the administration of the remedies is logical and proper. The author remarks that if the mystery of life is to be solved it will be by the experimental examination of the simplest form of life. The discovery that every tissue, every cell, has its own special ferment, is of far-reaching importance

in explaining much that was mysterious in physiology and pathology and accentuates again the importance of chemistry in explaining vital phenomena. When medicine and physiology are written anew, we shall be told the relations that one ferment bears to another. And it is by virtue of this special ferment that each cell is able to select out of the food-stuffs such material as it can transform into energy. The corollary of this is true, that an organ or tissue may fail to perform its function from lack of special fuel to make the ferment. It has been pointed out that during the involution or atrophy of an organ the symptoms which arise may be due to the absorption of the tissue and its passing into the general circulation; absorption of kidney tissue, for example, produces increased arterial tension; liver substance lowers it. Recently, the involution of an enlarged thyroid has been noted to give rise to all the signs attributable to large doses of thyroid extract. Finally, the author expresses the hope that as pharmacology advances, mechanical or empirical prescribing will become less and less frequent. At present we know that drugs produce their effects either by chemical combination or by their physical properties interfering with oxidation processes, as sand puts out a fire, and their ability to penetrate a cell may depend upon the size of the molecules of which they are composed. Instances of chemical combination are shown in the exhibition of alkalies in diabetic coma and sulphonal poisoning, in the action of sulphate of soda in carbolic acid poisoning, and of sodium hyposulphite in combining with prussic acid to form the nonpoisonous sulphocyanide. The most powerful narcotic substances are those which combine a very slight solubility in water with a very high solubility in ether, olive oil, or brain lipoid. The cerebral cells are more sensitive to alterations in their composition than other cells and they contain a much larger percentage of "lipoid matter" or fat, so that these drugs tend to accumulate in them. Here we have an instance of the physical action of remedies.

Some Observations on Fat Necrosis.—J. E. H. Sawyer has noted eight cases of fat necrosis in a two years' service as pathologist to the general hospital at Birmingham, and summarizes their clinical histories and autopsy findings. Three occurred in connection with acute hemorrhagic pancreatitis; two with subacute and one with gangrenous disease of the pancreas; one followed hydrochloric acid poisoning and one occurred in connection with mitral disease. The paper describes the distribution and appearance of the areas of fat necrosis and the changes found in the pancreas. Analysis of the fat particles was made in one instance, and it was found that they consisted of the calcium salts of a mixture of fatty acids superfatted. There was no glycerin, leucin, tyrosin or any other amido acid found. Consequently they could not be due to proteid decomposition. In one instance bacterial cultures were made of the fat necrotic areas, which were found to be sterile. Tissue sections in other cases showed no bacteria. In some cases examination was made of the fluids from the pancreas, and associated peritoneal cysts. In all of these the *Bacillus coli communis* was invariably found, associated with various other organisms. The author believes that in order to produce fat necrosis some other factor must be in evidence than mere obstructions of the pancreatic duct. It would seem that some destruction of pancreatic tissue is also necessary. Then there occurs a leakage of the pancreatic secretion into the surrounding tissues and its fat-splitting ferment produces the necrotic changes.

British Medical Journal, January 19, 1907.

Yellow Fever in the Chimpanzee.—H. W. Thomas reports the following experiment: Fifty-seven stegomyia mosquitos were allowed to feed on two yellow fever patients. On the twenty-first day thereafter the twenty-nine surviving insects were allowed to bite a chimpanzee. In twenty-seven hours the animal's temperature began to rise, and during the succeeding nine days he went through what was regarded as a benign attack of yellow fever from which he recovered. Mosquitos were allowed to feed on him during the infection period, it being the intention to apply them later to a nonimmune individual to complete the cycle of man-chimpanzee-man. Details of the experiment are given in the original paper. [What all this proves or is meant to prove, is, in the abstractor's mind, a bit hazy.]

Papain in Malignant Growths. C. W. Branch relates his personal experience in five cases seen at St. Kitt's West Indies. A papain emulsion was injected under local anesthesia by partial freezing The emulsion was made just as it was about to be used, and contained 1 gr. in every 5 minims of cold distilled water. From 5 to 20 minims of this emulsion were introduced at one time, according to the size of the nodule or tumor; ½ gr. was the smallest dose given. This destroyed a hard nodule about the size of the kernel of an almond. The instrument used in all the injections was a Gee's hypodermic syringe fitted with its largest needle. This was sterilized and a drop of emulsion made to appear at its point before its insertion. If the tumor was large, the needle was made to pause two or three times while some of the emulsion was ejected, so as to establish two or three foci of action along the one line of insertion. Only a slight puncture was made. The operations were repeated at intervals of from two to four weeks. Following the injections a burning sensation came on and a curious feeling as if some small animal was nibbling at the flesh. Nausea was at times present. The tumor softened around the site of puncture in two or three days. There was a slight rise of temperature. In about ten days the tumor began to discharge freely through a small hole a thick, greenish stuff, but the discharge ceased in a week or two, at which time the growth was found noticeably smaller. The general results were favorable, but the cases were too few and too recent to permit of any sweeping conclusions. The author states that it seems possible that papain injections may be admissible in the treatment of some cases of primary cancer and other tumors. He has lately come across a statement that papain has been applied, he supposed externally, to epithelioma; but there was no mention of the result. It is very likely that it was satisfactory. He rubbed the fresh juice of the root of the papaw tree on two small growths, neither of which was malignant. They were both entirely eradicated by a few applications. The little operations were perfectly painless, surpassing in this respect similar ones done with sodium ethylate. Perhaps leprous tubercles might be removed in this way with less pain and disfigurement than by the acid juice of the cashew.

Immediate Microscopical Diagnosis of Tumors During Operation.—This general question is considered by C. B. Lockwood, who commends the following technical method as elaborated by E. H. Shaw. The method may be divided into two parts: (1) The arranging and fixing up of the apparatus required. The microtome must be fixed on a firm table, and all the instruments arranged in a convenient manner. A mental survey of the cutting, mounting, and staining of a section is then made, in order to make sure that everything is present and in its proper place. This ensures that no time will be wasted when once the process is begun. (2) Preparation of the microscopic section. (a) The selected piece of tissue received from the surgeon is placed directly on to the brass disk of an ether-freezing microtome, and is surrounded by gum solution. (b) The tissue and gum are frozen, and sections made by a razor on a carrier. (c) The sections are transferred to a dish of cold water, and, after separating them with a glass rod, a suitable section is lifted out. (d) It is dipped for a moment into pure methylated spirit, and (e) Then placed in another larger dish of cold water; the currents set up by the spirit in the water cause the section to spread out flat. (f) A glass slide is dipped in the water under the section, and the latter is lifted out as the slide is slowly drawn up out of the water again. (g) The water is drained off the slide, and a drop or two of stain (Löffler's methylene blue) is allowed to fall directly onto the section. (h) A thin cover-glass placed on the stain and section after three to five seconds; it is lightly pressed down so as to drive out excess of stain; this is then blotted off, and the specimen is ready for examination under the microscope.

Etiology and Prophylaxis of Dracontiasis.—R. T. Leiper refers to a common ailment in West Africa. He believes that most of the cases are infected from the water of village ponds through an organism which lives on the cyclops. The author began his experiments by selecting cases of the disease in which the vesicle caused by the inoculation by the fully developed parasite was still whole or had recently burst. If a damp compress was bound for a few hours over this area it was found on removal to be smeared with an almost solid mass of embryos The details of his experiments are too elaborate to be reproduced here. Leiper believes that the young must be discharged directly into fresh water soon after the parent worm has succeeded in creating a break in the overlying skin and before the wound has become markedly septic. The embryos must find a cyclops within a

few days. They must, moreover, succeed in entering its body cavity. Five weeks later they will have developed into mature larvæ. These must, thereafter, be taken into the human stomach, and having been set free from its host by the gastric juice, reach the connective tissues by penetrating the gut wall. The life-cycle of the parasite will necessarily be broken: (1) By the death of the embryos, either from sepsis while still within the parent worm, or after their discharge, by saltish water or drying. (2) If cyclops are not present in the water, or if the infected cyclops die or are not taken into the human stomach. (3) If the larvæ, ingested by the final host, are immature or fail to escape from the chitinous sheath of the cyclops. Though they do gain their final habitat, the cycle will still be incomplete if (4) there are not both males and females among the matured adults, and if in their wanderings the females are not impregnated. It will at once be seen from the above summary that the isolation of infected man from healthy cyclops and of infected cyclops from man must be the object of any organized effort to stamp out dracontiasis.

Berliner klinische Wochenschrift, December 31 and January 14, 1907.

The Effect on the Rabbit's Aorta of Intravenous Injections of Suprarenal Extract.—Kaiserling states that after considering the results published by the many authors who have experimented on the etiology of arteriosclerosis by injecting suprarenal extract into rabbits, he was impelled to repeat the observations on his own account. Although most of the workers have reported the production of lesions more or less like those of human aortic atheroma, there are many minor differences in their published statements, but Kaiserling was astonished to find that, in a series of eight rabbits which he treated according to the recognized technique, the results were practically negative as regards the production of aortic lesions, even though in the one case forty-four injections, amounting to 19.3 c.c. of 1-1,000 suprarenin hydrochloride were given in the space of ninety-four days. He, therefore, assumes a skeptical attitude toward the question, and expresses the opinion that much larger series of results must be reported before the etiological relationship between such injections and aortic disease in rabbits can be accepted. He suggests that it is possible that rabbits are more subject to spontaneous calcification of the aorta than is generally supposed, and describes a case of this sort which he himself discovered by accident. It is also possible that questions such as those of diet, of age, and of breed may require consideration, and he recommends that observations be made on large series of animals to determine whether spontaneous aortic disease occurs, whether other methods of raising the blood pressure than the use of adrenalin evoke similar changes, how other animals behave in this respect, etc.

Myasthenia Gravis Pseudoparalytica.—Sitsen says that so far about thirty cases with autopsy of this disease have been reported. The examination of the material has been rather insufficiently described, he says, and he urges that in future cases greater care should be used to record all possible abnormalities. Of the cases tabulated by the author the one type of lesion that appears most prominently (in nine cases) is an involvement, in one way or another, of the lymphatic system, and Sitsen suggests that in new cases an endeavor to trace a relationship between lesions of this system and the disease be made. In a case of his own there were found small recent hemorrhages in the cerebral cortex, lung, and liver, there was hematin-stained lymph in the perivascular lymph spaces of the pons, there were accumulations of leucocytes in the liver, there was slight enlargement of the spleen, there was degeneration of the renal tubules, a colloidal goiter, and an increase in the leucocytes of the blood.

Münchener medizinische Wochenschrift, January 1 and 8, 1907.

Methods for Reinforcing the Knee Jerk.—Rosenbach reviews the various methods, such as Jendrassik's and Krönig's, which are intended to facilitate the testing of the knee jerks by diverting the attention of the patient, and so effecting the desired relaxation of the lower extremities. None of these methods is altogether satisfactory, and Rosenbach has found that the following expedient is applicable to the greatest number of cases. The patient is given either a book of considerable size, or a newspaper, and is told to read aloud. The muscular effort required to hold the volume or paper, and the mental attention involved in the reading, produces the ideal conditions for obtaining the knee jerk, and the method is applicable even to children who are able only to name the letters. In some cases it is difficult for the patient to cross the knees owing to some physical cause, such as obesity, ankylosis, or unconsciousness. For such cases the following expedient, first suggested by Guttmann, is recommended. With the patient lying flat, a towel is passed under the calf of the leg and the limb is raised a little from the bed by this means. A second towel is then passed under the thigh a little above the knee, and the thigh is elevated so that an obtuse angle is formed at the knee and the entire limb is supported by the two towel loops. The patient, if conscious, is directed to allow the leg to rest with all its weight on the supporting slings.

The Early Diagnosis of Pulmonary Tuberculosis.—Arnsperger says that although the value of the *x*-ray as a means of determining the extent of advanced tuberculous lesions and of observing their progress is universally admitted, the method has not yet received the recognition it deserves for the purpose of diagnosing incipient cases. The normal radiographic picture of the chest is much less subject to individual variations than is the picture obtained from the physical signs, and after a little experience has been gained the use of the *x*-ray is found a most trustworthy adjuvant to the customary diagnostic measures. The author discusses the type of tube to be employed, and states that he attaches great importance to the use of a properly constructed diaphragm, which should preferably be of the iris variety. He then describes the evidences of apical infiltration that may be discerned in the earliest stages, and observes that he disagrees with those authors who have found that restricted mobility of the diaphragm on the affected side is a frequently encountered sign in incipient tuberculosis. He recommends the *x*-ray examination especially in selecting cases suitable for sanatorium treatment, and points out other advantages that should cause it to be more universally resorted to, although he admits that during the early stages it should be used only in conjunction with the customary methods of diagnosis. In another article on the same subject by Pforringer and Bunz, the use of the rays is also well spoken of, and, like Arnsperger, these authors state that they do not attach very much importance to lagging of the diaphragm as an early symptom. The chief value of the radiographic method seems to lie in the ability by its means to confirm the correctness of a diagnosis made in other ways.

The Treatment of Gastric and Intestinal Hemorrhages with Fluid Gelatin.—Mann reports excellent results in the treatment of this condition by the internal administration of a preparation of fluid gelatin. The histories of nine cases are briefly abstracted to show the prompt effect of the remedy in such conditions as typhoid fever, gastric carcinoma, ulcer of the stomach, and melena. In none of these cases was any other medication resorted to except the gelatin treatment, yet prompt cessation of the bleeding followed in all except one case, which was an unusually severe typhoid infection. In this instance the autopsy revealed the presence of extremely numerous and deep ulcers, so that it would have been rather too much to expect any remedy to effect a cure. The formula for the gelatin mixture is as follows: 20 g. of gelatin is boiled during six hours with enough water to make 180 c.c. It then remains fluid and 2 g. of citric acid is added. It may be flavored with a little syrup of orange and is given in doses of one or two tablespoonfuls every two hours.

The Presence of Diphtheria Toxin in the Blood of Patients.—Fraenkel says that Uffenheimer has stated that on injecting serum obtained from children suffering from diphtheria into guinea pigs he obtained lesions in the animals, such as edema of the skin over the thorax and abdomen and pronounced hemorrhagic lesions, which appeared to indicate that free toxin was present in the blood of these patients and that therefore this toxin should be neutralized as promptly as possible by the injection of antitoxin. Fraenkel repeated these experiments with blood obtained from twenty-three cases of the disease, but on making a post mortem examination of the animals, which were killed forty-eight hours after the injection, he was unable to discover in any except one alterations that could be ascribed to the introduction of diphtheria toxin. In the case of the one animal that did not give a wholly negative result Fraenkel believes that the reddening and swelling of the abdominal skin produced was an accident due to the possible puncture of a larger blood-vessel by the injection needle. The author does not attempt to explain the discrepancy between his results and those of Uffenheimer, but affirms his conviction that the circulating blood in cases of diphtheria does not contain sufficient toxin to be demonstrable on the injection of small amounts of serum (about 1 c.c.) into guinea pigs.

Book Reviews.

A Syllabus of Materia Medica. Compiled by Warren Coleman, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College; Assistant Visiting Physician to Bellevue Hospital. Third Edition, Revised to Conform to the Eighth Decennial Revision of the U. S. Pharmacopœia. New York: William Wood & Co., 1906.

This edition has been revised to bring it into agreement with the late revision of the U. S. P. At the same time the requirements of the various State Boards of Examiners throughout the country have made it necessary to include all the official preparations. Most of the unofficial drugs have been omitted. The book is a useful compilation and will prove a serviceable companion to any textbook on materia medica.

Retinoscopy (or Shadow Test) in the Determination of Refraction at one Meter Distance, with the Plane Mirror. By James Thorington, A.M., M.D., Author of "Refraction and How to Refract"; Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmologist to the Elwyn and Vineland Training School for Feeble-Minded Children. Fifth Edition, Revised and Enlarged. Fifty-four Illustrations, Ten of Which are Colored. Philadelphia: P. Blakiston's Son & Co., 1906.

This valuable work now appears in its fifth edition, thoroughly revised. The author has carefully described this method of objective examination of the eye in as brief and concise a manner as possible. The source of light and the most favorable surroundings and conditions for the examination are discussed. The various appliances necessary are mentioned and the phenomena observed are elucidated. A sufficiently comprehensive index accompanies the work. The volume, which contains only sixty-seven pages, can be studied with profit by any medical man who wishes to obtain quickly a working knowledge of retinoscopy.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U. S. A. Vol. III, Sixteenth Series, 1906. Philadelphia: J. B. Lippincott Company, 1906.

The third volume of this year's issue of "International Clinics" contains much that is interesting and valuable. Among the most important articles is that of Bradford of Boston on the Hyperemia Treatment of Swollen Joints, an excellent résumé of the subject, illustrated with photographs of cases, apparatus, etc. Saingéry's review of Fournier's recent modifications in the treatment of syphilis is also of especial interest, as it discusses a subject which has come up recently with renewed force, the question as to the proper means of preventing such sequels as locomotor ataxia, etc. The other three articles on medical treatment—by Stevens of Philadelphia on Acute Pleurisy, by Patton of Chicago on Bronchitis, by Katzenbach of New York on Cardiac Dilatation—are full of practical points attractively presented. An article of exceptional interest is that of Pirie of Edinburgh on "Life in the Antarctic from a Medical Point of View," the author having taken part in the Scottish Antarctic Expedition of 1902-1904. The article on Leukemia and Sarcomatosis by Banti of the "University" of Florence (the Institute for the Advancement of Science of Florence is probably meant) discusses the probable nature of the leukemias which, according to the famous Italian clinician, are infectious sarcomatoses, though he has not been able to find their specific agent.

Aids to Obstetrics. By Samuel Nall, B.A., M.B., D.P.H. Cantab., M.R.C.S. England, etc. Sixth Edition New York: William Wood & Co., 1906.

There is probably no subject for which a compend is less needed than obstetrics. Still, if a student feels that he requires a help in preparing for examination he will find this little book of service. In the present edition a few minor alterations and additions have been made, otherwise the book remains unchanged.

L'Autointoxication Intestinale.. Par le Dr. A. Combe, Professeur à l'Université de Lausanne. Paris: J.-B. Baillière et Fils, 1906.

Dr. Combe has written an exceedingly practical, at the same time a highly scientific, book on autointoxication from the intestine. A lecturer on diseases of children, he has taken up within the past few years the study of intestinal diseases in a large number of adults, whom he saw in private practice. In the course of this study he has developed certain original methods of diagnosis and treatment, and has paid much attention to diet. While he acknowledges his indebtedness to Strauss, Albu, von Jaksch, and others, his work has been carried on independently and his results are carefully recorded. The chemistry, bacteriology, etiology, pathology, and diagnosis of intestinal autointoxication form the first part of the book, while the rest is taken up by a detailed study of the treatment of this condition. In the chapters on diagnosis will be found all the modern methods of studying the various autointoxications through the medium of the urine, including several methods original with Amann and Combe himself. Under the heading of Treatment the author presents an admirably written, practical, and systematic study of all the measures that may be useful in combating intestinal autointoxication. Full and explicit directions are given for each therapeutic method, and detailed ménus and dietaries are introduced, making the handling of this class of cases plain sailing for the practitioner. Even the modes of preparing and cooking certain foods are described, and among other articles Combe recommends a number of popular American "breakfast foods." Space will not permit to enter further into details, but we can strongly recommend this latest book on autointoxication to physicians who are progressive enough to study their cases and to apply modern dietetic and hygienic measures in the treatment of disease.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D. Volume VII. Pediatrics. Edited by Isaac A. Abt, M.D., Assistant Professor of Medicine (Pediatric Department), Rush Medical College. Orthopedic Surgery. Edited by John Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School, with the Collaboration of Gilbert L. Bailey, M.D., Instructor of Orthopedic Surgery, College of Physicians and Surgeons. Series 1906. Chicago: The Year Book Publishers, 1906.

The seventh volume of this popular series of year books continues the series of 1906, the previous volumes of which have been noticed in this column. It deals with two closely allied special branches, pediatrics and orthopedics, and is a concise epitome of progress in both these fields. The general method of treating the subject is the same as in the other volume, and the book is replete with useful and practical data and summarizes the work done during the past year. Nothing very startlingly new has developed in the field covered by this volume in the year 1905, but the book records the slow and painstaking trend of research along various lines which may lead to much that will be of value.

Guide Pratique Pour le Choix des Lunettes. Par le Dr. A. Trousseau, Médecin de la Clinique Nationale des Quinze-Vingts; Médecin en Chef de la fondation ophtalmologique Adolphe de Rothschild. Deuxième Édition. Paris: E. R. de Rudeval, 1907.

The author of this little work, which appears in a second edition, endeavors to give the essentials of the knowledge required for the satisfactory fitting of glasses in the simplest way and in the fewest words possible. The information is contained in one hundred 4x6 pages. The indications for the use of glasses in youth, adult life, and old age are first set forth. The quality of frames and lenses required is mentioned. Forms of refractive errors are then described. Subjective and objective methods of examining the eyes are explained. Then follow short chapters on hypermetropia, presbyopia, aphakia, myopia, astigmatism, anisometropia, and the visual requirements for military service. A short index concludes the work.

The Masters of Fate. The Power of the Will. By Sophia P. Shaler. New York: Duffield and Company, 1906.

It is always inspiring to read of the achievements of those who have done great things, but it is doubly so when the doers were handicapped by the greatest of all obstacles—ill health or bodily infirmity. Mrs. Shaler presents in charmingly written narrative more or less extensive accounts of the struggles against physical ills of a very large number of those who have contributed to the world's progress—and it is astonishing to realize how much of it has been due to the toil of those who had every excuse to remain mere onlookers. The list of illustrious invalids is indeed a long one, and includes many names which to the ordinary reader do not connote the idea of chronic illness or disability. The difficulties under which Milton, Heine, Stevenson, Mrs. Browning, Darwin, and many others labored are well known, but Mrs. Shaler reminds us that Alfred the Great, Kant, Pasteur, James Watt, Nelson, and Parkman were but a few of the many, much of whose work was done under conditions that the average mortal would consider prohibitive. A sympathetic interest attaches to the author's desire to place on record the adversities that have beset so many great men, for her husband, the late Prof. Nathaniel S. Shaler, was the victim of a long series of physical burdens that, in view of all that he accomplished in his profession, renders him well worthy of high rank among the "Masters of Fate."

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held January 17, 1907.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

THE evening was devoted to a consideration of "Open-Air Therapeutics."

Open-Air (Roof) Wards on Metropolitan Hospital; Details of Arrangement and Administration; Class of Cases to be Treated.—Dr. W. P. NORTHRUP read this paper and presented illustrations. He said that the open-air treatment had come to stay, and the managers of hospitals, the medical staff, the nursing staff, the professional staff, and staffs in general were now using it systematically. After one year's observation of the out-door treatment at the Presbyterian Hospital the results had been so good that they were now building on the roof a structure which was to cost $15,000, and this, too, in an unendowed hospital. This showed that the systematic open-air treatment of patients was of value and had come to stay. Dr. Northrup then gave the details in part of the structure and management of the hospital. The medical pavilion of the Presbyterian Hospital was demonstrated on the blackboard, and the old solarium was shown, being the dead end of a long shaft that ventilated the cellar. Conditions were now changed. Concrete or cement, four inches in thickness, had been placed on the roof, and over this boards or flooring. The structure that was raised upon this was of steel throughout. He closed his remarks by giving a few rules for the management of this structure on the roof.

Open-Air Treatment of Septicemia in Lying-in Hospitals.—Dr. WILLIAM S. STONE read this paper. During the period Dr. Stone was connected with the New York Lying-in Hospital he had daily opportunity of observing the course of severe puerperal septicemias treated in the glass-covered solarium as compared to the course of the disease in the closed wards, and he gave a few general conclusions based on his own observations. From the patient's point of view it was surprisingly satisfactory. The restlessness and delirium were less frequent and less marked. To the casual and untrained observer the sight of these patients on the roof under their green-lined sunshades might suggest a number of well-to-do convalescents enjoying the advantages of a southern climate, rather than tenement dwellers filled with unnumbered streptococci striving to destroy their host. Like typhoid fever, puerperal septicemia was accompanied by high fever, whether treated in the open air or in the closed ward, but in some cases the duration of the fever seemed to be shortened, and in all cases was better borne as expressed by the pulse and temperature. Pneumonia appeared to be less common and more transitory when it did occur. One of the strongest impressions made upon Dr. Stone was the difference in the general appearance and strength of the patients soon after the disease had run its course. Some cases got well, about which even the most sanguine observer would ordinarily only express a hopeless prognosis. The general conclusion that the reader of the paper drew from these observations was that any lying-in hospital that failed to provide suitable accommodations for the open-air treatment of child-bed fever was lacking in one of the most important means for promoting the comfort and the saving of lives that were intrusted to their care.

Fresh-Air Treatment in Hospital Wards.—Dr. W. GILMAN THOMPSON read this paper. (See page 213).

Open-Air Treatment in Psychiatry.—Dr. WM. MABON, superintendent Manhattan State Hospital, Ward's Island, read this paper. In June, 1901, the late Dr. A. E. Macdonald introduced tent life for the care and treatment of the tuberculous insane at Ward's Island, and three years ago the late Dr. Emmet C. Dent inaugurated the open-air treatment for the acute insane. The camps now used for the acute insane were situated on high, dry ground, which sloped gently toward the waters of Hell Gate, giving a southern exposure and an ocean breeze. The rush of water through Hell Gate and the passing of vessels of navigation through the channel made a scene varied and picturesque, relieving the mind of ennui of many otherwise tedious and wearisome days. The average period of residence in camp life for each acute case was about three months, so that in a year the present capacity accommodated 400 patients, or about 50 per cent. of the entire number of admissions for women. Drawing from the poorer classes of people in the crowded districts of Manhattan Island, stress and strain with physical disability must of necessity enter very largely into the etiology of a large proportion of their acute and recoverable cases. In the 150 cases treated in two of their camps, examination upon entrance showed the hemoglobin to be as high as 95 per cent., as low as 55 per cent.—an average of 70 per cent. In addition to the hemoglobin reduction, the other evidences of marked physical breakdown were constant reduction in weight and evidences of decided disturbances of the gastrointestinal tract. Sleep was insufficient, and delirious states were very frequent. The indications for treatment in these cases were usually clear, and the camp life met the situation better than anything yet tried. He gave abstracts of a few cases to illustrate the results of this method of treatment. Gain in weight was most pronounced. The percentages of the various forms of insanities under treatment in the two camps connected with the reception service were: manic depressive or exhaustive types, 40 per cent.; dementia præcox, where the general health demanded individual attention, 30 per cent., and the alcoholic, hysterical, depressive, and anxiety types, 30 per cent. Among the admissions were a comparatively large number of the exhaustive type occurring during the puerperium, and the majority of them did extremely well under the method of treatment. The most marked improvement under camp treatment occurred in the infective and exhaustive groups, the manic depressive cases, and the undifferentiated depressions. Cases of marked deterioration following overstrain were oftentimes much improved by camp life. After the patients had been under treatment sufficiently long to improve the general health, it was noticed that in the recoverable cases the insanity was either well on toward recovery, or they were in a position to accurately make a prognosis. In the group of cases where exhaustion was the main etiological factor there was no more important restorative than the reestablishment of the proper amount of sleep. Under treatment in the camp, the constant exposure to fresh air and sunlight very frequently brought about a more normal condition. It was emphasized that no drugs were used to relieve the insomnia. The hot pack and the continuous bath, in connection with the open-air treatment, were far more efficacious, trustworthy, and desirable. Aside from the hygienic advantages from these camps, the moral effect upon the insane had considerable influence toward their recovery. The freedom from restraint of bars and locked doors was appreciated to such an extent that vacancies in the camp brought a premium among the more intelligent class of patients, and it was to be wondered at when "scarcely more than a score of years ago our asylums were still prison-like structures, gloomy without and gloomy within. With few exceptions, the walls were guiltless of ornamentation, and the barred windows and locked door, the crib bed, the massive furniture fastened to the floor, and the dozen or more inhuman devices for mechanical restraint, made up a picture well calculated to strike terror into the heart of the newcomer and to fill with despair the unhappy victim of prolonged incarceration." Dr. Mabon closed his paper by stating that the experience of the Manhattan State Hospital for the past five years showed conclusively that the open-air treatment was particularly beneficial for the following classes of the insane: (1) the tuberculous; (2) the feeble and untidy; (3) the retarded

convalescent; (4) the acute insane, in whom the psychosis was associated with anemic blood states, delirium, and loss of sleep.

Dr. Alfred Meyer said that some might be present who attended a meeting held in the Academy a few years ago when the subject of tuberculosis and its treatment was considered; at this meeting Mr. Devine stated that he heard for many months the need of educating the masses regarding the transmission of tuberculosis through the sputa, but, after a certain experience of his in Albany, he thought it would be wise first to educate the medical profession. This same, he thought, could be applied to the subject now before them, fresh air and sunlight. Even in the section rooms, if one of the doctors opened the window, he was liable to be called a fresh-air fiend or crank. Dr. Northrup was doing educational work where it was at present most needed—among the medical profession. Theoretically, all agreed with it; as a rule, it seemed to Dr. Meyer, they had adopted it in theory, but had not applied it in practice. The question of overheating was related to this subject; it seemed to be a national defect to overheat, particularly in the winter time and in places of public amusement. There seemed to be, as well, a prevailing dread of rain and snows. Dr. Meyer believed there was less danger from rain and snow than when the sun was shining, with the dust flying in the eyes, mouth, throat, and perhaps the lungs. If a child had diphtheria he should be covered with blankets and have plenty of fresh air; it was not necessary to have draughts in the room where the child was lying, but plenty of good, fresh air should be allowed the patient. This same could be applied to cases of neurasthenia and convalescence from scarlet fever. A bed-ridden case of sciatica, and other chronic diseases, should be treated by placing near the open window. Surgical diseases should be more frequently treated by this method, and he referred to Dr. Halsted's cases of tuberculous joints treated in the outside air. There was great difficulty experienced in supplying the proper amount of fresh air in hospital wards. A larger number of patients would be benefited by a free change of air compared to those which might possibly be injured. He quoted Mr. Dooley's statement, which was quite apropos of this subject: "If the doctors would open fewer bellies and more windows there might be a fewer number of Christian Scientists." He called attention to the results obtained by the out-door life at Flick's sanatorium at White Haven, Pennsylvania, at the State Sanatorium in the Adirondacks, at Bedford, Massachusetts, and other places. He also called attention to the building of piazzas in country homes and to the utilization of fire escapes in the crowded cities, and how to treat these patients on the roof of their own houses in the fashionable parts of the city.

Dr. David Bovaird, Jr., said that emphasis should be placed on the fact that not only fresh, but cold air was necessary. The value of cold air and fresh air had been brought home to him in dealing with children suffering from diarrheal diseases. Children suffering from severe ileocolitis, if they could be kept alive until the beginning of October, could almost be guaranteed a recovery, and this was due to the change in the temperature of the air during the fall months; this tended to give these children appetites, improved their digestion, and enabled them to gain upon the disease. This autumn he had occasion to note the changes that occurred in the Presbyterian Hospital. At the end of the summer there were many poor, anemic, wasted children as the result of various diarrheal diseases; their lives seemed to hang by a thread. But with the advent of autumn, the appetites became good, digestion improved, they slept better, and the contrast was very marked, all due to the change in the temperature from the summer to the fall months. Fresh air and cold air were agents of great therapeutic value, but should not be used universally. The change in ventilation had done away with so-called hospitalism. A few years ago if a child was kept in the hospital four or five weeks he became flabby and became the subject of hospitalism. To-day the best-looking child, on the other hand, was the one who was the oldest inhabitant of the hospital by reason of the change in matters of ventilation.

Dr. Henry Piffard said that because they required a minimum of sunshine in summer, and a maximum of sunshine in winter, the exposure of solaria for tuberculous and other patients should not be directly East and West, as Dr. Northrup had demonstrated on the board. He referred to the epidemic of typhus fever some years ago, when he was an interne at Bellevue Hospital. The wards became so crowded that the island was utilized for the overflow, and they were there placed in tents. The result was that the mortality was less by one-half than it was in the hospital wards. He also recalled some recent visits made to places near New York City where the patients went "back to Nature," going about perfectly nude, etc.

Dr. Robert J. Wilson said that they had been forced to treat 400 cases of scarlet fever, bronchopneumonia, and measles between April and October in the open air, and these cases did far better than those within the closed wards.

Dr. Louis Livingston Seaman called attention to the fact that all over the tropics, in the Arabic cities, the out-door system of treatment of diseased conditions had been in vogue, even before the days of the Romans. This was also in vogue in the days of Solomon, and in Jerusalem.

Dr John H. Huddleston referred to the epidemic of typhus in 1802 in this city, when so many of the cases were treated on Blackwell's Island. Many were placed in tents, and they all did exceedingly well. None of the orderlies, the nurses, or visiting physicians suffered from the disease. There were some disadvantages and risks attached to this treatment which should not be lost sight of. For instance, it had been his misfortune to see two bad results; two children had been placed on the balcony during convalescent pneumonia, and in both sunstroke developed as a result of the exposure.

Dr. William P. Northrup called attention to what education would do, there being so little spitting in this city to-day compared to what there was when this was first brought up in the New York Academy of Medicine. The education of the laity to him appeared to be easier than the education of the medical profession.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held December 28, 1906.

First Vice-President, Dr. H. Seymour Houghton, in the Chair.

Notes on the Urine in Early Life.—Dr. Henry Dwight Chapin read this paper. He first presented and described a urinal which enabled one to collect the urine of male and female babies. He also showed a photograph of the urinal in position. He said he had hoped to be able to collect the full twenty-four-hour amount of urine in babies for the purpose of studying questions relating to metabolism; he was unable to do this because of slight unavoidable leakage in the apparatus. Heretofore the urine of babies had not been studied in a routine way. Dr. Chapin said that the kidneys functionated before birth, and that the kidneys were relatively of larger size and more lobulated than in older life. The kidneys of infants passed a relatively larger amount of urine than adults, and the quantity and composition changed but little. The consensus of opinion was that during the first few days of extrauterine life the infant excreted from one to two ounces a day, and then the quantity increased in amount, as Dr. Chapin showed with figures. The specific gravity was low, averaging 1003 to 1004 during the first few days because urea and salts were not found; the specific gravity was not apt

to rise to 1.010 until after the tenth year. Uric acid crystals might form concretions in the pelvis of the kidney. In proportion to body weight there was less urea in infant's urine than in the child's urine. Infant's urine was neutral, or faintly acid. The question of the presence of pathological ingredients was interesting. Some stated that traces of albumin and hyaline casts in the urine in the early days of life were without significance. A slight glycosuria in the early months of life had been reported, especially when sugar was given so freely in the food. When there was gastrointestinal irritation indican was found. All knew of the rapid metabolism and the vulnerability of the kidneys. As the result of investigations carried on in the babies' wards of the Post-Graduate Hospital, Dr. Chapin gave the following figures. In a series of 86 cases in which there was some disturbance of the gastrointestinal tract, such as indigestion, fermentative diarrhea, catarrhal inflammations, and marasmus, albumin was found in 75; casts were present in 37; of the 10 deaths in this series 14 had albumin and 10 had both albumin and casts; in 32 cases examined for indican, it was found present in 22. In a series of 75 cases of pulmonary disease, such as severe bronchitis, pleurisy, and pneumonia, albumin was found in 49; casts in 32; of the 17 deaths, 15 had albumin and 10 both albumen and casts; of 23 cases in which an examination was made for indican, it was found to be present in 10. In a series of 45 cases of general illness other than mentioned above, albumin was found in 31. In 11 cases of cerebrospinal meningitis, heavy traces of albumin and casts were noted in 9. In a number of cases of cerebrospinal meningitis with coma, where an effort was made to collect the twenty-four hours urine, there was a slight variance between 1.7 per cent. and 2.7 per cent. Dr. Chapin asked what significance could be placed to this. Did it really mean that there was actual renal disease present? Or was there some irritation of the renal tubules? From the cases reported he rather favored the latter view. He concluded his paper by saying that infant's urine could contain traces of albumin and casts without grave results.

The Significance of Albumin and Casts in the Urine of Children.—Dr. Frederic E. Sondern read this paper. He said that in children, even more so than in adults, the occurrence of albumin in the urine, alone or associated with casts, was not the absolute indication of a nephritis once believed, as we knew that its presence did not necessarily indicate an inflammatory lesion of the kidney. The occurrence of a so-called physiological albuminuria was open to question. On the other hand, not only an inflammation of the renal parenchyma in its broadest sense, but also comparatively slight disturbances in circulation, innervation, or in the quality of blood offered the kidney for the exercise of its function, occasioned the passage of smaller or larger amounts of albumin in the urine, with or without casts. The amount of albumin and the number of casts, while possibly significant at times in estimating the acuteness in a given case of nephritis when comparing repeated examinations, were no guide to the severity of the lesion in general. Modern research had demonstrated that a knowledge of the daily excretion of solids or of urea was not an accurate basis for an opinion on the severity of the renal lesion. It was well to keep in mind the normal urea excretion figures: Children 3 to 6 years, 1 gram per kilo body weight; 8 to 11 years, 0.7 gram per kilo body weight; 13 to 16 years, 0.3-0.5 gram per kilo body weight. The changes in a given case on the same diet should be noted. Kreidl and Mandl concluded that under normal conditions the fetus excreted no urine, but on impairment of the excretory ability of the mother the fetus made efforts to clear the blood by renal action. The class of cases in which the albuminuria, with or without casts, was due to functional and not inflammatory renal disorder formed an interesting subject for consideration. While the excretion of albumin seemed to be directly due to changes in the circulation, in the innervation, or in the composition of the blood offered the kidney for the exercise of its function, without appreciable kidney lesion, it seemed a misnomer to call this physiological albuminuria, as in the majority of the instances there was a fault elsewhere if not in the kidney, and the term functional albuminuria, as distinguished from albuminuria of nephritis, would seem more appropriate. In the differentiation between functional and nephritic albuminuria the mere consideration of albumin and casts was not sufficient. The albuminuria, with or without casts, associated with the different types of anemia without circulatory disturbances and due to the changed condition of the blood only, or to a possible toxin, was often most confusing. The demonstration that acute autointoxication, intestinal toxemia, or faulty metabolism was not only the cause of a distinct train of symptoms and frequently explained otherwise obscure manifestations, but was also the direct instigation of a long-continued functional albuminuria, with or without casts, often difficult to differentiate from a true nephritis, was a recognized fact. When it was recalled with what facility disturbances of the gastrointestinal tract were occasioned in the young, and mindful of the fact that intestinal toxemia was particularly prone to cause complicating disorders in them, the necessity for early diagnosis of this condition was evident. The laboratory aid in the detection of intestinal toxemia was important. Albuminuria implied the presence of serum albumin in the urine, and the occurrence of other albumins should not be called by the same name to avoid confusion.

The Urine in Some of the Specific Infectious Diseases.—Dr. Floyd M. Crandall read this paper. The frequency or severity of kidney complications were not in proportion to the gravity of the infection. Such complications, while rare in chickenpox, German measles, whooping-cough, and mumps, were equally rare in measles and smallpox. The frequency of nephritis in diphtheria and scarlet fever must be due to some particular quality in the toxins, and not to the fact that they were among the more severe of the infectious diseases. In parotitis, pertussis, varicella, and rubella albuminuria was not infrequent in the more severe cases. The *late* occurrence of nephritis was peculiar to all the infectious diseases. His own experience would show that nephritis and albuminuria were less common in German measles than in mumps, whooping-cough, or chickenpox. Albumin and a few hyaline casts might occasionally be found in these diseases, but nephritis was rare. In practice it should not be forgotten, however, that in the more serious cases nephritis of grave type was possible, and might prove a serious complication. In measles nephritis was extremely rare, either as a complication or a sequel. In smallpox it was agreed that albumin might be found in a considerable proportion of the confluent cases, but a true nephritis was exceedingly rare. In diphtheria albumin appeared in the majority of the cases, even the mildest, and it could be said that it always appeared in the severe cases. Diphtheria was sometimes ushered in with complete suppression of urine. The nephritis of diphtheria, unlike that of scarlet fever, was rarely marked by edema or general dropsy, and the classical symptoms of uremia were far less common than in scarlet fever. During the febrile stage of scarlet fever traces of albumin were found in all of the more severe cases, and frequently hyaline casts. This was a febrile albuminuria, due to degenerative nephritis, and subsided as the temperature fell. It was not accompanied by dropsy or by suppression. A true kidney complication might occur during the first stage; in grave, septic cases of scarlet fever the urinary findings of the first few days should not be disregarded. The most characteristic and common kidney lesion in scarlet fever was post-scarlatinal nephritis, which was a true diffuse nephritis, and developed most frequently during the third week, but often occurred in the fourth, and was sometimes delayed until the sixth week. The first symptom to be noticed was edema of the face, which was usually

accompanied by feverishness and restlessness. Dropsy and all the characteristics of acute nephritis rapidly developed. The faintest appearance of albumin after the second week of scarlet fever should be a warning of danger. Daily examination of the urine was very important. He was convinced that there was much truth in the statement that one could do more to prevent the occurrence of nephritis by care and proper diet than by any other means at command. Dr. Crandall always kept scarlet fever patients in bed for twenty days, no matter how mild the attack, and did not sanction leaving the bed for at least a week after the fever had subsided. Patients who had developed nephritis should not only be kept under observation until every symptom had disappeared, but for several years thereafter they should receive special care as regarded diet, clothing, exercise, and the urine should be occasionally examined. In closing, he said that even in the mildest infectious disease the occurrence of septic conditions of any kind should be a warning sign and the kidneys should be watched with special care.

The Urine of Pregnancy.—Dr. J. CLIFTON EDGAR asked, what did the study of the urine of pregnancy offer? Had it any decided value? He believed that such a study had a certain diagnostic value, and that such study pointed the way to the prognosis and treatment. During pregnancy urinalysis enabled one to determine that the urine was nontoxic in character; that a given case of persistent vomiting was toxemic in character; that a patient was in the preeclamptic state of the toxemic or nephritic variety; that a given eclampsia was nephritic or toxemic; and, finally, that after delivery it was possible to forecast the tardy or prompt recovery from a toxemia or nephritic condition. Possibly, moreover, urinalysis enabled one to determine the presence of a complex disturbance or toxemia, namely, where the symptoms of toxemia due to faulty metabolism and those due to nephritis were combined. Nine months ago he presented to the Society a paper on "Clinical Manifestations of the Toxemia of Pregnancy" (see MEDICAL RECORD, Vol. LXIX, page 809), a study of 62 complete urinalyses on 24 patients. To-day he could add to this number, making 86 in all, and his conclusions to-day, while somewhat modified, were practically those of nine months ago. Normal pregnancy urine should not be persistently small in quantity, the urea output should not be persistently low, and it should not contain albumin, casts, or excessive quantities of indican. Moreover, the total nitrogen should be represented by proper proportions of the nitrogen compounds. The presence of serum albumin, especially when accompanied by casts, had a greater significance for him in the pregnant than in the nonpregnant state. The belittling of the importance of albumin and casts in the urine of pregnant women had cost many valuable lives. They had two, possibly threefold significance. (1) They might be the only diagnostic sign of the presence of a defective kidney condition, a chronic or an incipient nephritis, a danger signal that the preeclamptic state was already upon them, or that eclampsia was already imminent. (2) They might be the result of a pregnancy toxemia, as indicated by a faulty urinary excretion of nitrogen; the nephritic condition appeared to be the result, and not the cause of the toxemia. (3) Possibly large quantities of indican in the urine might result in nephritic changes and the appearance of albumin and casts; the nephritic condition might be the result, and not the cause of the intestinal intoxication. His observations did not lead him to attach much importance to the presence of an acid or an intestinal intoxication as causative factors in the production of pernicious vomiting or coma. Another urinary sign of diagnostic value was the relation of the nitrogen of the nitrogenous compounds in the urine to the total nitrogen. The persistent vomiting of pregnancy was with few, if any, exceptions toxemic in character, as shown by faulty urinary excretion of nitrogen. Clinically, he distinguished two varieties of preeclamptic states, one largely toxic in character, the other nephritic. Either of these might result in eclampsia with nothing clinically to distinguish them, except that the nephritic yielded more readily to treatment and gave a better prognosis.

Dr. HARLOW BROOKS confessed that, like many others, he knew very little regarding the urine in children and infants, and then called attention to the discrepancies in the findings of albumin in the urine. One should not make a diagnosis of renal disease simply because of the presence of albumin in the urine; and, too, the total absence of urinary findings should not exclude the presence of serious renal disease. At autopsy many cases had been noted of marked renal disease which gave no evidences during life. He had seen several such cases, even where the urine had been carefully examined day after day, failing to find anything abnormal, yet the patient died from renal disease. While all recognized the enormous value of urinary examinations, and the significance of certain foreign bodies in the urine, one should not forget that the absence of abnormalities in the urine did not exclude the possibility of the presence of serious renal disease.

Dr. HENRY KOPLIK said that it was a fact that general practitioners examined the urine more carefully and more frequently than they did formerly. As his diligence increased, so did his responsibility towards his patients; the public expected more from him than the mere report of the presence or absence of albumin and casts. It was undoubtedly true that grave insults to the kidneys could be recovered from with marvelous celerity. Again, all had met with cases in which a nephritis developed quietly, and still no severe etiological factor could be determined. One cannot always trace the peculiar infectious element in the case. Dr. Crandall had sounded a warning in regard to cases following infectious diseases, especially scarlet fever. Leaving scarlet fever out of the question, there was no doubt but that sometimes a perfectly normal kidney would not respond and recover from repeated insults; apparently slight infectious cases might develop a nephritis later in life. When one found albumin and casts in the urine of children and infants, even in those cases that clear up, every opportunity should be given for observation; one should never forget to examine the urine repeatedly in these cases to learn if they have made a permanent recovery. Dr. Sondern had called attention to a form of albuminuria occurring in childhood, and he was candid enough to say that sometimes it was impossible to say whether there was a nephritis present or not. These were the cases that should never be lost sight of. He did not think they should be too optimistic in this matter, yet they should by no means overestimate importance of the occasional appearance of albumin and casts temporarily appearing in infectious or intestinal intoxications.

Dr. FREDERIC E. SONDERN, discussing Dr. Edgar's paper on the urine in pregnancy, said that the great trouble encountered in doing a complete nitrogen partition test was the immense amount of work required. It was a tremendous undertaking to get the total nitrogen, the urea nitrogen, the ammonia nitrogen, the nitrogen of other types, and the undetermined nitrogen. It was a time-consuming operation, and it was not feasible to make these tests every few days in every case. It might take three men an entire day to make one determination, if it was done properly. Every time there was faulty nitrogen partition, invariably there was a diminution in the urea nitrogen. As a routine matter, it might be well to get the total nitrogen and urea nitrogen; then, if the urea nitrogen was depressed one could go ahead and determine which of the other nitrogens were increased. Of chief importance was to find if the urea nitrogen was depressed comparing this with the total nitrogen. The persistent vomiting and other symptoms he did not believe to be due to excess of ammonia. In diabetes, where the urine often contained from 15 per cent., and often 20 per cent. ammonia nitrogen, there was not a sign or symptom that looked like

nausea or vomiting. Therefore, he believed that the persistent vomiting was not caused by an excess of ammonia, but due to that which accompanied it, the toxins, and it was these which did the damage.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held November 20, 1906.

DR. W. F. CAMPBELL IN THE CHAIR.

The Medical Treatment of Those Gastric Disorders in Which the Help of the Surgeon Is Often Demanded.—Dr. CHARLES G. STOCKTON of Buffalo read this paper. In the treatment of disease one had to avoid the two extremes, a leaden-footed timidity, and a frenzy for exploitation. There were many diseases for which surgical intervention was advised, which were formerly thought amenable solely to medical measures. Had the pendulum swung too far toward the surgical side? In the treatment of gastric disease it had to be remembered that frequently there was much complaint of the stomach when the latter was actually without pathological change. In these cases it was necessary to remove the reflex disturbing cause. Then there were some of the severest disturbances of gastric function, forms of indigestion really due to an excess of gastric activity. One of the diseases for which surgical intervention was frequently advised was achylia gastrica. This had the following peculiarities: The appetite was good, but the stomach had no digestive activity. In mild cases the bowels were constipated, but in severe cases there was a post-prandial diarrhea and the stools were lienteric. The victims of achylia gastrica were like persons on whom gastroenterostomy had been performed. In the treatment of these cases the speaker recommended small amounts of hydrochloric acid for its stimulating effect on the intestine. Such patients might have the appearance of good health, but they lacked resisting power, like those having a gastroenterostomy. If there was narrowing of the pylorus it was better to drain through the duodenum by means of pyloropexy rather than to perform a gastroenterostomy. Some of these cases that had lasted from ten to fifteen years responded to medical treatment. Such was true of pylorospasm and extreme dilatation. One of the speaker's cases, that of ulcer of the pylorus, had occurred eighteen years ago, responded to medical treatment, and had no recurrence. Medical treatment served to put certain patients in good condition for operation; as a result some of these frequently felt so well that no operation was necessary, or the operation was deferred. With peptic ulcer at the pylorus or in the duodenum operation was advised. There was less danger from early operation. In ulcer, diet was to be liquid or pultaceous, meals were to be given frequently; bismuth suspended in mucilage was to be administered, and gastric lavage with water containing resorcin was frequently of value. The speaker had found good results from the administration of ichthyol in two or three-drop doses, and iodoform in doses of one-half to one grain. If hyperchlorhydria was present, occasionally a poultice gave comfort, and sometimes ice water. Of late years the speaker had used the stomach tube. In hemorrhage from the stomach he had good results from the use of the stomach tube; the stomach was irrigated with a weak solution of adrenalin one-half a teaspoonful of the 1 to 1,000 solution added to a glassful of tepid water; the later irrigation was by means of a solution of an equal quality of adrenalin to a quart of water. Recently Ewald had recommended ice water or gelatine water. It was necessary to educate all these patients to be content with long-continued treatment. For perforation it was imperative to operate. For shock due to perforation the drug to be used was morphine. This relieved pain, but at the same time it produced an unwillingness on the part of the patient to permit operation. Hemorrhage was also checked by morphine. Complete rest in bed was necessary. Recurrence of hemorrhage could be caused by introduction of large saline enemata. Careful rectal alimentation was indicated. In exploration for hemorrhage at the pylorus or into the duodenum it was frequently found that the oozing came from a turgescent gastric mucosa. Dilatation of the stomach second to atony did not indicate operation. Frequently the condition was one of ptosis and not of dilatation. The measures of treatment included an improvement of the general health, electricity, hot and cold needle baths, cold affusions, and attention to the psychology of dietetics. The diet had to be selected to suit the individual patient. In cardiospasm temporary benefit was obtained from emptying the sac and passing an electrode through the opening. Perigastritis came from other causes than inflammation of the gall-bladder. The pylorus was often the seat of inflammation, of a true perigastritis. For this it was necessary to employ rest, careful diet, and hydrotherapy. For cancer the medical treatment was only palliative.

Certain Surgical Aspects of Chronic Gastric Diseases.—Dr. JAMES G. MUMFORD of Boston, Mass., read this paper. He said that the facts were well known. He confined his remarks to only a few of the conditions of gastric disease for which surgeons operated. Surgeons had struggled for many years against the opposition of conservatives and their work had already borne fruit. Technique had been perfected. It was surprising how little one knew before the stomach was opened. The profession at large, however, was not impressed with the advantages of surgical interference in gastric disease. He usually shrugged his shoulders when gastroenterostomy was suggested for chronic dyspepsia. There was a multitude of cases of long standing that presented themselves to general practitioners, cases presenting symptoms of pain, nausea, heartburn, etc.; among these cases there were certainly some that would be benefited by surgical interference. It had to be remembered that some cases of distress after eating, with gastric pain, might be due to gallstones. He cited a case that had come under his care seventeen years ago. It was that of a young house physician of a Brooklyn hospital, suffering from neurasthenia, and who experienced heartburn, flatulence, and distress in the epigastrium. He had been advised to go away for a long rest. He went to Boston, but did not improve. Shortly afterward, while in a general hospital, he showed sudden collapse, due to the perforation of a duodenal ulcer, as subsequent operation showed. At that time there was little known about duodenal ulcer, but it was evident that the gastric symptoms of which this patient had complained had been due to the adhesions about the duodenum. The ulcer had set up a localized peritonitis. In such cases drainage of the stomach might obviate a long period of invalidism. Another case cited was that of a lady who had suffered from dyspepsia for twenty years. After partaking of food she had experienced pain and tenderness in the hypchondrium. Hysteria was one of the diagnoses that had been made. An exploratory operation revealed the stomach attached to the transverse colon. There was a deep cicatricial infolding of the anterior wall of the stomach, which was of the characteristic hour-glass type. The deformity was similar to that seen in cases of pyloric obstruction. The patient was supposed to have had a peptic ulcer, of which she had manifested symptoms during pregnancy twenty-one years before. The speaker next alluded to the fact that gastric stasis was more common and more intractable than usually recognized. He cited the case of a lady aged thirty-five who had suffered from pain after eating, nausea, and vomiting. There was no hematemesis and the patient lived solely on peptonized milk. A diagnosis of pyloric stenosis was made. Upon operation nothing abnormal was found, but an anastomosis was made with the intestine to insure free drainage. The operation was followed by a careful supervision of the diet for at least one year. She was cured. The speaker next discussed the question whether

the presence of a pyloric tumor in this class of cases contraindicated operation. This he answered in the negative. Moreover, small tumors of the pylorus could be removed. Of course, in the cases of simple gastric atony the objection could be legitimately urged that the patient was exposed to danger in an exploratory laparotomy. But after many of these operations it was possible to get the patient out of bed as early as the fourth day. Moreover, long-continued dyspepsia due to gastric ulcer was frequently the cause of malignant disease.

Stated Meeting, Held December 18, 1906.

DR. W. F. CAMPBELL IN THE CHAIR.

Compulsory Vaccination and Anti-Vaccination.—Dr. GEORGE DOCK of Ann Arbor, Mich., read this paper. He referred to the fact that there was no branch of preventive medicine that exceeded in importance the subject of vaccination. In 1890 occurred the first case at law against compulsory vaccination, and since that time litigation was on the increase. During the past eight years there was an epidemic of smallpox. The present laws were not satisfactory, inasmuch as they were not backed up by public opinion. Even those who admitted the right of the State to enact sumptuary laws regulating the use of tobacco and alcohol frequently disputed its right to inoculate healthy individuals with the virus of cowpox. The prevailing methods of public vaccination were eminently unsatisfactory. There was no definite record of vaccinations. Individuals sometimes washed the virus out of the wounds. In lieu of the present haphazard methods of public vaccination the speaker recommended an organized scientific procedure, having the support of the people. The anti-vaccinationists were troublesome. Recruited notably from intelligent ranks, their arguments were only too sadly fortified by the untoward results in their own personal experience from the use of impure virus. It was necessary to consider better methods of vaccination. The country was now in the latest stages of the smallpox epidemic that began shortly after the Spanish-American War. There was no guarantee, however, that there might not be a sudden recrudescence in the near future. The decline in the epidemic did not signify that the disease had been stamped out. The view had been advanced that the mild character of the recent epidemic was due to the fact that the public had inherited a certain immunity. This view was not proved. In Cleveland, in 1901, the mortality was 1.6 per cent. In 1902 it jumped to 17 per cent., although there were the same number of cases. The mild type was probably due to causes separable from immunity. It was to be expected that a country that was indifferent to the huge mortality from typhoid and from accidental causes would not be very much concerned about the comparatively few deaths from smallpox. It was a scandalous condition that permitted the lawlessness, the shotguns, the wrecking of houses, that frequently occurred when smallpox broke out in a community. If to this were added the unfit pesthouses, the special physicians, the guards, and other requisites, one could conceive the economic disadvantages of even a few cases of smallpox. Moreover, in the presence of such crises, vaccination was performed hurriedly and inefficiently. The experience of Germany furnished the best argument in favor of organized vaccination. Statistics showed that smallpox was always more prevalent in Austria and Russia than in Germany, which also showed a much lower mortality in proportion to its population than in this country. When smallpox was raging throughout Europe the German Army was but little affected by the disease. This was undoubtedly due to the careful performance and supervision of vaccination. The German law compelled vaccination before the second year, again at twelve years, and again all recruits, that is, all males between eighteen and twenty years of age, had to be revaccinated. In Germany general vaccination had created such a sense of security that some cases of smallpox were treated in houses, and some in general hospitals, even in the same wards with other patients, without the disease spreading beyond the first cases. It was noteworthy that the worst systems of public vaccination prevailed in the countries that spoke Jenner's language. A recent investigation of patients in his wards in Michigan showed that of 2,000 individuals only 60 per cent. had been vaccinated, and of these the majority of scars were unsatisfactory. In 1905 one-third of all his hospital cases had been unsatisfactorily vaccinated. Voluntary vaccination as a public safeguard was not satisfactory. In New York and Chicago the public school regulations certainly insured a thoroughly general vaccination, but this was not true of the greater part of the country. It was difficult to decide whether vaccination should be subject to police regulation or should become a part of Federal law. It might not have been necessary to do away with State rights in order to insure perfect vaccination. This latter necessitated not only the vaccination of all individuals at stated periods, but also their registration in public archives; the supervision of all vaccinated cases so as to determine whether the inoculation was successful or not; the maintenance of public stations for the preparation of aseptic vaccine; and the training of physicians competent to perform and recognize the successful outcome of proper vaccination.

CHICAGO MEDICAL SOCIETY.

AT a meeting held January 16, 1907, Dr. A. P. Ohlmacher of Detroit, Michigan, by invitation, detailed a series of medical and surgical affections treated by artificial autoinoculation according to Wright's theory of opsonins. He reviewed Wright's theory of opsonins and spoke of the beneficial therapeutic effects of proper doses of the "corresponding" bacterial vaccine, or of the autogenous one prepared from the patient's own lesion. But less importance was attached to the theory than to the practice of artificial bacterial inoculation as a therapeutic procedure, which the author regarded as Wright's great gift to medical science and to humanity, for Wright has shown how practically all subacute and chronic diseases caused by the pyogenic bacteria, and luckily, too, the tubercle bacillus, could be improved and brought to recovery by small, infrequent doses of the corresponding bacteria. The author's personal experience in the clinical application of Wright's principles included a series of cases of obstinate, intractable, or even incurable affections in which the results have been most surprising, and, judged by any other therapeutic standard, entirely beyond the ordinary range of possibility. Among staphylococcic affections were included examples of chronic acne, both vulgaris and rosacea, subacute and chronic furunculosis, both localized and generalized, axillary adenitis, palmar abscess, impetigo, and a very remarkable case of so-called "rose psoriasis," but what actually proved to be an extensive staphylococcic dermatosis due to the *Staphylococcus aureus*. In all of these cases progressive improvement and ultimate recovery had been the rule, together with splendid gain in appetite, weight, and spirits. A case of colon bacillus pyuria, cystitis, and pyelonephrosis with profound sepsis had been apparently permanently cured by five injections of the autogenous bacterium. Pneumococcus empyema by intercostal puncture and small drainage was brought to a complete recovery in seven days with two injections of the pneumococcic vaccine. A case of genitourinary tuberculosis with tubercle bacilli and pneumococci in the urinary pus had been progressively improving during the five successive injections of a mixed tuberculin and pneumococcic vaccine. With subacute and chronic gonorrheal infections, Dr. Ohlmacher's work began last August, and he had perfected a vaccine from one of several strains of gonococcus which appeared to be of wide therapeutic usefulness. The results obtained in such conditions as balanoposthitis, epididymitis, proctitis, ophthal-

mia, conjunctivitis, vaginitis, and gleet had been most gratifying and unparalleled by any previously established mode of treatment. This consideration applied also to gonorrheal arthritis (gonorrheal rheumatism), in which the specific and highly potent effect of the gonococcus preparation was demonstrated by the immediate and steady improvement of the local and constitutional conditions. In these gonorrheal infections the same gain in tone, weight, and spirits as evidenced in staphylococcic diseases was marked. The address concluded with the statement that in these artificial bacterial inoculations we possessed therapeutic agents of a specificity and potency exceeding anything heretofore employed in the treatment of disease, except possibly the antitoxin of diphtheria.

College of Physicians of Philadelphia: Section on General Medicine.

At a stated meeting held December 10 Dr. Joseph Sailer presented a patient with "Probable Congenital Disease of the Heart." The condition occurred in a girl, fourteen years old, in whom it was known that some disease of the heart had existed from the age of six years. On palpation a marked thrill could be felt in the pulmonic area, while on auscultation a loud, rumbling murmur, continuous throughout both systole and diastole, was audible and transmitted into the carotid arteries. There was neither cyanosis nor clubbing of the finger ends. The lesion was thought to be a persistent ductus arteriosus or pulmonary obstruction. Dr. David Riesman read a paper entitled "Preicteric Itching," and he reported three illustrative cases. The condition was first described by the great Irish physician, Graves. In some instances it disappears when jaundice sets in, so that it must be concluded that it is not due to biliary pigment. It has been observed in cases of benign and malignant disease alike. Dr. Riesman also presented a communication entitled "The Development of Cardiac Murmurs During Attacks of Biliary Colic." He reported several cases in which heart murmurs developed during attacks of biliary colic in persons previously known to be free from such murmurs and disappearing with the termination of the attack. The manifestation must be considered as due to different causes, in some instances to anemia or other change in the blood related to the attendant jaundice, in other instances to dilatation of the heart. Dr. David L. Edsall presented a communication entitled "Further Observations on Metabolism in Purpura." He was able to confirm observations previously recorded to the effect that loss in nitrogen occurs in cases of hemorrhagic purpura, indicating that the affection must be attributed to a toxic state and the resulting blood destruction. Dr. A. P. Francine read a paper entitled "A Review of the Therapeutic Use of Koch's Tuberculin." Reports in the literature would seem to show that, employed cautiously and intelligently in properly selected cases, treatment of tuberculosis with tuberculin yields more favorable results than other methods of treatment. The patients should be free from fever and the doses used should be almost infinitesimal. Reaction should, so far as possible, be avoided, and, of course, all recognized hygienic and nutritive measures should be observed. Tuberculin has further great diagnostic value. Dr. Robert N. Willson read a paper entitled "The Pathogenesis and Treatment of Neurasthenia in the Young." He maintained that neurasthenia is due to impairment of tissue nutrition, and that any mode of treatment, to be successful, must be aimed at improvement in this direction. Often profound inertia on the part of the patient has to be overcome and the utmost personal effort on the part of the physician will be required. No case need be considered helpless, but the treatment must be determined for the individual case, and it should be carried on with unremitting persistence.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 2, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	354	206
Diphtheria	315	46
Measles	138	5
Scarlet Fever	325	15
Smallpox	1	1
Varicella	122	—
Typhoid Fever	35	9
Whooping Cough	75	13
Cerebrospinal Meningitis	20	17
Malarial Fever	....	....
Totals	1385	312

Appendicitis in Nurslings.—Kirmisson and Guimbellot have been able to collect twenty-three cases of this nature. Nine of these were observed in the first year, fourteen in the second year. There were sixteen deaths and seven recoveries. The patients who recovered were all over eighteen months old. Surgical intervention was practised in ten cases, once on a patient in the first year and nine times on patients in the second year with seven recoveries and three deaths. The writers believe that appendicitis in the first years of life is not as rare as is generally thought. Its evolution is rapid, its prognosis extremely grave. Diagnosis is difficult. It would be of interest to have all the facts relating to these cases, which have been observed, collected and published.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 4, 1906.

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
California, Quincy	Dec. 1–15	10	..
Florida, Marion County	Jan. 19–26	6	..
Polk County	Jan 19–26	10	.
Georgia, Augusta	Jan. 15–22	11	.
Illinois, Chicago	Jan. 19–26	1	..
Galesburg	Jan. 19–26	11	.
Peoria	Jan. 19–26	6	.
Indiana, Indianapolis	Jan. 13–20	12	.
South Bend	Jan. 19–26	10	.
Terre Haute	Jan. 19–26	1	..
Louisiana, New Orleans	Jan. 19–26	2	Imported
Missouri, St. Joseph	Jan. 12–19	4	.
New York, New York	Jan. 19–26	2	.
Ohio, Cincinnati	Jan. 18–25	1	.
Virginia, Hanover County	Jan. 31	35	.

SMALLPOX—FOREIGN.

Argentina, Buenos Ayres	Dec. 1–22	5	1
Brazil, Pernambuco	Dec. 1–15		35
Rio de Janeiro	Dec. 23–30	1	..
Nova Scotia, Colchester County	Jan. 19	.	Present
Cumberland County	Jan. 19	.	Present
Pictou County	Jan. 19		Present
China, Shanghai	Dec. 19–16		Present
France, Marseille	Dec. 1–31	.	88
Paris	Dec. 29–Jan. 5	8	..
Italy, General	Jan. 3–10	1	.
Malta	Dec 15–22	1	
Mexico, Tamaulipas, State of (On line of Mexican Central R. R.	Jan. 18		Epidemic
Russia, Moscow	Dec. 15–20	3	1
Spain, Barcelona	Jan. 1–10		7
Cadiz	Dec. 1–31		8

YELLOW FEVER

Brazil, Rio de Janeiro	Dec. 23–30	1	1

CHOLERA

India, Bombay	Dec. 25–Jan 1		8
Madras Presidency	Nov 1–30	10,700	6,305
	Dec 1–15	5,256	3,203
Rangoon	Dec 15–22	..	39

PLAGUE.

Arabia, Diedlah	Jan. 9	1	..
Brazil, Bahia	Dec. 8–29	13	5
Rio de Janeiro	Dec. 22–30	12	8
Egypt, Alexandria	Jan. 4	.	1
Ishmailia	Jan. 5	1	.
Keneh	Jan. 9	1	1
Gibraltar	Dec. 16–Jan. 13	7	..
India, Bombay	Dec. 25–Jan. 1	..	13
Rangoon	Dec. 15–22	..	15
Japan, Formosa	Nov 1–30	100	84
Peru, Catacaos	Dec 1	10	7
Mollendo	Dec. 1	7	..
Pacasmayo	Dec. 1	4	2
Paita	Dec. 1	2	1
Truxillo	Dec 1.	48	2

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Original Articles.

SUPERNUMERARY CERVICAL RIBS AND THEIR EFFECTS ON THE BRACHIAL PLEXUS AND SUBCLAVIAN ARTERY.*

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CERVICAL ribs are not particularly uncommon and have frequently been demonstrated at autopsy and in the dissecting room,[1] but the clinical symptoms which may be caused by the pressure of supernumerary cervical ribs on the cervical plexus have been given little attention. Thomas and Cushing,[2] in 1903, reported one case and Thorburn,[3] in 1904, published a series of four cases with their clinical histories in which there were definite signs of pressure on the plexus. In Thomas's case, and in two of Thorburn's, the symptoms were particularly well marked, consisting essentially in paralysis of the intrinsic muscles of the hand with pain and some sensory loss about the region of distribution of the first dorsal root. In these three cases the offending rib was removed with relief of the pain, and in Thorburn's case reestablishment of the functions of the paralyzed muscles.

Previous to this Tillman[5] reported the case of a woman, aged forty-four, with a cervical rib on the left side, causing atrophy of the muscles of the ball of the thumb and pains from the neck down the arm, but in this case no loss of sensibility was found. The case was operated on by Bardeleben. Two other cases were operated on in von Bergmann's[4] and three others in Hoffa's clinic, where there was said to be pressure on the plexus but the only symptom reported was pain in the arm.

These are the only reported cases that I have found in a fairly thorough revision of the literature. More or less complete occlusion of the subclavian artery, on the other hand, seems to be more common. Tillman in his revision of the literature collected twenty-six cases, in thirteen of which the presence of the rib caused symptoms; in the other thirteen it was found accidentally. In ten of these cases the symptoms disappeared under symptomatic treatment; three only were operated on (Coate,[7] Fischer,[8] Planet[7]) and all successfully. Babcock[9] of Philadelphia and Murphy[10] of Chicago have also recently published cases in which operation was successful in removing the symptoms.

The following cases will, I think, be of general interest. It is interesting to note also that these patients are brother and sister:

CASE I.—Miss B., aged twenty-seven, nurse, was seen for Dr. Martin on the 24th of April, 1906. *Complaints:* Pain and cramp in the right hand and arm; wasting of the thumb muscles, and general weakness of the right hand.

Present Illness: Started five or six years ago with the sensation of pins and needles in the ulnar side of the right forearm and hand, especially when she was exposed to cold. At the same time she often had cramps in the little and ring fingers of the same hand with flexion of these fingers. Weakness and cramps in the thumb muscles when grasping objects was next noticed, always worse in very cold or very hot weather. About three years ago the definite wasting in the small thumb muscles was first noticed, and at this time she complained of frequent cramps in the hand with flexion of the fingers and wrist. The right hand is always colder than the left, but no change of color has been noticed. These symptoms have been gradually progressive till the present time.

Personal History: Patient has always led a rather active out-of-door life and enjoyed very good health.

FIG. 1.—Atrophy of small muscles of thumb.

Family History: Nothing similar has been observed in her parents. Her brother, however, has somewhat similar complaints. (See Case II.)

The patient's intelligence and training enabled her to describe her symptoms clearly and to mark out with precision the areas of subjective pain. The pupils were equal and reacted to light and accommodation, and the other cranial nerves normal.

In the right arm there was some wasting of the forearm muscles, chiefly on the flexor and ulnar surfaces, there being a difference of half an inch in the circumference three and a half inches above the radial condyles. The abductor brevis pollicis was entirely atrophied. The adductor pollicis and abductor indices were also much wasted. There was no definite weakness in flexion of the right wrist, extension was also about equal right and left. Flexion of fingers slightly weak. There was very definite weakness in all the movements of the thumb and some relative weakness in separating the fingers and

*Read before Montreal Medico-Chirurgical Society, November 16, 1906.

in extending the distal phalanges when the proximal ones were semiflexed, and definite weakness of the grasp of the right hand as compared with the left. Some fibrillary twitchings were noted in the small muscles of the thumb and in the hypothenar muscles, also in the flexor muscles of the forearm. (See Fig. 1.)

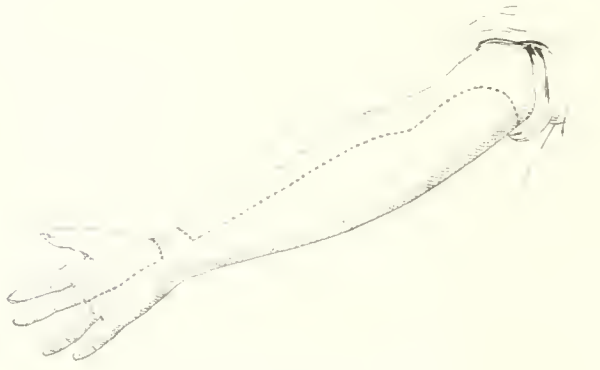

Fig. 2.—Subjective distribution of pain.

Sensory System: The patient complained of sharp aching pain, like toothache, coming on in attacks and radiating down the inside of the arm, quite localized, so that she was able to mark out for me the areas to which it was confined. (See Figs. 2 and 3.) Objectively there was an area of complete anesthesia on the ulnar border of the forearm between the elbow and wrist in the areas supplied by the first dorsal root. (See Figs. 4 and 5.) The reflexes were all normal. There was no spinal curvature. The radial pulse was equal on the two sides and no diminution of the pulse was noted on deep inspiration. The right hand was cooler than the left, but there were no trophic disturbances. The abductor pollicis did not react to either faradic or galvanic stimulation. The flexor brevis and apponens pollicis showed relative diminution in their reactions to faradism.

Skiagraphs showed bilateral supernumerary cervical ribs. (See Fig. 6.)

During the two months before an operation could with convenience be undertaken there was definite though slight increase in the atrophy of the thumb muscles.

The operation for the removal of the rib, performed by Dr. Garrow, has proved so far very successful in that the patient has had no return of the neuralgic pain or of the cramps in the arm. Immediately following the operation, owing to the unavoidable contusion of the nerves, there was increased paralysis of the small muscles of the hand and of the flexor profundus digitorum and flexor carpi ulnaris, with later some increased atrophy of these. There was also an increase in the area of anesthesia and analgesia over the ulnar border of the hand, the little, and the ulnar surfaces of ring fingers. This has, however, all cleared up, and at present, four and a half months after operation, the condition of the muscles is about what it was previous to operation, and the area of loss of sensibility is about one-third smaller than it was at that time. The patient continues perfectly free from the pain and cramps.

Fig. 3.—Subjective distribution of pain.

Case II.—Brother of the preceding patient, clerk, aged thirty-five. *Complaints:* Inability to use the right arm properly; paresthesiæ in hand and forearm.

Present Illness: Nine years ago he had some difficulty in writing; he did not seem able to control his pen properly. Thinking he had gotten into careless habits of writing he tried taking lessons, but in spite of this he did not improve. After writing for some time his hand and forearm felt thick, swollen, and heavy, and he had sensations of pins and needles in the ball of the thumb. It was considered to be writer's cramp and eventually he had to learn to write with his left hand, and since has used either hand, but preferably the left, as he cannot yet control his pen with the right hand for any length of time. Otherwise he has always enjoyed good health.

Fig. 4.—Area of analgesia and anesthesia.

Present Condition: Patient is an intelligent though somewhat neurotic man. The pupils were equal and active to light and accommodation, the other cranial nerves were normal. Apart from some flattening of the thenar eminence in the right hand there was no muscular atrophy. There was some slight relative weakness in abduction, flexion, and opposition of the right thumb as compared with the left. There was no definite weakness in separating the fingers of the right hand.

There was no objective disturbance of sensibility; electrical reactions were all normal; reflexes all normal, and no spinal curvature. Skiagraph shows bilateral supernumerary cervical ribs. (See Fig. 7.)

Case III.—B. P., female, aged twenty-four, sewing girl, came to the medical outdoor department November 8, 1906. *Complaints:* Pain in right shoulder and down inside of arm to hand; cramps of fingers and wrist with flexion. Wasting of small thumb muscles.

Present Illness came on with pain in the shoulder four years ago after a fall in which the patient struck her shoulder. She has had this pain off and on ever since, and lately it has been getting more severe and frequent. It is brought on by allowing her arm to hang by her side or when she wears a heavy overcoat in winter. The pain is not only in the shoulder, but radiates down the inside of the arm to the wrist. She prefers to hold her arm flexed at the elbow in walking, as this prevents the pain.

Fig. 5.—Area of analgesia and anesthesia.

About four months ago she noticed the wasting and weakness of the small muscles of the thumb and first finger of the right hand, and pins and needles sensation in the ball of the thumb, and about three months ago she first had cramps in the hand, with flexion of the fingers and wrist.

Personal History. Otherwise healthy. *Family History:* Negative.

Present Condition: Cranial nerves negative. Pupils equal and react to light and accommodation. *Muscular System:* Wasting of abductor pollicis and indicis of right hand and in the hypothenar muscles, weakness in abduction, and opposition of thumb

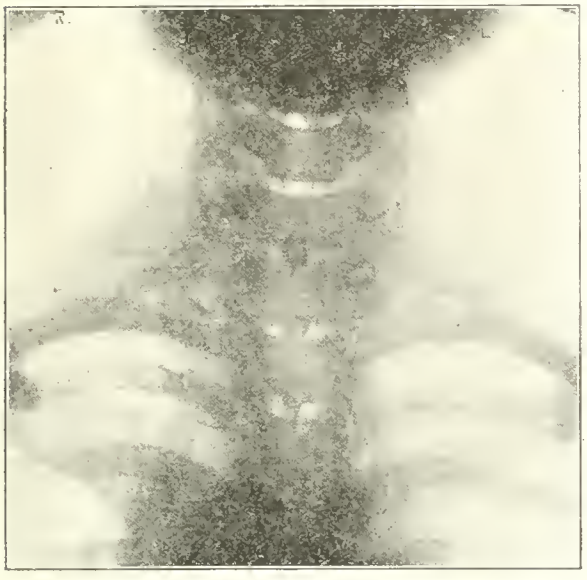

Fig. 6.—Bilateral cervical ribs.

and in the separation of the fingers, especially the first two. *Sensory System:* Apart from the subjective complaints is negative; there is no area of anesthesia nor analgesia to be found anywhere. The reflexes are normal in all extremities, and there is no curvature of the spine.

Her neck is long, with sloping shoulders forming what has been described as the champagne bottle type. There is no difficulty in palpating the ends of the cervical ribs, which are shown by skiagraph Fig. 8.

In Case I the atrophy of the small muscles of the thumb and the weakness of the intrinsic muscles of the hand pointed to involvement of the first dorsal segment, as did also the area of anesthesia and analgesia and the neuralgic pains. The pupils being equal and unaffected placed the lesion distal to the communicating branch of the sympathetic ganglion. Also the fact that her brother was similarly affected rendered it probable that the lesion was not in the cord, but due to some anomaly in the neighborhood of the roots and led to a skiagraph being taken, as in neither case I nor II could we be sure of the presence of the rib by palpation.

Cervical ribs are doubtless a species of atavism and are sometimes found in children of parents who show some stigmata of degeneration. Israel, in his discussion of Borchardt's[12] paper, spoke of having operated on a patient whose sister also had cervical ribs with symptoms, so that heredity seems to be a factor. Doubtless they are often present without causing any symptoms whatever. According to Riesman[11] cervical ribs are more commonly present on the left side, but certainly the symptoms are most often seen in the right arm. They are more frequently met with in women than in men, and first make their appearance between the ages of nineteen and thirty.

It would seem probable then that the more frequent use of the right arm must in some way have an etiological bearing, and the fact that the epiphysis of the head and that of the tubercle of the rib only make their appearance between the sixteenth and twentieth years, and are not united to the rest of the bone until about the twenty-fifth year, would suggest a possible cause of the late development of the symptoms. Certainly in neither of these cases was there any history of previous illness or poor health or loss of weight to bear out Tillman in his contention that this is always a causative factor. In fact the brother has only recently recovered from typhoid fever, and in spite of some loss of weight, etc., shows no increase in his symptoms.

The theory of muscular use and development as a causative factor seems to be borne out in his case. His occupation as clerk involved a great deal of writing, and as soon as he gave up using his right hand altogether and began to use the left there was a diminution in the symptoms.

In our Case I the roots of the brachial plexus were certainly not stretched over the rib as Thorburn suggests as the explanation of his cases. It seems more plausible to suppose that the first dorsal root was pressed on by either the distal end of the rib or its tendinous attachment immediately proximal to its junction with the eighth cervical root, where they unite to form the inner cord of the plexus.

In cases where there is only a slight degree of pressure one may simply find complaints of neuralgic pain radiating down the inner side of the arm, with perhaps some awkwardness in coordinating finer movements of the thumb. Where the pressure is greater it is exerted chiefly on the first dorsal root, causing definite paralysis, with only an irritative condition of the eighth cervical root as shown by the paresthesiæ in the ulnar border of the hand and in the spasmodic cramps of the flexors of the fingers. It seems probable that the center for the flexor profundus digitorum is at the lowest part of the eighth cervical segment, and the cells which subserve flexion of the fourth and fifth fingers have the lowest representation in this center. It is interesting to note that after the operation the flexor carpi

Fig. 7.—Bilateral cervical ribs.

ulnaris was temporarily paralyzed and the area of analgesia extended to what is usually looked upon as the distribution of the sensory fibers of the eighth cervical segment; this, however, only lasted a week or ten days.

The suggestion offered by Case II. of a cervical rib as an organic basis for writer's cramp may be

one of some importance. It certainly has not yet been advanced as an etiological factor of this malady in any of the modern textbooks.

Case IV.—My fourth case differs from the three previous ones. Here, with a certain deformity of the ribs, which may be seen in the skiagram, there was more or less complete occlusion of the subclavian artery. This patient was presented to the society in January, 1906, by Dr. Archibald for diagnosis, he having made the povisional diagnosis of endarteritis obliterans.

M. T., female, aged thirty-one, came to the Royal Victoria Hospital complaining of "burns" on the fingers of the right hand, shooting pains in the right hand and fingers, and numbness in the left index fingers.

Fig. 8.—Cervical ribs.

Present illness commenced about nine years ago with numbness in the fingers of the right hand, accompanied by alternating cyanosis and stone whiteness. For the past year this has increased in severity, and she was advised to put her hand in a solution of carbolic acid, one half ounce to the pint. She admits that she did not stir this up at all, and after using it her fingers became very red, painful, and swollen, and have since become gangrenous. Four years previous to this she came to the hospital with what was probably a cystitis due to gonococcus infection, but did not stay. Otherwise she has always been fairly healthy, though delicate. Has been married nine years.

Her family history is negative.

On admission she was found to be a thin, anemic woman with sloping shoulders. Above the clavicles there was a definite mass on either side of the neck, over which the subclavian arteries could be seen pulsating. The right hand was swollen, tender, and reddened. The superficial layers of the skin were coming off in areas. The tips of the third and fourth fingers were gangrenous. The viscera were normal. Apart from the fact that she was stupid and neurotic the nervous system was normal. Skiagraphs showed what was thought to be undeveloped first thoracic ribs. (Fig. 9.)

In spite of treatment the fingers did not heal. She complained of considerable pain in the fingers preventing her sleeping and also of cold feet, although at no time did her feet become cyanosed. A small area of gangrene now developed on the tip of the index finger of the right hand, and the other fingers and the hand were cyanosed. The index, middle, and ring fingers of the left hand also occasionally became quite cyanosed. The right radial pulse became almost imperceptible and the right brachial was smaller than the left.

On account of the progressive gangrene, in spite of all treatment, it became necessary to amputate first the fingers and later the arm at the level of the insertion of the deltoid. Dr. Klotz found the brachial and radial arteries in the amputated part almost completely obliterated. The vessel showed a proliferation of the inner wall of the vessels and an organized thrombus with formation of canaliculi.

It was at this stage that Dr. Archibald presented the case to the society. In the discussion which fol-

lowed he considered the question of the occlusion of the artery being due to its abnormal course.

On his departure for England in May last, knowing that I was interested in the case, he very kindly asked me to take charge of her. At this time there was very evident involvement of the left hand with alternating blueness and stone-whiteness of the fingers and a small area of commencing gangrene of the ring finger. It was found that when the shoulder was elevated, as by putting the left hand on the right shoulder, the pain in the hand was alleviated. She stated that she always slept with her arm raised under her head, thus elevating the shoulder. Although operation for the removal of the rib was urged the patient would not hear of it. Domestic worries being added to her trouble, she committed suicide on July 7 by taking Paris green. She was taken to the Montreal General Hospital and died next day.

By the kindness of Dr. R. P. Campbell, Superintendent, and Dr. Duval, Pathologist, I was given permission to dissect out the neck on both sides. An autopsy had already been performed by Dr. White, but nothing bearing on the point in question here was found. Vertical incisions were made on both sides of the neck and the vessels and brachial plexus dissected out carefully so as not to disturb their relation to the hard parts more than necessary. The clavicles were then sawed through and the vessels and nerves followed into the axillæ and arms.

On the right side (*i.e.* the side of amputation) the subclavian artery proximal to the thyroid axis was large and soft, but distal to this it was contracted and almost cord-like for a distance of about two and a half inches. In the axilla it widened out again and became more normal looking. In the left side above and below the clavicle the vessel was apparently about normal in size, but underneath the clavicle it was enlarged and on palpation firm and evidently partially thrombosed.

On the left side the upper edge of the vein only could be seen above the level of the clavicle, and below the clavicle there was a huge enlargement and anastomosis of veins over the first space. On both sides the artery extended much higher into the neck than normal. In the second part of its course it lay posteriorly on the scalenus medius, which was attached to this anomalous rib and the second rib, and above the level of this upper rib. It then turned sharply around the scalenus anticus to descend below the clavicle.

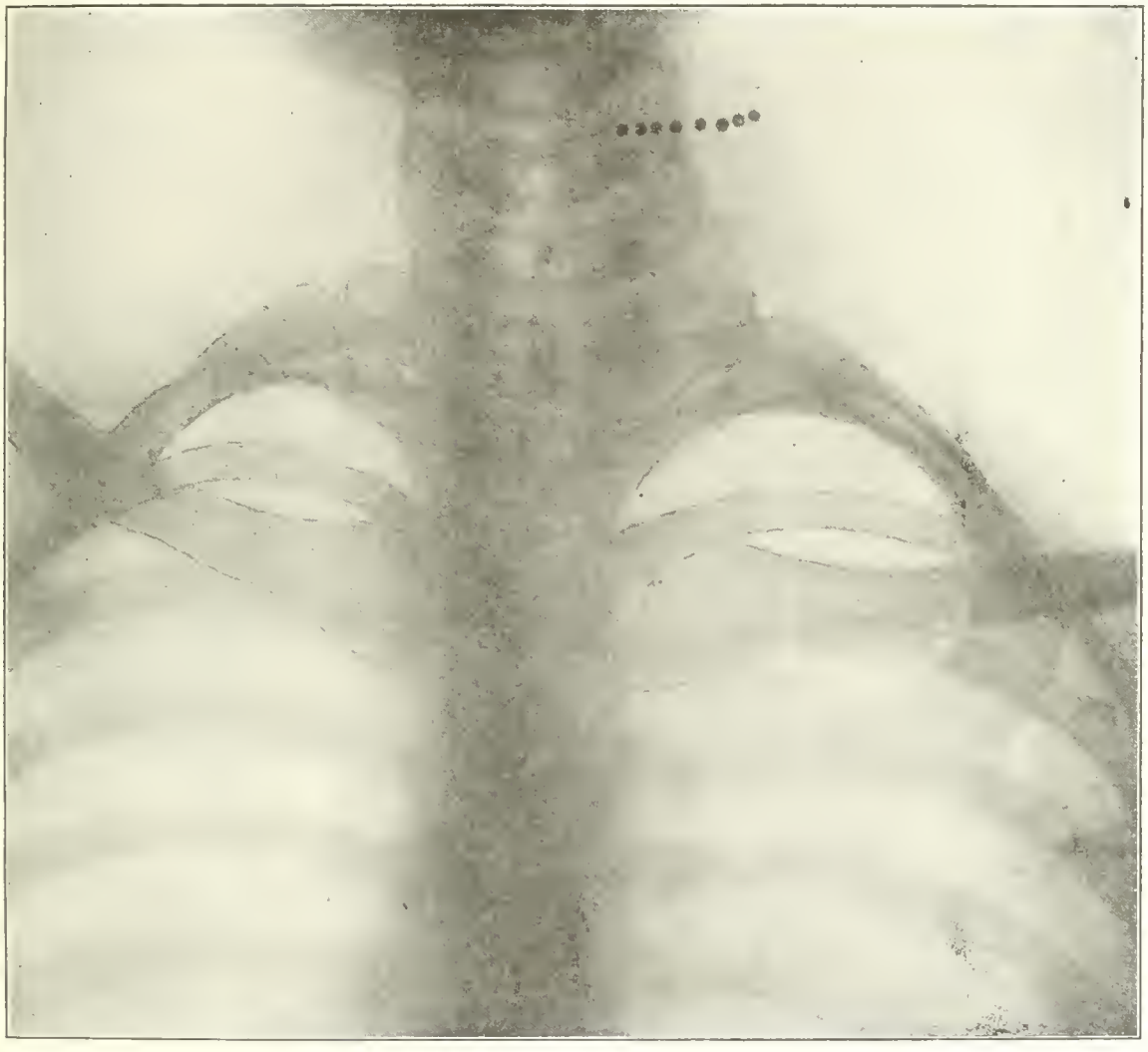

Fig. 9.—Skiagram apparently showing undeveloped cervical ribs.

The first dorsal nerve root ran upward over the ventral surface of the second rib present to join the eighth cervical root which, emerging from between the two ribs just before their junction, formed with it the inner cord of the brachial plexus.

On section, the right subclavian at the level of the thyroid axis showed obliterating endarteritis with an organized thrombus completely blocking the lumen save for a few canaliculi which had formed in the thrombus. The vessel just above the level of the clavicle showed the same condition.

In the axilla the vessel wall showed merely a slight thickening and proliferation of the inner coat. On the left side, at the level of the thyroid axis, the vessel wall showed practically no changes. At the level of the clavicle it was almost completey occluded by an organized thrombus which seemed to have originated and was most advanced on one side of the vessel. In the axilla the vessel was again about normal.

Sections of the radial on the left side and of the posterior tibial on both sides showed no thickening of the vessel walls.

Whether this is really a cervical rib or an undeveloped first thoracic rib remains in my opinion somewhat doubtful. The skiagraphs seem to point to the latter, showing only twelve ribs in all, with apparently only five vertebræ between the last rib-bearing vertebra and the sacrum. On the other hand, the eighth cervical nerve root certainly came out below the first rib present and the first dorsal below the second rib. These joined on the upper anterior edge of the second rib present to form the inner cord of the plexus, and Lane reports cases in which with a cervical rib present the twelfth dorsal rib is very small or absent, merely represented by long transverse processes, and considers that the cause which determines the presence of the cervical ribs also causes a want of development of the lower ribs. Again, in the skiagraph, the first rib articulating with the sternum is flat and broad looking, like a first thoracic rib, although possibly not very much weight can be attached to this point, as in a specimen of Dr. Shepherd's in the McGill Museum showing what is evidently a deformed first thoracic rib, the second thoracic has more or less this character. Certainly on dissection this rib seemed relatively very high above the clavicle. It is possible that here there may have been a fusion of the seventh cervical and first dorsal vertebræ, in this way accounting for the deformity of the rib and the anomalous course of the eighth cervical nerve root.

Whatever its real nature is—and it is to be regretted that owing to the shortness of time at our disposal we could not make it out more clearly—this deformity has evidently been the cause of the thrombosis and occlusion of the artery. The modus operandi seemed to be this: The arch of the vessel ran very high in the neck, being bounded behind by the scalenus medius and the upper border of this anomalous rib, and in front by the scalenus anticus. Its downward and lateral curve was limited laterally by the anterior end of the rib and its junction with the second rib present. Its downward and outward angle, as it dips under the clavicle, increased on account of the relatively low position of this bone. It is here that the greatest obstruction seemed to be present, as shown in the vessel of the left side, where the process is less advanced, although it is probable some obstruction is offered to the blood stream by the sharper turns which the vessel has been compelled to take in the second part of its course, as well, causing slowing of the blood streams, gradual blocking of this, and closing off the thyroid axis and loss of the collateral circulation.

The obliterating endarteritis and organized thrombus which were present in the radial vessels after amputation of the right arm may, I think, be accounted for without supposing that such a condition was a general one. At this time there must have been an almost complete occlusion of the subclavian artery with a maintenance of the blood supply to the extremity through the thyroid axis. This was necessarily insufficient, as the obstruction to the blood stream, if this theory be correct, was exerted on this part of the vessel as well. The blood pressure was consequently very much diminished, and at last, as the thyroid axis itself also became partially occluded, it was only sufficient to maintain the circulation in the proximal parts of the vessels.

The onset of symptoms relatively late in life is probably due to the same causes which produce symptoms of pressure on the plexus at about this same period of life. It is conceivable also that other etiological factors were present, *e.g.* the action of the carbolic acid, or the toxines of the gonococcus circulating in the blood; these points we hope to bring up in another paper in conjunction with Dr. Archibald.

In considering the matter of operation for the removal of the rib, in Babcock's case, which was very similar to this one, having beginning gangrene of the fingers and almost complete obliteration of the radial pulse, removal of the rib restored the circulation and entirely cured the condition. One cannot imagine this interference affecting the thrombosis which had occurred under the clavicle, but it seems more probable the effect was to relieve the condition by maintaining the collateral circulation by way of the thyroid axis and its branches.

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THE APPROACHING CONQUEST OF CANCER.

By ROBERT BELL, M.D.,

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WHILE all who are interested in the treatment of cancer will hail with satisfaction and pleasure the record of those gratifying results said to have been obtained by the introduction of trypsin into the blood stream, it would be foolish in the extreme to imagine for a moment that trypsin or any other isolated agent will ever *per se* prove an antidote to cancer. It is not my intention at this time to extol any other method of treatment of this disease, though I am well acquainted with such and have observed many instances in which cancer has not only disappeared but has not recurred for a period of ten years and still shows no tendency to recur-

rence. My object is rather to discuss the rationale of this line of treatment in what I consider to be a fair and unbiased manner.

Dr. Beard, the author of the trypsin treatment of cancer, if I understand him aright, was led to infer from certain experiments that the disease had some connection with a deficient production of trypsin. I say *production* of trypsin, as I think this can hardly be termed a secretion of the pancreas, seeing it may not be present at all in the gland at the time the latter is removed from the body; but when it is allowed to remain exposed to the air for some hours trypsin makes its appearance in considerable quantity. In short, there is a conversion of zymogen into this ferment, and as we know this change takes place in circumstances where it is an impossibility for secretion to be coincident, we are bound to admit that it is a derivative of one of the most important constituents of the pancreatic juice. This fact does not of course detract in the least from its value as a digestive agent, but it points to the conclusion that if cancer is due to the absence or deficiency of trypsin then we must look upon a disabled condition of the pancreas as the primary cause of cancer. To get at the root of the matter, however, we are under the necessity of going further back still to ascertain the cause of this morbid condition of the pancreas. In this way we may possibly arrive at the *fons et origo mali*, and thus be enabled to deal with the disease satisfactorily as a whole and not confine ourselves to the treatment of a symptom which the local manifestation of cancer undoubtedly is. It is this short-sightedness which has been the stumbling block to previous methods of treatment, and will continue to prove fatal to all methods which do not aim at removal of those factors which have been insidiously sapping the integrity of the organs which exert such an important influence upon healthy cell life. It is to this oversight that thousands of painful deaths are annually due, and which will continue to be perpetuated no matter what local treatment be devised, if this does not go hand in hand with dietetic and general measures which hold in view the relief and restoration to health of those organs whose functional activity has been prostrated by the persistent neglect of hygienic laws.

It must be obvious to every observer how miserably surgery has failed to give relief in cancer, and the result has been very much the same, whatever local measures have been adopted, when sole reliance is placed upon them. For example, I have known of cases when the subcutaneous injection of a 1 per cent. solution of caustic potash has had a temporarily marked beneficial effect in epithelioma, and Dr. Webb has reported several cases of breast cancer which have been arrested by the injection of a solution of soap into the tissues; but I have not heard of any permanent relief being obtained by these measures.

It is not my intention to refer in this paper to my own method of dealing with this disease. This has been freely dilated upon on many occasions. What I wish to prevent, if possible, is the booming of a treatment which has not been in existence for anything like a long enough period to place it beyond the experimental stage. The public have had so many disappointments that it would be a pity to add another to the number, and though treatment by trypsin may, and I trust will, prove a valuable adjunct to dietetic and constitutional measures, I fail to apprehend how it can possibly by its sole influence have any permanent effect. Cancer is not a disease, so far as I can judge, due to any one cause, but to a chain of causes and effects made up of many links, each of which requires special attention. Two circumstances have impelled me to communicate my views on this important subject: First, the optimistic articles which have appeared in the lay press, and second, the fact of a lady coming to my consulting rooms who was suffering from recurrence of cancer in the right side after two extensive operations had been performed within one year, and when the condition of the parts was infinitely worse than it would have been had the breast been left alone. Well, this lady had just returned from Edinburgh, where she had been under the trypsin treatment for ten weeks, during which period the other breast had become involved, while the original site of the disease could hardly look worse than it did that day. This, however, being the only case I have seen after this treatment had been employed, I certainly would not condemn it on that account. Indeed, I am convinced there is value in it, as I have stated in my last book on the subject, as an adjunct to other methods which are of proved value—and the manner in which I trust it will prove of immense service is that the ferment by attacking the weaker cells of the morbid growth may destroy them, and thus arrest the local increase of the disease. If this can be accomplished while the healthy condition of the neighboring tissue is improved by judicious measures, an important advance will have been made, because the colony or colonies of malignant cells are thus rendered innocuous and will disappear by absorption. The vitality of the tissues will not therefore be diminished as would be the case if the disease had been removed by the knife.

It would be well, I think, in this connection, to glance for a little at the functional utility of the pancreas, especially in relation to the incidence of cancer. This gland, as we know, is possessed of certain important functions, these being supplementary to those of the salivary glands and the stomach, so that it, as it were, is placed as a sentinel to watch over the contents of the stomach as they escape into the duodenum and complete the process of digestion where it has been deficient. This it will succeed in accomplishing provided the food has not been in excess of the requirements of the body and of such a character as can be efficiently dealt with by the digestive organs. On the other hand, it should be borne in mind that if the blood is in a vitiated state, the pancreas, as well as other important organs, will in consequence have its functional activity seriously reduced, and if this continues indefinitely the organs may possibly be rendered incapable of fulfilling their duties even to a limited extent. If the food is in excess in quantity or contains a superabundance of albuminous material in an indigestible form, such as butcher's meat, then as a matter of course that portion which is not dealt with by the digestive fluids will pass into the intestine as effete matter in a highly decomposable form. There we know it will be liable to undergo fermentation of a most noxious description. Now if this putrid mass is retained in the colon for an undue length of time—and this is invariably the case in persons prone to cancer—absorption of the fluid portion takes place and autotoxemia is the result. The various organs of the body are therefore deprived of their normal pabulum and instead are supplied by a vitiated blood stream. Is it to be wondered at then that they fail to fulfill their important duties? And when it is remembered that the nervous system is necessarily handicapped from

the same cause we can easily conceive to what extent the resisting power to disease of any description is reduced. We are unable, therefore, to look upon trypsin as an antitoxin so far as cancer is concerned, though we are aware that the secretion of the pancreas, like that of the stomach and liver, is antiseptic to a certain extent. This antiseptic, however, is quite incapable of preventing the formation of toxins in the intestine, for the reason that as a rule the quantity of the food consumed is far in excess of the requirements of the body and of a character which the various gastric secretions are quite unable to deal with in a satisfactory manner. It would therefore, I think, be inaccurate if trypsin were described as an antitoxin which I am informed has been suggested. The thyroid gland, on the other hand, possesses decided antitoxic properties which fact has been frequently demonstrated. It was only yesterday I was told by a gentleman a surgeon had said that a motion of the bowels was necessary only once in three days. One can hardly imagine it possible that any intelligent man would countenance so flagrant a contempt of such an important hygienic law as the daily evacuation of the intestinal canal most assuredly is. The very idea of carrying about in one's inside for three days a putrescent mass, which he would not tolerate for three minutes were it in sight, is beyond my comprehension. Depend upon it, it is ignorance regarding this maxim and wanton disobedience to it which constitute the primary factor in disease of all kinds, and in cancer in particular. When, superadded to this, the most flagrant errors in diet are of daily occurrence, the danger is accentuated to a most serious degree. It is to these causes that must be attributed to a great extent the failure of the organs of nutrition and the blood glands to perform in an efficient manner the important duties that have been allotted to them. The result is a departure from the healthy to a morbid condition of cell life in various parts of the body, and we know this morbid tendency appears to be increased at the seat of an injury or prolonged irritation, by which the cellular tissue has been still further weakened. It is in such circumstances that cells which have departed from the normal standard are enabled to assert their depraved individuality and commence a new rôle of existence.

Now the effect trypsin is said to exercise upon these morbidly affected areas goes to prove the correctness of the views advanced by those who for a long period have maintained that a malignant cell is intrinsically weaker than a normal cell. It goes without saying, therefore, that if we can by any means instill an increase of vigor into the latter we shall be enabled to subdue the former, and this is one of the chief objects we should aim at in our endeavor to subjugate cancer. But by far the most desirable object to attain is its prevention, and this I hold is within the grasp of any one who will obey implicitly those laws which nature has so explicitly formulated for our guidance.

The question naturally arises, does trypsin act only on the local manifestation of the disease, and does it exert such a beneficial influence as to reduce the tendency to recurrence of the disease at a more or less remote period? Does it favor cell metabolism to the extent of removing the tendency to revert again to any future manifestation of malignancy either in its previous seat or in any other locality? I fear not, as so far as is known trypsin or any other ferment is incapable of exercising this power. It is then on restoration of the functional activity of the thyroid gland, together with a judicious diet, abundance of fresh air, and careful attention to the hygienic condition of the lower bowel that we must depend for recovery and maintenance of vigorous and healthy cell life. So far we have no grounds for assuming that trypsin is capable of exerting any influence whatever upon cell metabolism, whereas we have the most conclusive evidence to prove that the thyroid gland not only possesses the power of inhibiting the effect of autotoxemia, but also exercises a most potent influence upon healthy cell metabolism. It is therefore of the first importance in the treatment of cancer to aim at restoring the functional activity of this gland and at the same time to adopt measures which will reduce the tendency to the introduction of toxic material from the intestines. Now the latter can only be accomplished by adapting the dietary to the requirements of the body and the capability of the digestive organs to effect complete digestion and assimilation, together with the thorough evacuation of the effete matter at least once in twenty-four hours. By this means the blood will be relieved of an incubus which otherwise would exist, and the various organs be enabled to obtain an uncontaminated blood supply which would enable them to resume their functional activity, and possibly restore their wonted efficiency. That the thyroid has an important relationship to the incidence of cancer is borne out by the fact that in cancer subjects it is invariably found to be more or less atrophied, hence it is necessary to supplement the modified dietetic measures recommended by the administration of either thyroid gland substance or its active principle. By these means we have reason to hope the gland may recover its lost power and thus be enabled to resume its physiological activity, which is quite within the range of possibility.

It must not be inferred, however, that the thyroid is the only organ whose utility is impaired in these circumstances. The salivary glands as a rule become more active, while hydrochloric acid is present in the stomach in very much diminished quantity, if it does not disappear entirely, and it is only reasonable to suppose that the pancreatic secretion is likewise to a certain extent in abeyance from the same cause. In this way we may account for the serious loss of weight which is so prominent a feature in cancer, seeing the digestion must obviously be seriously handicapped, and therefore the products available for assimilation reduced in quantity. And if the proteids have not been converted into peptones, but have passed into the intestines in a condition which favors decomposition and therefore the development of enterotoxins, these, finding their way by absorption into the blood, will assist largely in giving rise to that condition which we term the cancerous cachexia, and as a matter of course will perpetuate the disease process by depriving the various organs of their healthy blood supply and substituting a toxic fluid. It is not the first time that I have sought to draw attention to the importance of this factor as a most potent predisposing cause of cancer, though perhaps not exactly in connection with the treatment of this disease as suggested by Dr. Beard. And I am convinced that no treatment can ever prove successful unless it is removed and not permitted to reassert itself. It matters not what treatment we adopt, even though it may appear to prove of service for a time, if we fail to restore the functional activity of those organs which have been permitted to lapse into an unhealthy condition.

No machine can possibly act efficiently unless all its parts are in good going order. So it is with

the human organism. Doubtless it is capable of submitting to considerable ill-usage with an elasticity which is marvelous, but the breaking strain will assuredly be reached sooner or later, and coincident with it those morbid changes which we term disease, be it malignant or otherwise.

On December 12 Mr. Edmund Owen delivered a lecture at the Royal College of Surgeons on "Cancer, Its Treatment by Modern Means," in which he did not mention any of the modern means even by name. The only method referred to was that of surgery, which everyone knows has seldom given permanent relief and usually succeeds only in aggravating the suffering and shortening the life of the patient. He also spoke in anything but a charitable manner of those who have studied not only the local symptom of the disease—which is all the surgeon takes cognizance of—but the conditions which have led up to this. He would appear to apply the term quack to those who are just as well aware as he is that surgery has proved quite incompetent to deal successfully with cancer, but who have relied upon dietetic and therapeutic measures, and who in consequence have received much more encouraging results than surgery has ever been able to achieve. For my part, I would feel much more inclined to apply the term "quack" to a man who takes a fee for an operation which he knows for a certainty will only result in failure. The surgeon *ought* to be aware of the fact, if he is not, that long prior to the local tangible appearance of the disease the conditions which have permitted this to assert itself were latent in the system and that in the majority of instances a direct injury or prolonged irritation, weakening the part, permitted the disease to proclaim its presence in the enfeebled tissue. How then, may I ask, can it be reasonably expected if no measures are adopted to remove the *casus morbi,* that the greater injury caused by the knife will not have a much more disastrous effect upon the vitality and resisting power of the mutilated tissues, thus inviting recurrence which almost invariably is the sequela.

We have now learned that cancer, as we recognize it, is the culminating point of a series of changes which have taken place, seriatim, in certain important organs, consequent in the first instance upon their being compelled to rely upon a vitiated blood supply, this having been brought about to a great extent by gross negligence of hygienic laws and overindulgence in articles of diet which are unsuitable to our digestive apparatus.

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INTRANASAL CONDITIONS AS BEARING UPON THE ETIOLOGY OF DISEASES OF THE EAR.

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PROFESSOR OF DEFECTS OF SPEECH IN THE PHILADELPHIA POLYCLINIC HOSPITAL AND COLLEGE FOR GRADUATES IN MEDICINE; AND LARYNGOLOGIST AND OTOLOGIST TO THE CHESTER HOSPITAL AND TO THE FREDERICK DOUGLASS MEMORIAL HOSPITAL.

It is now nearly twenty years since Wilhelm Meyer first pointed out the close relationship between nasopharyngeal obstructions and diseases of the ear, and his monograph on the subject was epoch making and exhaustive. It called attention for the first time to the interdependence not only of nasopharyngeal and aural diseases, but also of nasopharyngeal and laryngeal diseases; and it served to make clear the utter uselessness and folly of attempting to cure the great majority of diseases of the ear and larynx without at first taking into consideration the conditions in the nose and pharynx. It did as much as any other one thing to divorce the eye and ear in the common practice of specialists, and to join the nasopharynx with both the ear and the larynx.

Formerly we had eye and ear specialists and laryngologists, but no rhinologists. Now a more fitting and comprehensive title, both from an anatomic and pathologic point of view, would be rhinopharyngologists, because the rhinopharynx not only occupies a position midway between the other four important cavities, the nose, mouth, ear, and larynx, but is itself the starting point of many, if not the majority, of the diseases of these cavities.

In the light of recent experience and in these days of preventive medicine, it is to the rhinopharyngologist that we look for the best results, for if we can keep the nasopharynx in good condition and the nasal accessory cavities well drained and ventilated we shall eliminate not only the majority of aural and laryngeal diseases, but also many of the ophthalmic diseases as well.

The purpose of this paper is not to add anything new to the literature of the subject, but to refresh our memories of the things that are old, and to direct attention to a few points of value that have come under my observation bearing upon the relationship between the nose and ear.

That diseases of the ear, especially in their initial stages, are largely dependent upon intranasal conditions, is a fact well known to otologists, but it is not generally recognized by practitioners of medicine. In this connection the following points in the anatomic and physiologic relationship of the ear and nasopharynx can not be too often or too strongly emphasized. The tubotympanum is a cul-de-sac or sinus, occupying exactly the same relation to the nasal cavity that the sphenoid, ethmoid, maxillary and frontal sinuses occupy, and the lining membrane of the tubotympanum is merely a continuation of that which lines the nasal and accessory cavities. Moreover, the physiologic relationship of the middle ear to the nasal cavity is also similar to that of the other sinuses. It has its drainage through the nasopharynx and it is aerated by means of nasopharyngeal respiration. There is a slight excursion of the drum membrane during each respiration, the motion being inward during inspiration and outward during expiration.

The conditions in the nasal cavities giving rise to acute diseases of the ear are, first, those causing disturbances of nasal respiration; second, those attended by suppurative intranasal and sinus inflammation, and third, any condition which by pressure or otherwise may give rise to reflex disturbances. The first class includes hypertrophic and atrophic rhinitis, intranasal growths, septal deflections and spurs, and nasopharyngeal hypertrophies and tumors; and the damage to the ear is chiefly mechanical in its origin. The second class includes all catarrhal conditions of the nasal and accessory cavities, and the damage to the ear is usually by continuity of structure. The third class includes those conditions which give rise to irritation of the terminal nerves in the nasal and accessory cavities and set up ear complications by so-called reflex action.

The tubotympanum is especially liable to damage by mechanical forces acting upon its sensitive and flexible membranes. The air pressure within the normal middle ear being about equal to that in the external auditory canal, and varying only slightly with each respiratory movement, the integrity of the drum membrane is maintained; but, when for

any reason, such as muscular insufficiency, or inflammatory deposition, the Eustachian tube becomes partially or wholly occluded, the air pressure in the middle ear diminishes, and the result is a retraction of the drum membrane and the beginning of a catarrhal process in the tympanum and mastoid cells. This condition may be so insidious in its onset as to be scarcely noticed by the patient, but to those of a sensitive nature there is generally a feeling of fullness in the side of the head. The Germans call this condition a "locked ear." It is often accompanied by tinnitus and dullness of hearing, and sometimes by pain.

The tubotympanum being an offshoot, so to speak, of the nasopharyngeal cavity, the rationale of the development of ear affections from the nasopharynx by continuity of structure is readily recognized, and calls for no special comment.

We now pass to the third class; namely, that in which intranasal conditions produce ear complications by means of reflex nervous action. This part of the subject is none the less interesting because it is somewhat theoretic and problematic. Reflex nervous affections, however, are established facts. Every otologist, for instance, is familiar with the nasal, pharyngeal and laryngeal irritation arising from the use of a probe in the external auditory canal, and, it being a poor rule that will not work both ways, it is not unreasonable to suppose that irritation or pressure upon the sensory nerves of the nasal and accessory cavities will occasion aural disturbances, such as deafness, vertigo and pain.

An interesting and unusual case has come under my own observation. The patient had a slight affection of the septum with an exostosis, impinging upon the inferior turbinal bone at the junction of the posterior with the middle third. The symptoms for many years were of little account, barring an occasional attack of rhinitis when there was some conscious obstruction to nasal respiration, but at about thirty years of age there developed slight tubal symptoms. There were brief sensations of fullness in the ear and occasional vertigo. So trivial had been the nasal symptoms that no connection between them and the aural disturbances was at first suspected, but as the trouble continued it was thought best to correct the nasal irregularity. The spur was removed by my friend and colleague, Dr. Walter J. Freeman; the symptoms at once subsided and have not returned. The above is a report of my own individual experience, and I can, therefore, vouch for its authenticity.

Severe pain in the ear may also be the result of pathologic conditions in the nasal and accessory cavities. Many illustrations of this fact might be given. At the recent meeting of the British Medical Society, in Toronto, Dr. St. Clair Thompson said, that in several of the many cases reported of aural pain due to sphenoidal disease, the mastoid was suspected and even opened before the real cause of the trouble was determined. This one report, it seems to me, emphasizes in a striking manner the importance of this discussion, and the necessity for its frequent revival on occasions of this sort.

The fact that so many diseases of the ear are of nasal origin, however, must not lead us to overlook those that develop in the ear itself, and the fact that such brilliant results are obtained by treatment directed to the nasal cavities must not lead us to underestimate the value of treatment applied directly to the ear. In other words, the otologist should look beyond the ear in all cases of ear disease, and the rhinologist should look beyond the nose when aural symptoms present themselves.

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STREPTOCOCCUS PNEUMONIA.*

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The rôle of the streptococci in general pathology is very important. This is well recognized in surgical practice, but in internal medicine not as much so as it should be. Not long ago I reported in the Cincinnati *Lancet-Clinic* a case of generalized fatal streptococcus infection, probably of intestinal origin, the incidence of the attack being determined by a severe chilling of the body from exposure, just as Pasteur's hen contracted charbon, after being forced to stand with its feet in cold water, by a dose to which it had been immune before the resistance had been lowered by this treatment. The intestinal tube contains streptococci in a large proportion of normal individuals, and I have occasionally found the numbers excessive without any clinical manifestations. Under conditions of a favorable environment, created by altered secretions, constipation, etc., their number may enormously increase, making them, as they were in the case just referred to, the predominating organism. The bacteriolysins of the blood, the phagocytes, and the liver are ordinarily equal to the task of destroying the not inconsiderable number of these and various other microorganisms which run the gauntlet of the intestinal epithelium and enter the portal circulation. With lowered resistance, incidental to fatigue, exposure, etc., this protection may fail and infections occur which may be general in character or secondarily localized in more or less distant areas, or both.

It is thus that abscesses sometimes result from latent foci of infection, their incidence being determined by local disturbances of the circulation from various causes. In one case, for instance, in which I made a diagnosis of brain abscess which was opened and drained, I was able to demonstrate the Eberth bacillus as the pyogenic organism, although the patient had certainly not had typhoid fever for eight or ten years before. This organism, as well as others, may remain innocuous in deep seated tissues for years and set up pathological processes under favorable conditions. Streptococci, however, are very nearly always present in some part of the digestive canal. Several observers have found them, for instance, in the mouth as well as in the intestines.

Streptococcus infection of the lungs is not a very rare occurrence in generalized septic processes occurring in the puerperal state as a result of traumatisms, etc. Such infections are usually localized in character perhaps in the form of an abscess, or may simulate the type of lobular pneumonia. In fact, the clinical investigations of Finkler fully established the occurrence of a type of pneumonia caused by streptococcus infection. Streptococcal bronchitis had already been recognized, but his observations demonstrated clinically and pathologically the occurrence of a cellular inflammation of the lungs decidedly characteristic in type produced by the streptococcus. In no case coming to autopsy was the inflammation croupous in character, showing a definite anatomical distinction between the lesions

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of this disease and those of lobar pneumonia. While the anatomical distinction was clearly defined the physical signs were not equally characteristic. In one of his cases, for instance, he says, "Percussion gave dullness over a wide area on the left side below over approximately the lower half of this lobe. Auscultation revealed bronchial breathing with very fine crepitant râles." This would certainly fit a case of genuine lobar pneumonia fairly well. The general clinical course, however, was very erratic, some of the cases showing a subnormal temperature, others at times 103.5°.

If with physical signs, such as those above described, a sharp rise of temperature would occur simulating the initial stage of lobar pneumonia, the distinction between the streptococcal and diplococcal types might be difficult or impossible. Such a temperature curve in some cases of streptococcus infection is familiar to every clinician. In fact, the case referred to at the opening of this article began with a chill and a temperature of 104° or 105°.

Such a case of pneumonia with the characteristic onset and physical signs and clearly due to a streptococcus infection has actually come under my own observation. Following is the case

The patient, Mrs. ——, seen in consultation with Dr. Kithcart, of Columbia City, February 17, 1905, was the mother of four children, the youngest being four months old. Was always healthy until one week prior to my visit, when she was suddenly taken with a chill after exposure during a long drive. She was found by her physician with a temperature of 103°. For two days there was no cough nor râles, although the temperature continued at about 103° to 104°. On the third day crepitant râles were heard in the base gradually extending upward, dullness on percussion only appearing a couple of days later. At the time of my visit the patient was mildly delirious, and had been for about three days. Temperature, 103.5°; pulse, 120. Blood examination showed leucocytosis of 27,300. The examination of the urine revealed both albumin and casts due, as the sequel showed, to transient toxic nephritis. I did not see the patient again, but the course of the disease was favorable, the severe symptoms subsiding by crisis. Two or three days later the temperature suddenly dropped from 102° to 99.8°, and the pulse below 100, remaining so through convalescence, which was uneventful, the lung clearing up completely in about the usual time.

The bronchial secretions were found to be almost a pure streptococcus infection. On the most careful search not a single diplococcus was found, although there were other cocci not arranged in either chains or pairs.

The proof of the streptococcal nature of this case appears to be conclusive, and is, in fact, precisely the same as that upon which Finkler's decision was based in his cases, yet clinically it corresponded very closely to the ordinary type of lobar pneumonia. It not only began with a chill and a sharp initial rise of temperature, but defervescence occurred by crisis. With regard to this latter point, however, a considerable number of cases of lobar pneumonia disappear by lysis instead of crisis, so that crisis cannot be regarded as either essential or pathognomonic of lobar pneumonia. Whatever may be the biochemical explanations of crisis there seems to be no reason why it might not occur with other than diplococcal infections, and it actually did so in this case.

It seems quite probable that if bacteriologic examinations were more frequently made the disease clinically diagnosticated as lobar pneumonia might often be found to be due to other infections. The diplococcus is said by observers to be found in only about seventy-five per cent. of the cases of lobar pneumonia, which raises a very proper question concerning the bacteriology of the remaining twenty-five per cent. It is perhaps possible, although it seems quite improbable, that an active agent in the production of a pneumonia would not be found in the sputum. Netter found the *Diplococcus pneumoniæ* 82 times in 82 autopsies of lobar pneumonia, although other observers have failed to find it with the same uniformity. The possibility of the infecting agent disappearing from the sputum is well illustrated by a case of what was probably a streptococcus infection of the lungs which I recently saw in consultation with Drs. M. V. Replogle and J. U. Riggs, of Bryan, O. There was localized consolidation of the lower lobe of one lung with the indications of general sepsis, and yet the sputum failed to show diplococci or streptococci or any other active pathogenic organism in numbers sufficient to justify the assumption of their causal relationship to the pulmonary process. When I saw the case it was in the twelfth week of a puerperal infection, which a little later proved fatal. In another case which I saw in consultation with Dr. N. T. Dean, of Hicksville, O., the patient had been subjected to a minor surgical procedure which had healed perfectly by first intention, but there was an entirely groundless suspicion on the part of the patient's friends that the pneumonia might have been secondary to a wound infection. I was able at the bedside to demonstrate that the infecting germ was the *Diplococcus pneumoniæ*, which, although sometimes pyogenic, has never, so far as I know, been demonstrated as the agent of wound infection.

As illustrating the erratic manifestations of pneumococcal infections, I might mention another case seen in consultation with Dr. Powell, of Defiance, O., in which the later clinical picture was that of an intense septic infection. When seen by me in the fourth week there had been chills occurring once and sometimes twice a day, followed by high fever (104°) and profuse perspiration, the temperature preceding the chill being usually close to normal. There was a leucocytosis of 28,000. Notwithstanding this picture the sputum was very nearly a pure culture of the *Diplococcus pneumoniæ*, which in all probability had assumed a pyogenic rôle, and the case was really one of sepsis due to this organism, which proved fatal.

In some of the cases of streptococcus pneumonia, as pointed out by Finkler, there is no expectoration at all.

In conclusion attention should be called to the fact that streptococcus pneumonia may simulate other diseases as well as lobar pneumonia. In a series of cases observed by Wasserman practically all had been sent to him with a suspicion of tuberculosis, and in some of Finkler's cases the resemblance to typhoid fever was very striking.

Rapid Recovery from Dry Pleurisy by Treatment with Iodide of Potassium.—L. Jacquet and Luzoir have observed three remarkable cases of resolution in dry pleurisy from the action of iodide of potassium. In one of them especially the friction sounds were extraordinary in their intensity and could be heard quite a distance from the thorax. These bruits disappeared in some days under the exclusive influence of this drug. The phlegmasia dated back three weeks, and the loud sounds extended over a large part of the right pleura. Iodide of potassium was administered at first in the dose of one gram and two days later pronounced improvement was evident. The treatment was continued with increasing improvement. Although this method is not entirely new, it deserves to be emphasized.—*Le Bulletin Médical*

REPORT OF THREE EPIDEMICS OF MEASLES, WITH PARTICULAR REFERENCE TO KOPLIK'S SYMPTOM AND ITS RELATION TO THE RASH AND THE INITIAL FEVER.*

By CHARLES J. DILLON, M.D.

NEW YORK

Ten years ago Koplik[1] first published his observations on the occurrence of a buccal eruption in measles, and, fully conscious that this is a late hour to attempt to supplement his studies, it is only for whatever of interest you may find therein that I wish to present the following statistics compiled from the records of three epidemics of measles in institutions for children.

The diagnostic value of Koplik's symptom seems to be quite generally conceded by the pediatrists of America and England, but not by any means so well credited by the French and German diagnosticians, if we are to judge from the communications on the subject in the technical periodicals for the last three or four years. An idea of the confusion which exists concerning the value of Koplik's symptom may be formed from a brief consideration of the recent observations of a few prominent investigators.

In England, Balme,[2] in the fall of 1904 published his observations of 214 cases of measles, in which he found the spots 209 times; in 95 cases examined in the prodromal stage they were present in 93, an unusually favorable report. Although English physicians as a whole have regarded Koplik's symptom with more favor than have those of the continent, it is worthy of note perhaps that as late as January, 1904, Eustace Smith,[3] in describing two cases of second measles infection, did not include observations of the buccal mucosa for this diagnostic sign.

About the same time Variot,[4] writing from Paris, asserted that the buccal eruption described by Koplik was of very doubtful value as an early diagnostic sign of measles, and claimed that the majority of his associates in the Société de Periatrice agreed with him.

Manassa[5] had stated, a few months previously, that he believed the spots to be a very valuable diagnostic sign and present in the majority of cases; curiously, though, he describes the spots as occurring on the palate as well as on the mucosa of the cheeks and lips, a description which does not agree with that of Koplik.

Aronheim,[6] on the other hand, in July, 1903, from his studies of 150 cases, many of them in the prodromal stage, concluded that Koplik's symptom was of no great value, he having found it only in 9 cases.

Müller,[7] in 1904, reported his observations during an epidemic at Marburg, where he found the symptom in 134 out of 166 cases examined; he recorded the observations of Perkel, who found the spots in 32 out of 33 cases examined in the prodromal stage, and in 67 out of 92 cases examined in the eruptive stage. Müller also noted the observations of Rolly, who found the spots in 67 out of 78 cases, in 24 of which they were seen from six hours to four days before the skin eruption.

Brünning,[8] in March, 1905, declared that Koplik's symptom was of great value, that it was seen in no disease but measles, and that it was frequently overlooked. Brünning believed that the early detection of the spots would be of service as a prophylactic measure, but Cotter, some time before, while describing a measles epidemic at the New York Foundling Hospital, had demonstrated that this hope was hardly warranted.

Cotter[9] published an analysis of 187 cases, in 169 of which Koplik's spots were positively present, their occurrence was doubtful in 10, and they were absent in 8; he noted that they appeared from five days to twenty-four hours before the skin eruption; in two cases, however, the spots appeared after the rash, and one case presented the spots and ran a febrile course without a rash.

Merk,[10] Professor of Dermatology at Innsbruch, late last year (1905) recorded a series of cases, five in all, occurring in one family, in none of which had he found Koplik's. Merk was interested in the cases because only three exhibited a rash, two running their course without a rash, but subsequently developing urticaria.

Ballico,[11] assistant to the chair of Pediatrics at Parma, in 1905, reported that in the examination of 63 cases of measles he found the symptom with certainty only thirty-four times; he does not accept the spots as very definitely diagnostic, and points to several reports of their having been noted in cases of rubella, pertussis, varicella, and tonsillitis. Ballico also sums up the experiences of several observers in the following truly motley array of percentages: The symptom was noted by Sippel in 98 per cent. of the cases; by Averbach in 85 per cent.; by Widowitz in 86.6 per cent.; by Michellozzi in 18.7 per cent.; by Havas in 8.25 per cent.; by Aronheim, in the series mentioned before, in 6 per cent.

At the New York Foundling Hospital in the spring and summer of 1905 a small epidemic of about 60 cases, and an epidemic of about 200 cases in the spring of 1906, furnished the bulk of the material for this study. An additional opportunity for observation was afforded by an epidemic of about 85 cases in another institution for older children, ranging from five to fourteen years, during the recent summer (1906).

Frequency.—From the records of 230 of the Foundling Hospital cases in which the presence or absence of the spots was noted, they were definitely present in 217, doubtful in 2, and absent in 11. But owing to a tendency of the buccal eruption to fade early, sometimes, indeed, before the appearance of the skin eruption, and frequently before the rash has fully bloomed, it is only fair to state that in 8 of the 11 cases in which the spots were not found they were not sought until the rash had begun to fade, in one other case the rash was just at full bloom, leaving only 2 cases in which the spots were definitely absent throughout the whole course of the disease.

In the 85 cases studied in the institution for older children the symptom was found in every case, with the exception of a few that were not examined until the skin eruption had begun to fade.

The *sequence* of Koplik's symptom and the skin eruption was studied in 154 of the Foundling Hospital cases and it was noted that the Koplik spots appeared four days before the rash in 5 cases; three days before the rash in 5 cases; two days before the rash in 29 cases; one day before the rash in 70 cases; less than one day or synchronous with the rash in 42 cases; twenty-four hours after the rash in 3 cases.

In these children the very first erythema on the forehead or behind the ears was taken to be the beginning of the rash, and it will be seen that the spots on the buccal mucosa preceded the appearance of the exanthem by only twenty-four hours or less in the majority of the cases (112).

The *duration* of Koplik's symptom in 112 cases

*Paper read at a meeting of the Pediatric Section of the New York Academy of Medicine, December 13, 1906.

in which the condition of the buccal mucosa was observed during the whole course of that disease was found to be one day in 4 cases; two days in 28 cases; three days in 48 cases; four days in 28 cases; five days in 2 cases; six days in 2 cases; the majority of the cases exhibiting the symptom from two to four days.

Early Disappearance.—It was found at the same time that in 99 cases in which the spots had been noted before the appearance of the rash they had disappeared in 5 cases before there was any sign of a rash, a significant fact when we reflect that if these cases had come under observation only with the appearance of the rash they would have been classed as cases in which Koplik's symptom was absent. It was a very common occurrence to have the spots disappear before the rash had reached the maximum intensity. In 141 cases with a full-blown rash the spots had already faded in 55 cases, more than a third; disappearing three days previously in 2 cases, two days previously in 2 cases, twenty-four hours before in 13 cases, and less than twenty-four hours before in 38 cases.

Altogether there can hardly be a doubt that Koplik's symptom is a valuable and consistent early symptom of measles and a diagnostic aid of the greatest importance. As to the value of the symptom in prophylaxis, the observations at the Foundling Hospital during the last two epidemics did not tend to confirm the hopes of Brünning and others on this point.

Frequent and careful examinations of exposed children were made and cases presenting suspicious spots on the buccal mucosa were immediately removed from the nurseries but without avail, the epidemics were not checked, and it seemed certain that infected children were capable of spreading the contagion long before they presented Koplik's spots. Instances where epidemics have apparently been checked by the removal of cases presenting the spots might have their explanation in an unusual degree of resistance possessed by the children exposed.

In the course of an epidemic in an institution it would seem that greater possibilities in the way of prophylaxis are offered by the thermometer test than by any other. For instance, at the Foundling Hospital about forty-eight children in a nursery, few of whom had already had measles, were accidentally exposed to infection; the primary case when detected showed a number of Koplik's spots and a beginning rash, and was immediately removed. After a period of seven days the temperature of each child in the nursery was taken per rectum twice a day and any child showing a rise in temperature was immediately removed and isolated as a suspected case. By this plan six children were removed from the nursery from nine to twelve days after the removal of the primary case, all subsequently developed measles, and no other cases occurred in the nursery. One of the 6 cases had fever five days before the Koplik's spots and six days before the rash; two had fever thirty-six hours before the spots; two twenty-four hours before; and one less than twenty-four hours before the spots.

In all probability the febrile movement of the prodromal stage almost invariably precedes by a considerable period the appearance of Koplik's symptom, and its recognition would be of greater prophylactic value than the detection of the spots.

From these observations it would seem that:

1. Koplik's symptom is a constant, definite, early diagnostic sign of measles, of greater diagnostic value when present than even the rash. The constancy of the symptom is indicated by the fact that in 221 cases observed from the period of incubation well into convalescence it was definitely absent only twice.

2. Koplik's spots sometimes disappear before there is any sign of a skin eruption, and frequently before the rash has fully bloomed.

3. Cases seen in the earliest stages and presenting but few Koplik's spots as yet are known to have infected exposed children, and for this reason the early detection of the spots can hardly be expected to prove a prophylactic measure of any great value.

4. Koplik's symptom is usually, if not always, preceded by a febrile movement, and the thermometer would seem to be the best aid to early diagnosis when dealing with an epidemic in an institution.

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THE RADICAL CURE OF TRIGEMINAL NEURALGIA BY MEANS OF PERIPHERAL OPERATIONS.*

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In an article entitled "The Surgical Treatment of Trigeminal Neuralgia," which appeared in the Medical Record, September 29, 1906, I discussed in detail the reasons for the recurrences after operative treatment, and also made suggestions as to the best methods of obviating these post-operative recurrences. At that time my arguments were based on a rather limited experience and on a careful study of the literature in regard to the pathological findings in cases of reported recurrences. Since then it has been my good fortune to operate on three cases of trigeminal neuralgia by the methods suggested in that article, which I wish to place on record.

Before describing these cases, it will perhaps not be amiss to again recall in brief the most salient points whereby I have arrived at my conclusions.

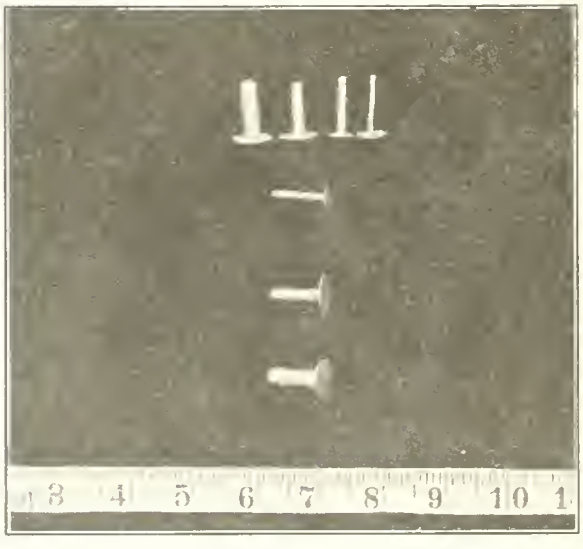
1. We know nothing of the pathological anatomy of trigeminal neuralgia. 2. All proof is lacking, that the neuralgia originates in the Gasserian ganglion. 3. All proof is lacking, that the neuralgia is of central (cerebral) origin. 4. Cures, so-called, for a longer or shorter period, have been reported, even after minor peripheral operations. 5. Relapses, after a shorter or longer period, have been reported, even after such major operations as the extirpation of the Gasserian ganglion, even in the most competent hands. 6. In the present state of our knowledge we know of no positive cure; all our treatment must be symptomatic, and we can best attain this by interrupting the conduction of the sense of pain from the affected area. 7. All recurrences have been found to be due to a regen-

*Cases presented at the Surgical Section of the Academy of Medicine, December 7, 1906.

ration and reunion of the divided nerve tissues. Every one of these points is an absolute fact, as far as our present knowledge permits, and does not require theorizing or lengthy argument; it follows, therefore, that: 8. The desideratum at present is, to prevent regeneration and reunion of the divided nerves.

Fortunately, most of the terminal endings of the trigeminal nerve make their exit from the skull through bony foramina. This naturally suggests the possibility of dividing the nerve in the canal, and preventing the reunion by permanently plugging up the foramen of exit.

After discarding various methods I have devised the following means for a permanent closure of the foramen: Messrs. Tieman & Co. prepared for me silver buttons, each consisting of a flat top not more than perhaps one-sixty-fourth of an inch in thickness, and of a diameter of about one-quarter of an inch; it is sufficiently firm to retain its shape, and yet sufficiently malleable, so that it will give, if lightly hammered upon. In its center there is annealed a silver rivet, ranging in thickness from one-thirty-second of one inch to one-eighth of one inch, and about three-eighths of one inch in length. These buttons are shown in the accompanying illustration.



The operation in appropriate cases consists in the following steps: Through an incision of suitable length, half to one inch, the foramen in question is exposed. The nerve is then carefully isolated from the accompanying vessels; a short length is drawn out of the foramen, in order to be sure that the nerve will retract sufficiently from the surface, and it is divided. The accompanying vessels are treated in a similar manner, after double ligature. A button of suitable diameter is selected and driven into the foramen, so as to fill it completely. As some foramina are not absolutely round, the overhanging flat top is now moulded to the underlying bone, so as to make the closure absolutely tight. The small cutaneous incision is closed with fine silk. If necessary the entire operation can be done in local anesthesia.

The cases I have operated in this manner are the following:

Case I.—Mrs. B. C., fifty-eight years of age, was referred to me by Dr. Wilonski, with the diagnosis of left-sided trigeminal neuralgia. The pain had existed for a number of years, and had been previously treated both by local and internal medication; most of the teeth, both of the upper and lower jaw, had been extracted. On my first examination I discovered a large polypus filling the left naris, and in order to exclude this as a possible source of the neuralgia it was removed, but without benefit. One month later she was admitted to Mount Sinai Hospital, in the service of Dr. Gerster. During her preoperative stay at the hospital we found that the attacks of neuralgia occurred at very frequent intervals, sometimes every few minutes; that the pain was very severe, and was distributed over the entire left side of the face and scalp, involving all three divisions of the fifth nerve. Pressure upon the supraorbital, infraorbital, and mental foramina was particularly painful. The left half of the tongue was also painful. Physical examination otherwise was negative; the patient was emaciated, weak, and decrepit in appearance, so as to preclude the possibility of any major operation. The patient was operated upon September 17. The mental, infraorbital, and supraorbital foramina were exposed in the order named, by small transverse incisions; the nerves divided, and the foramina plugged by means of silver buttons. When the patient reacted fully from the anesthesia, the pain had completely disappeared, and has not returned since. Primary union resulted, and patient was discharged entirely free from symptoms on September 25. The patient presents herself from time to time; thus far there is no return of the neuralgia. The buried metal causes no discomfort whatever.

Case II.—Miss A. G., sixty-seven years of age, was referred to me by Dr. H. S. Hart of Cambridge, N. Y. The neuralgic pains date back some six years, and for a long time were localized to the left cheek; gradually they extended upon the forehead and scalp; as far as could be ascertained the third division was not involved. At present the attacks come on at very frequent intervals; the slightest touch of the face or scalp being sufficient to bring on an attack. All the teeth had been extracted. I operated November 22. After exposing the left infraorbital foramen, and after division of the nerve, I plugged up the foramen with a silver button. I then exposed the supraorbital nerve, but finding only a notch instead of a foramen, had to content myself with an evulsion of the nerve. After the operation, the patient was free from pain, excepting in a very small area upon the cheek, probably supplied by the malar nerve. Primary union resulted and patient was discharged December 1. On account of an absence of the supraorbital foramen, this case cannot be considered as cured, not even tentatively. It is, however, not impossible, in view of the fact, that the second division was primarily and mainly involved, that the neuralgia in the frontal region will cease entirely, after the iritation from the second division has been excluded.

My third case, though chronologically the first one, was not operated upon with the silver buttons; it should, however, be mentioned in the same class, because the underlying principle is the same.

Case III.—H. F., forty-six years of age, was admitted to the hospital in the service of Dr. Gerster September 26, 1904. He gave a history of neuralgia, involving the left inferior dental nerve, extending over a period of several years. All of the teeth had been extracted in vain efforts to modify the attacks. He was operated upon September 29 in the following manner: Through an incision about one inch in length, extending from the agle of the jaw forward, along the inferior border, the attachment of the masseter was exposed, especial care being taken to avoid any injury of the branches of the facial nerve. The masseter and underlying perios-

teum were peeled up from the bone and retracted; a groove was now chiseled into the outer surface of the ascending ramus of the jaw, exposing the nerve in its canal; about one inch was then resected, and the wound closed without drainage. Primary union resulted, and patient was discharged October 16, relieved of his symptoms. The unusual length of stay at the hospital was due to the fact that at the same time he was operated for a right inguinal hernia. The patient was entirely free from symptoms for nine months, when the neuralgic pains returned in their original severity. He was readmitted in July, 1905. The preliminary steps of the old operation were repeated; when the groove in the ascending ramus of the lower jaw was exposed, a regenerated nerve, of apparently normal appearance and size was found; about one and one-half inches of it were again resected. Just before closing the wound, the idea occurred to me, that just as the patient was not cured by the first operation, the second one would also be ineffectual, unless something were done to prevent regeneration and reunion. Horsley's wax occurred to me at first, but I discarded it, because I feared that it would be absorbed too quickly. I thought of silver foil as a suitable material, and therefore packed the cavity full of this material. Primary union resulted, and patient was discharged two weeks later. Again his stay at the hospital was protracted by a radical operation for inguinal hernia, this time on the left side. The patient was again free from all symptoms for about nine months, when the pain returned, though in a considerably diminished degree; gradually the pain became severer, particularly at night. He was readmitted July 10, 1906. The patient was prepared for and willingly assented to an intracraneal operation, but finally a peripheral operation was again decided upon. A skiagraph at this time failed to show the presence of the silver. Operation July 19. The preliminary steps were the same as in the two previous operations. When the groove in the ascending ramus of the lower jaw was exposed, some silver foil was found in it, but evidently insufficient to give a shadow on the skiagraph, and insufficient to prevent regeneration and reunion; it was intimately incorporated with the cicatrical tissue filling the canal. It was again extirpated, and the groove firmly plugged with silverfoil, taking particular care to exert firm pressure into each angle, where presumably the ends of the nerve were. Primary union resulted, and patient was discharged July 25, free from all pain.

He presents himself from time to time; thus far there is no recurrence. He still complains of a paresthesia in the region supplied by the lingual nerve, but only in a very slight degree.

I do not present these cases as cured cases of trigeminal neuralgia; the period of observation is altogether too short to admit this deduction. It can be safely argued, however, that theoretically, at all events, there is no reason whatsoever why there should be a recurrence of the neuralgia.

Laryngeal Tuberculosis.—The local application of formalin is very highly spoken of by Lockard, who states that the remedy possesses the following advantages: It surpasses all other bactericides in solutions of a strength which can be tolerated. In tuberculous ulcers it is fully the equal of, and probably superior to, lactic acid. Its effect upon vegetations is prompt and pronounced. It possesses some anesthetic properties. It is the only remedy of the curative class that can with safety be placed in the patient's hand, thus maintaining a continuous cleansing, germicidal, and stimulating action.—*The Laryngoscope.*

PNEUMONIA IN CHILDREN: ITS SUCCESSFUL MANAGEMENT BY HYDRIATRIC MEASURES.

WITH AN ILLUSTRATIVE CASE.

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It is most notable that pneumonia yields with promptitude to treatment intelligently applied at an early stage of the attack. Or if the physician is not called until absolutely too late, he can readily save the patient by proper means of management; but his best efforts will be futile most certainly if he starts out with the false idea that he has to cope with a case of lung disease. Wherever, whenever, and by whom the doctrine is adopted that pneumonia is not an inflammatory process; that pneumonia is not a lung disease, any more than typhoid fever is a bowel disease, but that it is an infectious disease whose chief manifestation is in the lung,

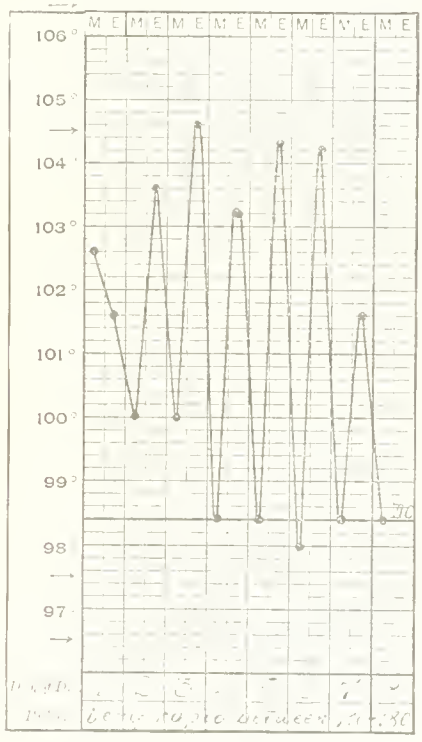

Chart of Case of Pneumonia.

dependent upon a toxemia evolved in an infection process, then the disease will cease to be treated, and the physician is prepared for the more effective management of the patient suffering from it, with the result of promoting rapid recovery and saving life. That effective management is by means of water judiciously and properly applied. It is to be regretted that there are some physicians who, emulating the fireman who quenches a fire by drowning it, think they should do the same thing in pneumonia, by pouring at the spot where the symptom seems most troublesome sledge-hammer blows of allopathic medicine, or if their school forbids that, they must anoint that spot homœopathically; either method adds fuel to the fire, and the patient dies of heart-failure. This heart feebleness arises from a paralysis of the vasomotor nerve centers, and not of the heart itself, by reason of which the capillary blood-vessels lose their elasticity and normal tone, which are essential to a properly acting vasomotor

system; the poor heart which is laboring to compensate for that loss of elasticity becomes worn out, resembling the driving wheels of the locomotive which have lost their resistance by slippery tracks, and fly around ineffectually, racking the machinery and destroying its usefulness.

Hydrotherapy counteracts collapse of the vascular walls, consequently there is no such thing as heart failure; the pulse has always gained in tension after each treatment, and no patient is too weak to bear hydrotherapy properly administered, varying it according to his condition. Nature has provided its own simple and effective remedy for pneumonia—water. Water will promptly and effectively execute its functions whenever proper, just as reflex action will promptly respond to any proper call. The toxic agent circulating in the blood in pneumonia (the diplococcus) produces a toxemia, and that toxemia spends its full force upon the nerve centers which govern the functions, thus impairing the organs dependent upon them. The object of treatment is to bridge over the danger which would arise from the failure of these functions by enhancing the patient's vital powers until the life period of the diplococcus is terminated, which is about seven days. The cold bath comes to the rescue, because cold applied to the peripheral nerve terminals of the skin produces a shock to them, and a stimulus to the sensory fibers of the skin which is conveyed to the central nervous system, which in turn sends out a reflex stimulus to the nerve centers which govern respiration, circulation, digestion, tissue building, and excretion, the five life-saving functions upon whose capacity the patient depends to withstand the toxic agents circulating in the blood. The mere lowering of the temperature is a secondary consideration, but the temperature is reduced, respiration deepened, cardiac action improved, and pulse slowed and rendered less dicrotic.

In the early stages of pneumonia in children we give the full bath, beginning when the temperature reaches 102.5° with a bath at 95° every four hours, reducing the temperature of each bath two degrees until it reaches 80°, but not going below 80°, with due regard to the effect produced. With the bathing there should be plenty of good, hard thermic friction, which is the *sine qua non* in all cold baths.

If dyspnea, somnolence, stupor, and delirium should occur, a little different method is used. The child is held in water enough to cover its hips at 100° for five minutes; after which several basins of water, having been prepared and in readiness at 70°, are held high up (the operator standing preferably upon a chair so as to get as much weight to the water as possible) are poured upon its shoulders. This can be repeated every two hours if necessary, but it is seldom necessary, for the effect is magical; the patient is aroused to consciousness, the eye brightens, inspiration is deepened, and the nervous system is refreshed as by no other remedial agent. This procedure is called an affusion, and should be used when any head symptoms make their appearance. The following case illustrates exactly how a child can be successfully managed when affected with pneumonia. Hydrotheraphy furnishes always the safest and most reliable antithermic results. Each bath generally reduces the temperature two or three degrees, and through the temperature, of course, rises again, it is generally not so high, although it may exceptionally be somewhat higher than it was before. But, whatever the immediate effect may be, the baths are repeated until the temperature is finally reduced to normal, and remains there in the morning.

On the morning of November 26, 1906, at 4 o'clock, I was summoned to see C.— S.—, aged seventeen months. I found her temperature only 101.6°, with jactitation and dyspnea. The mother told me that the day before it had some popcorn in its mouth, and while it lay on its back on her lap, by some sudden movement it had choked and began to strangle. She held it up by the feet and slapped its back violently for some minutes, head downwards. I did nothing at that visit, but ordered a teaspoonful of castor oil. At 8 A.M. I called again, and found the child with all the symptoms of croupous pneumonia, with a temperature of 102.8°, and I settled right down to the treatment of the child. A bath at 95° was given for ten minutes, with good, hard thermic friction. Also at 12 M., 4, 8, and 11 P.M., reducing the temperature of the water 2° each bath. That ended the first day.

November 27, baths at 2:30 and 9 A.M.; 12:40, 4, and 7:15 P.M.; the last three baths at 80°; no bath all night. Slept well.

November 28, baths at 12:30, 5 and 8:30 P.M., at 80°. Slept well all night. Coughed a good deal, and painful.

November 29, baths at 2 and 9 P.M. at 80°. Slept all night. Ordered compresses at 60°.

November 30, 7 P.M., the temperature having risen to 103.2°, I gave a bath at 80°. Slept all night, coughed a good deal.

December 1. Bath at 4:30 P.M. at 80°. Temperature 104.6°. 6:30 P.M. feet cold, delirium slight, lies on its mother's lap face downwards, arms extended down over the head; insomnolence and stupor. Gave an affusion at 7 P.M. of five panfuls of water at 65°. At 9 P.M. it was sitting up in bed playing with its dolls. Ordered abdominal compresses at 60°. She slept well all night.

December 2. 9 A.M. temperature normal; child sitting up in bed playing with its sister and toys. 8 P.M. temperature 101°. Ordered compresses at 60°. Slept all night; no compresses after 11 P.M.

December 3. 8 A.M., temperature normal, and child sitting up at breakfast table; she made a beautiful recovery.

Any watchful physician can obtain the same results, and every case of a child with pneumonia can be managed successfully by the same means. This child took in all seventeen baths, and one affusion at 65°, and compresses at 60°. No medicine of any kind was given except several small doses of castor oil, more as a placebo to the parents than for any other reason. The diet, of course, was of milk administered with precision in the proper quantity every two hours.

If the temperature chart is followed, it will be readily seen how the cold bath knocks the temperature down 4½° in twelve hours, with no depressing effect at all, such as always follows the use of coal tar antipyretics, but, on the contrary, showing a clear gain in favor of the patient. Just as the physician varies the dose of strychnine or any other medicinal agent to suit the indications of his case, so may the dose of water as regards variation of temperature, duration, pressure, and method, be varied to suit the reaction, age, and vital powers of the patient.

Hydrotherapy is a power for good in infectious diseases, before which all other remedies must stand aside, and the physician who follows out the above line of action need never fear for the final result, for the reason that he is giving his little patient the very best if not indeed the only chance for its life.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE PURE-MILK PROBLEM.

It is a hopeful sign that the milk supply of New York city is being made the subject of frequent discussion at public meetings and in the daily press. There is a general agreement that there is danger in the milk furnished to the city, but opinions differ widely as to the best means of overcoming this danger. The newspapers call for pasteurization of all the milk consumed, while the Health Commissioner is quoted as opposed to municipal pasteurization and as favoring a system of inspection of the sources of the milk supply.

The milk which is brought to Manhattan every day comes from some 30,000 farms scattered through several States, some of these farms being 400 miles distant from the city. The milk reaches the consumer from fourteen to forty hours after it has been drawn from the cow. Some of these places are regular dairies, with large herds of cattle, others are small farms, with from one to half a dozen cows. A few of these dairies are owned by wealthy men and are in the nature of fads, their proprietors caring more for the scientific keep of their cows and the absolute purity of the milk they produce than they do for the profits of their venture. Yet in order to maintain some sort of relation between the debit and credit columns of the ledger it is necessary to charge a price for the products of those dairies which is prohibitive to all but the rich. The milk from these model dairies is as unobtainable by the poor as diamonds. The same is true of the milk from the commercial dairies which is certified by the Milk Commission of the County Medical Society. Twelve cents a quart, which is the price of certified milk, puts it beyond the reach of the poor, even if there were enough of it to supply them at any price. There are 1,600,000 quarts of milk consumed in New York City every day, and of this the total amount of certified milk is only about 10,000 quarts—literally a mere drop in the bucket. The work of the Milk Commission is most commendable as insuring milk of good quality to those who can afford to pay for it, but it suggests no solution of the problem of a pure milk supply for the masses. The minute supervision of a portion of the milk supplied by a few of the larger and better class of dairies is impossible of extension to the thousands of few-cow farms supplying the city. At present the Health Department has a force of fourteen inspectors and the Commissioner has asked for an appropriation to enable him to increase this force to about one hundred. If he gets his hundred inspectors, each one will have to look after 300 farms, and if he is able to inspect five every day in the week he will call at each place once in two months; if he rests one day in the week and takes a two weeks' vacation in the year, his visits will be ten weeks apart, or five in the year. The hope that such angel visits will keep the milk free from tubercle or typhoid bacilli, or even from cow dung, is, we fear, utopian. The inspector, in his hurried call, may be able to suspect the evidence of advanced tuberculosis in a cow or in a milker, and he may by good detective work learn that there is a case of typhoid fever in the farmer's family; he may even form a judgment as to the observance or non-observance of the ordinary rules of cleanliness about the cow barns, though it will be impossible for him to inspect the actual process of milking in more than two places in one day. Time will be lacking for him to detect tuberculosis in the early stages in either man or beast, and he can only surmise from the general appearance of the place that the milk cans are properly cleansed in boiling water. If he is conscientious and filled with enthusiasm, he may do good missionary work, but the inculcation of habits of cleanliness in the average farm hand, who hardly knows the meaning of the word and is a stranger to all it implies, will be a work of time—and in the meanwhile the rivulet of milk from this contaminated source will carry its dirt and its germs of disease to foul the great river of 400,000 gallons which flows into the city at every dawn.

We do not belittle the value of the inspection of milk by the health authorities of this city. It is absolutely necessary as a sanitary measure, and its place cannot be filled by pasteurization. Pasteurization alone, for which the newspapers are crying, is insufficient; the milk that is pasteurized must be reasonably pure if the finished product is to be accounted safe. The process destroys the pathogenic bacteria present in the milk, but it does not affect the toxins already elaborated by these germs, and these toxins are poisons that may cause sickness and death. In the course of time—years it may be—the needed reforms in milk protection may be effected by the system of inspection; but only after repeated warnings and punishment by rejection of the milk will the honest farmer be gradually brought to a realization of the fact that obvious filth is objectionable and doesn't pay. Inspection is necessary and will doubtless, if conscientiously performed, bring about in the course of time betterment in the milk supply; it can never make it perfect, and so long as a great part of the supply is derived from small farms with one to half a dozen cows, where economic conditions and tradition render scientific methods impracticable, if not impossible, it will be safer for the babies of this city if the essential inspection of the sources is supplemented by pasteurization of all milk sold, let us say, at less than ten or twelve cents a quart. Such a price limit will exempt the product of the certified dairies from the necessity of pasteurization, and those who believe in the nutritive superiority of raw milk will be able to get what they want if they can afford to pay for it. Others, under a system of conscientious inspection and pasteurization, will be assured that the milk offered for their consumption is, if possibly not so nutritious, at least free from the germs of disease—a food and not a poison.

AN IMPORTANT DECISION REGARDING THE PRACTICE OF MEDICINE.

The Appellate Division of the Supreme Court of this State has recently handed down an opinion affirming the conviction of a self-styled "mechano-neural therapist" of the illegal practice of medicine. The appellant contended that he was not guilty of the crime charged, namely, of practising medicine without being lawfully authorized and registered, inasmuch as he was not practising medicine within the meaning of the statute, in that he neither gave nor applied drugs or medicines nor used surgical instruments. In his comment upon this contention Justice Clarke said:

"To confine the definition of the words 'practice medicine' to the mere administration of drugs or the use of surgical instruments would be to eliminate the very cornerstone of successful medical practice, namely, the diagnosis. It would rule out of the profession those great physicians, whose work is confined to consultation—the diagnosticians, who leave to others the details of practice. It is a well-known fact that the disease popularly known as consumption may, if discovered in time, be arrested, if not entirely eradicated from the system, by open air treatment in the proper climate, and that in such cases use of drugs has been practically given up. Would the physician, in such a case, who by his skill discovered the incipient disease, advised the open air treatment, and refrained from administering drugs, not to be practising medicine? It may be difficult by a precise definition to draw the line between where nursing ends and the practice of medicine begins, and the Court should not attempt, in construing this statute, to lay down in any case a hard-and-fast rule upon the subject, as the courts have never undertaken to mark the limits of the police power of the State or to have precisely defined what constitutes fraud. What the courts have done is to say that given legislation was or was not within the limits of the police power, or that certain actions were or were not fraudulent."

The appellant had relied upon the case of Smith *vs.* Lane, which was an action brought to recover a sum which it was alleged the defendant had agreed to pay the plaintiff for treatment of certain bodily disabilities by means of manipulation. The referee dismissed the complaint because the plaintiff was unauthorized to practise medicine or surgery. The case was appealed and the judgment was reversed, Justice Daniels holding that what the man did in no just sense constituted the practice of either medicine or surgery. This was, however, a private contract to perform certain services for a certain sum, and the public was not represented, and Justice Clarke was of the opinion, based upon the general current of the authorities throughout the country, and upon an examination of the history and growth of our own public health statutes, that the rule as claimed to have been laid down in Smith *vs.* Lane could not here apply.

"When we find," he concluded, "as in this case, a defendant holding himself out by sign and card as a doctor, with office hours, who talks of his patients and gives treatments, who makes a diagnosis and prescribes diet and conduct and remedies, simple though they be, and who asserts the power to cure all diseases that any physician can cure without drugs, and also diseases that they cannot cure with drugs, and who takes payment for a consultation wherein there was an examination and determination of the trouble—that is, a diagnosis—as well as payment for subsequent treatment, even if no drugs are administered, we must hold that he comes within the purview of the State prohibiting the practice of medicine without being lawfully authorized and registered."

The importance of this opinion is greater than may be apparent to those who do not know the difficulty that is often encountered in securing the conviction of an illegal practitioner through the absence of any judicial definition of what constitutes the practice of medicine and surgery. Mr. Champe S. Andrews, counsel to the Medical Society of the County of New York, has for years been trying to get some court of record to define the practice of medicine. Though there have been a number of appeals to the Appellate Division, the question was never squarely raised there until the present case. This opinion at last substantially establishes such a definition, which will do more to help the County Society in its war against irregular practice and quackery than can readily be imagined.

THE MANNER IN WHICH TUBERCULOUS INFECTION OF THE LUNG TAKES PLACE.

The question of why the pulmonary apices should form sites of predilection for the growth of the tubercle bacillus has given rise to much controversial writing and many observers have endeavored to furnish a plausible explanation of this clinical fact. There are weak places in most of the hypotheses that have been suggested, however, or at least no one of them has seemed sufficiently well grounded to justify its universal acceptance. This is perhaps in some measure due to the fact that it is still by no means settled in just what way the infection of the lung takes place, for all the possible avenues through which invading organisms can be conceived of as approaching the lung have been championed by different investigators who have each been able to advance arguments of more or less validity in favor of their views. Most of the current theories are subjected to a critical analysis by Tendeloo of Leyden (*Münchener medizinische Wochenschrift*, January 15, 1907), who rejects the hematogenous theory, the theory that tubercle bacilli become entangled in the nasal passages, are swallowed with the nasal mucus and then find their way to the lungs via the mesenteric lymph nodes, the belief that infection of the lung may occur through the cervical lymphatics, etc., and adheres to the older view that the infection is, in most cases, excluding general miliary infections, the result of the deposition in the lung of tubercle bacilli taken in with the inspired air.

The special proneness of the upper and posterior portions of the lung to form the starting points of the tuberculous process is explained by considering the fate of the pigment particles that are constantly being inhaled and that are found in such large quantities deposited in the lungs of all

city dwellers. The pigmentation is most pronounced in the upper and posterior parts of the lung, and this is because in these regions the lymphatic stream whose function it is to carry away the foreign particles is most sluggish. The slowness of the current is largely dependent on the fact that in this part of the lung there is least respiratory activity and consequently the conditions are not favorable to the movement of the lymph through its channels. For this reason any tubercle bacilli which have entered the lung and are being swept on by the lymphatic stream in attempt to prevent infection are likely to become arrested at these points and be enabled to proliferate. This is all the more likely to be the case because it has been shown that tubercle bacilli do not grow well in a moving current of broth. The reduced respiratory activity in and near the apices also encourages the deposition in these situations of tubercle bacilli that may have been borne in by the inspired air, and it is to the author's belief that primary pulmonary tuberculosis is usually the result of an aërolymphogenous infection.

This is merely the outline of Tendeloo's very detailed dissertation, and while perhaps it presents nothing actually new to most readers, it is interesting because it forms a comprehensive and critical survey of much of the modern work in this highly important field. In connection with Tendeloo's statements in regard to the pigment deposits one is reminded of the importance that has been ascribed by Hodenpyl, and more lately by Ribbert, to these same lesions.

SUBGLOTTIC LARYNGOSCOPY.

Attempts have not been wanting to perfect the technique of laryngoscopic examination in one respect in which it has always been deficient. The ordinary mirror affords a satisfactory view of the parts above the glottis and of a small portion of the beginning of the trachea, but the lower surface of the vocal cords and the parts immediately adjoining have been inaccessible to the eye of the examiner. Several instruments have been designed to overcome this deficiency in the armamentarium of the laryngologist, notably by Rosenberg, Mermod, and Kuile, but apparently their apparatus has been lacking in either simplicity or ease of operation, so that their methods have not come into any great popularity. Gerber, however, has devised an intralaryngeal mirror which seems to promise better things. In its perfected form (*Monatschrift für Ohrenheilkunde*, 1906, No. 10) it consists of an oval mirror measuring 10 mm. in its longest diameter, affixed to a handle having the form customary to instruments intended for intralaryngeal use. The mirror is so arranged that it is introduced between the well-cocainized vocal cords in the vertical position and can then be made to assume a position more or less nearly approaching the horizontal by means of a suitable mechanism. The image formed in this small mirror is viewed in the ordinary laryngoscopic mirror.

Gerber has reported only one case in which information was obtained by means of the new instrument which could not have been secured in any other way, but this is perhaps owing to the infrequency of suitable cases rather than to any inadequacy of the method. The patient in point was a man suffering from hemoptysis, the cause of which remained a mystery until by means of the subglottic laryngoscope a varicosity, which by repeated ruptures had given rise to the hemorrhages, was discovered on the under surface of the right vocal cord. The same procedure has been successfully applied by Max Senator, who in the *Berliner klinische Wochenschrift*, January 21, 1907, describes the case of a tenor of considerable reputation, whose vocalization had become seriously impaired through lack of purity in the upper register, particularly in the falsetto notes. The ordinary laryngoscopic examination revealed a very slight thickening of the edge of one vocal cord, but it was not until an examination had been made with the subglottic laryngoscope that it was discovered that the source of this thickening was a minute new growth surrounded with dilated blood-vessels situated on the under surface of the vocal cord. The growth was successfully removed by cauterization and the singer's voice restored to its former quality. Although, no doubt, the experienced laryngologist can in most cases dispense with the use of a second mirror of this sort—and the technical difficulties in its use will probably restrict the subglottic laryngoscope to the hands of only the most expert—in exceptional instances such as those recorded it is quite conceivable that the instrument should prove of much practical utility.

Nonsurgical Treatment of Appendicitis.

In view of the almost universally accepted dictum that appendicitis is from the beginning a surgical disease, and that the time to operate is immediately, it is not without interest to read a communication from a clinician who takes the opposite standpoint, and is able to justify his position with statistics. Pfister, in the *Deutsche medizinische Wochenschrift*, January 10, 1907, deprecates early operation in the average case, and gives a résumé of seventy cases treated expectantly in the medical department of the University Hospital at Heidelberg during the past two years, in order to illustrate the safety of this plan. The seventy cases included thirty of slight severity, twenty-five of medium gravity, and fifteen serious cases. In this series all the patients were discharged free from symptoms, except one, who died after transfer to the surgical side, though, as there was delay in operating after the transfer had been made, this death cannot be charged to the medical treatment. Four other patients were transferred to the surgical service and operated on, but the remainder recovered under purely medical treatment. The author's position is that all cases of appendicitis that do not from the first create an impression of great severity should be treated with opium and the ice bag, though, of course, if beginning peritonitis or perforation is suspected immediate operation is required. Otherwise, surgery should be resorted to only if the condition is distinctly becoming aggravated, or if recovery is slow and there is delay in the absorption of the exudate or persistent pain. If attacks recur the interval operation is to be recommended. If it were likely that Pfister's statistics could be duplicated regularly there would be little ground for criticism of his recommendations, but if the history of appendicitis has taught any one thing with especial insistence, it

is that the disease is essentially a treacherous one, prone to abrupt changes for the worse, and oftentimes manifesting lesions out of all proportion to the symptoms or physical signs. It typifies to the extreme the Hippocratic apothegm that experience is fallacious and judgment difficult, and until more accurate means of diagnosis shall have been evolved we believe that all surgeons and most medical men will concur in advising early operation.

Pancreatic Diabetes due to Autoinfection.

The pathology of the pancreas has especially in late years interested various observers. Among the recent writers and investigators on this subject are Lancereaux, Gellé, Oser, and Opie. No one disputes at the present day the frequency and importance of pancreatic lesions in diabetes. A. Gilbert and P. Lereboullet in the *Revue de Médecine* of November 10, 1906, present an interesting contribution to the study of pancreatic diabetes due to autoinfection. The nature of these lesions, say these writers, has been clearly determined, thanks to the knowledge of the structure of the pancreas; and a particular significance is attributed to the alterations in the islands of Langerhans which are regarded by some authorities as the agents of the internal secretions of this organ. Gilbert and Lereboullet, from the numerous anatomical and clinical facts which they have observed during their study of this subject, are impressed with the great importance of the alteration of the pancreas. They believe that diabetes when it is not severe, and when it shows the characteristics of that form of diabetes called by the French "arthritic" is often of pancreatic origin. The pancreatic change consists of a sclerosis, inter- and intraacinous, which ordinarily but not constantly or exclusively attacks the islands of Langerhans. If the characteristics of this pancreatic sclerosis are analyzed it is often observed that there exists a sclerosis of canalicular origin due to an ascending infection. The infection appears to be a primary autoinfection, the development of which is explained by the predisposition of the patients to digestive autoinfections. The proof of this predisposition is found in their personal and family antecedents and in the anatomical study of the various digestive organs which show the lesions of canalicular inflammation. The lesions of autoinfection of the pancreas produce effects only when the gland is involved seriously. This explains why diabetes appears frequently only at an advanced age. Diabetes results in these cases from a hyperfunctioning of the liver. Inversely one can conceive theoretically of a diabetes due to hepatic insufficiency consecutive to hyperfunctioning of the pancreas.

The Specific Gravity of Urine.

In a recent letter to the *Lancet* (January 26) Dr. A. W. Brand calls attention to the fact that the specific gravity of the urine varies greatly with its temperature. He notes that probably in the great majority of cases specimens of urine are examined when it has become cooled—*i.e.* when it is at the temperature of the surrounding air, since these specimens generally reach one in bottles which are allowed to stand some little time—but he has frequently had occasion to examine urine which has been freshly passed, notably in cases of examination for life insurance, when it is voided at the time of examination. He has often been struck with the low gravity of such freshly passed urine in many cases of young and healthy lives and has been disposed to attribute it to the influence of the ingestion of fluid previous to the examination. On one occasion, lately, a specimen showing a specific gravity of 1015, when freshly passed, was left standing over night, with the urinometer *in situ*. On looking at it next day, before emptying the test glass, he was surprised to find the specific gravity to be 1020, thus showing a rise of five points. His attention being thus directed to this discrepancy, he made a series of observations, noting the temperature and specific gravity of the urine when it was freshly passed, and later when it had cooled down to the temperature of his surgery. As a result he found that the specific gravity of urine varies inversely with the temperature and that it rises, on an average, one point for every fall of eight degrees of temperature. He says he has found no allusion to this in any text-book of physiology or clinical medicine, and he considers the recognition of the fact is of importance. Urine which at 60° F. shows a specific gravity of 1020, will at 96° show one of only 1015.

News of the Week.

Public Lectures on Insanity.—Dr. C. L. Dana will deliver the third of the series of public lectures on the above topic, arranged for by the Psychiatrical Society, at the Academy of Medicine, 17 West Forty-third street, on Saturday, February 16, at 8:30 P.M. The subject will be: "The Facts of Heredity and Their Relation to Mental Disorders." These lectures are intended to place before the medical profession and the general public facts with regard to mental disorders which indicate the possibility and duty of initiating a wide movement towards general preventive measures.

Report of the State Board of Charities.—The report of the State Board of Charities shows that in 1906 the State appropriated $1,945,089.27 for the charitable institutions, of which amount $1,347,271.32 was for maintenance and $428,375 for extraordinary expenses. It recommends for 1907 that the Legislature appropriate for maintenance $1,415,000 and for new buildings and improvements $467,920. There were 30,618 dependent children remaining in institutions at the close of the fiscal year, an increase of 371. During the year 18,119 had been discharged. During the last ten years the number of institutions for dependent children has remained practically the same, but the population has slowly increased from 27,769 in 1896 to 30,618 in 1906. The larger proportion of these children are in institutions in and about New York City, all under private control. There were 7,753 inmates in the alsmhouses of the State at the close of the fiscal year, and the number seems to be increasing. Among the recommendations the board advises the establishment in the eastern part of the State of a custodial asylum for demented epileptics and feeble-minded persons who cannot be properly cared for in the existing institutions, and of a hospital pavilion for the Soldiers and Sailors' Home.

Report on Milk Supplies.—A committee of five of the New York Association for Improving the Condition of the Poor, having Dr. R. G. Freeman as its chairman, has issued a report on the milk supply question in this city. In it the importance of inspection of dairies and creameries is upheld, and it is stated that eighty more inspectors are needed to do the work for this city. The conditions under which the milk should be produced and

handled are detailed and it is emphasized that inspection must then follow the milk every step of the way to the consumer, protecting it from contamination and never permitting its temperature to rise at any stage above 50° Fahrenheit. The expression was unanimous that nothing can render such inspection unnecessary or reduce its importance. The establishment of infants' milk depots is considered of prime importance. The committee declares for a campaign of education on the value of protecting milk and favors legislation regulating its sale. A milk committee of thirty-eight members has been appointed to continue the efforts to improve the quality of the city's milk.

Control of Tuberculosis.—In the report of the subcommittee of the Charity Organization Society appointed to consider the tuberculosis question in this city it is estimated that the number of tuberculosis cases in Manhattan in 1910 will be 19,596 and that dispensary provision should be made for 4,626 of these. It is also estimated that for the treatment of the tuberculous poor 2,734 hospital beds will be required and that the cost of maintaining the system of dispensaries and the hospitals will be $1,269,400. The report states that the treatment of the tuberculous poor of the city is being carried on by three city departments, each acting independently of the other, and that there are five public and four private special dispensaries giving treatment. The committee suggests a plan for the centralization of the efforts to combat the disease. This plan calls for the establishment of fifteen dispensaries and for a central distributing tuberculosis hospital, on the river front on the Bellevue Hospital grounds. It is recommended that a special Board of Tuberculosis Hospitals be formed to consist of the Commissioner of Charities, the president of the Bellevue and Allied Hospitals Board and the Commissioner, or the chief medical officer, of the Board of Health, which shall have entire supervision of the management of the central hospital and dispensaries.

New Bellevue Hospital Plans Filed.—Plans for the six-story and basement pathological building which is to form the northwestern section of the new Bellevue Hospital have been filed by the architects, McKim, Mead and White. The pathological building is to cost $800,000 and will have a frontage of 142 feet and a depth of 120 feet, with a main entrance facing the south. The building is to be of ornamental brick, with a base of granite and trimmings of limestone. The second story will contain the pathological museum and a series of autopsy chambers. The third and fourth stories will be fitted with laboratories, the fifth will contain the library, and on the sixth will be special laboratories for bacteriological experiments and special photography work. On the roof will be the animal operating room and three rooms for the observation of inoculated animals. Each of the five upper floors will also contain dormitories for the hospital attachés of the various departments.

Osteopathy Bill.—The osteopathy bill now before the Legislature differs in some respects from those that have been previously presented. It creates a board of osteopathic examiners under the public health law, the provisions following those of the State medical examining boards, excepting those referring to materia medica and therapeutics, and substituting the theory of osteopathy and its practice. Provision is made for the appointment of the osteopathic examining board by the Regents, and all osteopathic schools are to be under the regulation of the Regents. Dr. Arthur S. Root and Albert Vandeveer of Albany have appeared before the Senate and Assembly committees on public health in order to oppose the passage of the bill.

Legislation in Pharmaceutical Matters.—Representatives from pharmaceutical organizations and schools of the State are in Albany for the purpose of discussing the pending pure food legislation. They will vigorously support the measure regulating the sale of cocaine in any form or compound, and have also decided to take steps to include in one measure all the bills affecting pharmacy before the Legislature and to make this measure conform to the national pure food law.

New York State Child Labor Bill Passed.—The Senate has passed Senator Page's bill carrying out Governor Hughes' recommendation that children employed in factories should have an eight-hour workday. The bill provides that no minor under sixteen years of age be employed, permitted, or suffered to work in any factory before 8 o'clock in the morning or after 5 o'clock in the afternoon of any day, or for more than eight hours in any one day.

For State Ice Inspection.—Dr. E. H. Porter, State Health Commissioner, has sent to the Legislature a request for a larger appropriation than the $57,000 the department received last year, in order that a systematic inspection of the ice fields on the Hudson and in the Adirondacks may be instituted. The present resources of the department do not permit the proper safeguarding of the ice supplies.

Pure Food and Drug Bill for Illinois.—In the lower house of the Illinois Legislature Representative Lindly has introduced a pure food bill at the instance of Pure Food Commissioner Hanby Jones. The bill covers both food and dairy products, and proposes in some cases stricter regulation of food stuffs than is attempted in the national pure food bill, which it proposes to supplement by giving State application. It provides an annual appropriation of $125,000 for the enforcement of the law. The standard of purity for drugs is that adopted by the United States Department of Agriculture, and it is stipulated that where no standard has been adopted by that department, then the standard shall be that given in the last edition of the United States Dispensatory. Definitions of adulteration and misbranding follow closely the requirements of the national act, and explicit restrictions are made in the use of drugs in the manufacture of liquors.

The Oak Park (Ill.) Hospital and Training School for Nurses is said to be the most complete institution of its kind in Illinois. It will be dedicated in March. The structure will have a capacity of sixty patients. Ready for occupancy the building will have cost $150,000. The operating rooms are two in number and are lighted by large north windows and skylights. The floors are of white tile and the walls are wainscoted with heavy white plate glass to a height of seven feet. The hospital grounds contain one acre, the money for which was raised by Dr. J. W. Tope of Oak Park. About $5,000 additional for the equipment of the surgical department was secured by the physicians of the staff. The balance of the construction fund was supplied by the Sisters of Misericordia.

Infectious Diseases in Chicago.—The Chief Medical Inspector of Chicago, Dr. Heman Spalding, reports that "during the week 292 cases of diphtheria were reported to the Department of Health, being six fewer than were reported the

previous week. In the same time 1,080 cases of scarlet fever were reported—an increase of 681 cases over the preceding week, and 190 cases of measles were reported—an increase of fifty-one. The 350 newly appointed medical inspectors in their visits to schools have uncovered a large number of cases unattended by physicians and unreported to the department. In numerous instances they have found children in school recovered from a mild attack of scarlet fever and still in an infectious condition. Numerous instances were found in which children were in school coming from a house where a mild case of scarlet fever existed unattended by a physician. The finance committee has recommended the erection of a municipal hospital for infectious diseases. This hospital is an absolute necessity, and the lack of it has long been a reproach to the city."

A Testimonial to Dr. Pardee.—The Alameda County (Cal.) Medical Society, on January 28, tendered a banquet to ex-Governor Dr. George C. Pardee, one of its members, to commemorate his return from official life to the profession. About fifty members of the society were present. Dr. D. Crosby, president of the society, served as toastmaster, and Dr. Charles A. Dukes, the treasurer, as chairman of the committee of arrangements. Responses were made by Drs. Hubert N. Rowell, D. D. Crowley, George C. Pardee, N. K. Foster, Secretary of the State Board of Health, Frank Adams, and J. Maher. After the banquet a general reception was held, in which many others came to renew old friendships and to express appreciation of Dr. Pardee's faithfulness to his profession while serving the State.

Paths and By-Paths in California.—The naturopaths, the osteopaths, and even those of the "straight and narrow" path are besieging the State Legislature for more law. They want recognition as distinct schools of practice. The law recognizing osteopathy was recently declared to be unconstitutional. The State Board of Medical Examiners, it is understood, is preparing a bill which, if made law, will admit to it an osteopath and do away with the examination in materia medica and therapeutics. The members of all schools will then be required to pass the same examination in anatomy, chemistry, physiology, bacteriology, pathology, toxicology, surgery, obstetrics, and probably other branches.

Antivaccination in California.—Now that a layman has become Governor of the State, the antivaccinationists are making strenuous efforts to have the law repealed which requires all school children to undergo vaccination. Two years ago they were successful in having a bill pass the Legislature, but met with defeat at the hands of the Governor, Dr. George C. Pardee, who could not conscientiously attach his signature.

Bequest to the Pasteur Institute.—It is announced that the Pasteur Institute of Paris is to receive the sum of $5,000,000 bequeathed to it by the will of the late Daniel Osiris. In addition to other public benefactions, Mr. Osiris in 1899 presented to the Institute of France a sum representing an annual income of about $6,500 for a triennial prize of $20,000, open to citizens of all countries, for the most remarkable work or discovery of general interest, especially in the fields of surgery and medicine.

A Monument to Theodor Schwann.—On December 7, 1910, a century will have elapsed since the founder of the cellular theory was born at Neuss on the Rhine. His native town has decided to honor his memory by the erection of a monument to be unveiled on that day with suitable ceremonies. The medical profession is under a deep obligation to this investigator, who laid the foundations on which our present concepts of disease are so largely based, for he was a worker no less successful than indefatigable in the domains of histology, physiology and biology; an authority on the processes of fermentation, decomposition, spontaneous generation, and digestion, and last, not least, the discoverer of pepsin. His master, Johannes Müller, and his collaborator, Schleiden, have lately been honored by the erection of statues in Coblentz and Jena, respectively, and the members of the medical profession are invited to contribute to this memorial to Schwann. Communications are to be addressed to: Schwanndenkmal Städtische Sparkasse, Neuss am Rhein, Germany.

Health Conditions in Panama.—The report of Col. W. C. Gorgas for the month of December has been made public by the Isthmian Canal Commission and shows that health conditions continue excellent in the canal zone. In the total force of 8,200 whites there were eight deaths, giving a rate for the year of eleven per thousand. Of these whites 6,000 are Americans. Among these Americans there were no deaths from disease. There are 800 American women and children, the families of these 6,000 employees, and among them there was no death from any cause. The death rate among the general population has also been satisfactory. In the town of Colon in November there were 77 deaths, in December 48. The sick rate among the employees was about what it was in the previous month, thirty per thousand. During the month no quarantinable disease of any kind was reported.

Warning Against the Dangers of Spitting.—The school children of Brooklyn have been provided by the Board of Education with Board of Health circulars setting forth the dangers of spitting in public places. The circular is printed on gummed paper, so that it may be posted inside the back cover of the school books.

Cigarette Smoking by Youths.—The Illinois Senate has passed a bill prohibiting persons under eighteen years of age, pupils in schools, and students in universities from smoking cigarettes in any public place.

Grip is reported to be so common in Paris that the postal authorities have issued a notice that certain deliveries of mails have been suspended owing to the prevalence of the disease among the postmen.

Prof. Behring of Marburg has issued an open letter to the press in which he indignantly denies the reports that he is suffering from insanity, or is on the verge of a mental breakdown, and charges that the reports were fabricated by his personal enemies with the object of injuring him.

Medical Men Popular in Germany.—A popular newspaper vote taken in Germany on the twelve greatest Germans now living accorded to Dr. Robert Koch, Professor Ernst Haeckel, Professor Konrad Röntgen and Professor Ernst von Behring, respectively, the third, fourth, fifth and eleventh positions in this list.

Dr. Alvah H. Doty has been reappointed as Health Officer of the Port of New York, a post he has held since 1895.

Dr. W. Freudenthal, of this city, requests us to add to the report of the meeting of the Section on Public Health of the Academy of Medicine, published in the MEDICAL RECORD of February 2, that he also participated in the discussion pertaining to the health of New York City.

Fasting for Pleasure and Profit.—What is asserted to be the world's record for fasting has been made by Sacco, the Hungarian professional faster, who has completed an exhibition test in London lasting forty-six days and four hours. His wish to continue and complete a period of fifty days could not be carried out on account of extreme weakness. The newspapers also report the voluntary fast of a Toledo, O., physician, who is stated to have taken no food and no liquid but water during thirty-four days.

St. Gregory's Hospital.—The State Board of Charities has granted a charter to St. Gregory's Hospital on Gold street, which was taken over several months ago by the Volunteers of America and is now managed by that organization. An application will now be made to the police to set aside a separate ambulance district for the hospital.

Beth Israel Hospital has received the sum of $21,000 contributed by guests at a recent dinner given by the directors and medical staff in honor of the president of the hospital, Joseph H. Cohen.

Bequests.—By the will of Lady Martha E. Kortright, who died recently at Florence, Italy, personal property valued at $100,000 is to be divided equally among the following beneficiaries: Presbyterian Hospital of Philadelphia, Board of Education of the Presbyterian Church in the United States, Presbyterian Board of Relief for Disabled Ministers and Orphans of Deceased Ministers, and the Board of Home Missions of the Presbyterian Church in the United States.

International Congress on School Hygiene.—The preliminary program of the second International Congress on School Hygiene, to be held on August 5-10, 1907, at the University of London, South Kensington, has been issued. The work of the Congress will be divided into eleven sections, each presided over by an authority on the subject dealt with. The president of the Congress is Sir Lauder Brunton, F.R.S., and the secretaries are Dr. James Kerr and Mr. E. White Wallis.

Republican Valley (Neb.) Medical Association.—Officers were elected as follows at the recent meeting of this society: *President*, Dr. Cone, Oxford; *Vice-President*, Dr. Sherick, Bertrand; *Secretary*, Dr. Campbell, Stamford; *Treasurer*, Dr. Sunbury, Holdrege.

Medford (Mass.) Medical Association.—The following are the recently elected officers of this organization: *President*, Dr. J. Walter Bean; *Vice-President*, Dr. Norman F. Chandler; *Secretary and Treasurer*, Dr. Frank S. Smith.

Obituary Notes.—Dr. Robert T. Wood of Paris, Ky., died on January 26 at the age of fifty-four years. He had been in poor health for some time, but had lately been able to resume his practice and his death was unexpected. He was a graduate of the Ohio Medical College and had practised in Paris since 1881.

Dr. George H. Thoma of Reno, Nev., died of cerebrospinal meningitis on February 1 at the age of sixty-five years. Dr. Thoma was a native of Montgomery county, N. Y., and studied medicine in the Albany Medical College. He served as assistant surgeon through the Civil War. He settled in Austin, Nev., in 1867, and twenty years later removed to Reno, where he had practised ever since.

Dr. O. M. Sheridan of Roxbury, Mass., died on February 2 at the age of forty-three years. He was born in Randolph and was graduated from Boston college in 1885. Three years later he received his medical degree from the New York University Medical School.

Dr. R. P. Comfort of Nashville, Mich., died on January 27 at the age of fifty-nine years. Dr. Comfort was born at Moscow, Mich., and received his degree from the Michigan University Medical School. He had practised at McBrides, Mason and Hudson, and for the past fifteen years in Nashville.

Dr. August L. Justice of El Paso, Tex., died on January 30 at the age of sixty-six years. He was born in Virginia and after serving in the Civil War studied medicine in Rush Medical College, Chicago. After practising for some time in Denver and Santa Barbara, he finally settled in El Paso in 1881.

Dr. David A. Collins of Roxbury, Mass., died on February 5 at the age of forty-four years. He was graduated from Holy Cross College in 1882 and four years later received his medical degree from the Harvard Medical School. He had practised in Roxbury for over ten years and was medical supervisor of the Eliot School District.

Dr. A. C. Sinclair, formerly of Winnipeg, died on January 23 at Colborn, Ont. Dr. Sinclair was born in Glengarry county seventy-seven years ago and had practised in Toronto, Winnipeg, and Rossland, B. C.

Dr. William J. Chappell of Baltimore died suddenly on February 7 at the age of forty-nine years. Dr. Chappell was graduated from a Baltimore medical college in 1884 and had practised in that city ever since.

Dr. Everett H. Merwin of Kansas City, Mo., died suddenly on February 9 at the age of thirty-eight years. Dr. Merwin received his medical education in London and had spent several years on British steamships as surgeon. He was treasurer of the Kansas City Homeopathic College.

Dr. Wm. C. Pickett, Professor of Diseases of the Mind and Nervous System in the Medico-Chirurgical College, died at Aldan, Delaware county, Pa., on February 6 at the age of thirty-eight years. He was born in Meadville, Pa., and was graduated from Jefferson Medical College in the class of 1889. He was successively surgeon to the schoolship *Saratoga*, resident physician in the Philadelphia General Hospital, resident physician in the Insane Department of the Philadelphia Hospital, demonstrator of neurology in Jefferson Medical College, and visiting neurologist to the Philadelphia Hospital.

Dr. Franklin Wheeler of Farmington, Conn., died on February 10, aged eighty years. He had been physician at the Porter School in Farmington for over forty years.

Correspondence.

A SINGLE EXAMINING BOARD FOR NEW YORK STATE.

To the Editor of the Medical Record:

Sir:—Year after year the medical profession of New York has been called upon to oppose the passage of laws creating State Examining Boards in osteopathy, dermapathy, optometry, and so on. Year after year we have succeeded in convincing the legislature that the passage of such laws would be unwise; but in answer to the inquiries of Senators and Assemblymen, "what are you going to do with these people who besiege us each year?" we have answered: "Let them comply with the present law and then practise any method they choose." Then has come the second prtinent query: "The homeopaths have a separate board, why should not the osteopaths be granted the same privilege, if they will comply with all the requirements excepting treatment?" As the result of all this

a bill has been drawn up, which is indorsed by the State Department of Education and many leading members of the legislature, accurately defining the practice of medicine and providing for a single examining board, before which all who desire to practise the healing art must come and pass a common examination, eliminating the subject of practice, assuming that all who have the other necessary qualifications will be able to practise intelligently the method which seems to be indicated in the cases they meet.

It is not expected that the enactment of this law is going to bring about an immediate leveling of all the barriers now existing between "allopathic," homeopathic, and other "pathic" physicians, although doubtless that will be the ultimate result. Nor will it prevent the demands in the future of peculiar classes desiring separate recognition for commercial and other reasons. It will, however, place the legislature in a position to say, when future efforts to secure class legislation along medical lines are made, that the State of New York recognizes only the ordinary educated physician, and the method of practice is something the individual physician must determine for himself. It will place medical practice in a higher plane than has heretofore been accorded it, and will accomplish what our present law was designed to do, and has failed to do, namely, properly protect the people of the State of New York from incompetent physicians.

Will you please request your readers to write their representatives in the Legislature at once urging the defeat of osteopathy, optometry, and all similar bills, and the passage of the single board bill, which is Senate Bill No. 154; Assembly Bill No. 160, and to use these numbers when writing.

FRANK VAN FLEET, M.D.

Chairman Committee on Legislation of the Medical Society of the County of New York.

HEADACHE AND EYESTRAIN.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—An article under the above caption by Dr. George M. Gould, in the *Journal of the American Medical Association* of November 10, 1906, caught my eye, and greatly impressed me. I was struck by his indictment of the profession for the "narcotism," as he styled it, of its members. What attracted me most forcibly was his statement that ophthalmic specialists denied the effect of eyestrain in causing headaches and other bad consequences. The general practitioner might be excused for a certain degree of ignorance of such results of defective vision, for he usually has no means of ascertaining or measuring it, nor would he know how if he had. But that specialists generally should scout so evident a fact seems to me extraordinary. That eyestrain causes headaches is well known to even many of the laity, for they have the knowledge based on personal experience, having proved the pudding by the eating of it. Their acquaintances are told of it, and believe it. Many of them, in turn, go to the optician for relief—and get it. So much the worse for the doctor who is ignorant or prejudiced.

"Are our eyes getting worse?" is the query heard from many in view of the increasing prevalence of spectacles. By no means. As evolutionists we must believe that they are gradually growing better in each succeeding generation. Why, then, so many eyeglasses or spectacles? Merely because there are so many defective eyes. Nor are these statements irreconcilable. We use the eyes more now than formerly in a way to bring out their defects. The illiterate day laborer usually is without glasses until he becomes a marked presbyope quite late in life—at least late for his class, for they age sooner than do those more favored by occupation and environment. If he learns to read and write, and scans the paper daily, he wears glasses sooner. The illiterate woman likewise first wears glasses for presbyopia late in life unless she darns socks, sews, or does other near work requiring distinct vision, in which event she begins the use of them earlier. A fine sieve is not needed to screen coarse coal. Even a perfect eye requires aid when the object to be seen is very minute. Hence the microscope. Who could do without its aid to see the minute world it reveals? Are our eyes degenerating on that account? It is a question of degree on the one hand, and of defects on the other. A bundle of mail, such as is usually handled by letter-carriers, is not very heavy for the ordinary man, but it feels heavier the longer it is borne. These men are not losing strength because they avail themselves of a bag slung over the shoulder to ease the burden. Nor is civilized man becoming weaker because he uses a chair with a back against which he can comfortably lean, rather than sit on an old-style four-legged stool without this restful addition.

Considerable derision first met the systematic examination of the eyes of school-children, and even of many corporation employes. Yet no one realizes better than the child with its first set of glasses how it eases the work and brightens the world. I am not an ophthalmologist, but a general practitioner. Nevertheless, I do look into eyes that seem to me to need it, and I test them for errors of refraction, and I prescribe glasses when satisfied that I know what I am doing. When in doubt, I send them to the specialist. Many a child has been made happier by me for detecting and correcting defective vision. An occasional dunce in school is so because he cannot see his work on either the blackboard or desk. How can he become interested or learn under the circumstances except by the little that filters in through the unusual channel of the ears?

Why do school-children find glasses so useful only to discard them after leaving school? Simply because they have greater need for them while studying. The younger the child, the more does its greater illiteracy require visual accuracy to distinguish the separate letters of each word, which it can identify and pronounce only after analysis into its component parts. As its familiarity with smaller words grows, larger ones are continually being learned while the memory gradually acquires a hold upon the smaller and earlier learned word forms. As the child progresses in its studies, it reads more, then begins to write and to manipulate figures. Arithmetic is a greater strain than reading, because each figure must be carefully noted. Penmanship is also a strain upon the eyes. When the pupil is far enough advanced to read by word forms and write automatically, the lessons at school and the home work in reading, figuring, and composition keep up an increased demand upon the muscles of accommodation, so that it is a wonder that even a perfectly normal eye does not tire and make itself known in some disagreeable way. Add to all this required strain the reading of books and of newspapers, and the wonder is that so many get along as well as they do without glasses.

So much for the simple defects of vision that are correctable by the accommodation, vision equally deficient in all meridians. The muscles make a successful effort, being rewarded by corresponding easement and clearness of vision. When, however, the defect is meridianal, efforts at accommodation aggravate the trouble, for the correction of the defect produces a corresponding disturbance of the opposite meridian. If there is relaxation, the original trouble reappears. Thus may the accommodation find itself seesawing back and forth betwixt the devil and the deep sea, or the proverbial two horns of a dilemma, every effort worse than useless, for the muscles become tired, the vision remains defective, and annoying reflexes follow. Eye quacks are reaping a harvest, and the general practitioner loses his opportunity because of failure to recognize these facts and act accordingly.

I would advise all physicians to get some good book on the eye, and then a set of test lenses and cards, an ophthalmoscope, and a retinoscope. They should carefully read the book, especially the part explaining the physics of refraction, before going further into the subject. Then practical instruction should be sought in the use of these implements, if only for a week. Work should be done under a mydriatic of short effect. To attempt this kind of work without it is folly except for the expert.

A patient never comes to me complaining of habitual headache (man, woman, or child) without a prompt inquiry into the ocular sufficiency. It is the rule to find refractive defects that are proven the cause of the trouble because of its prompt disappearance upon the use of suitable glasses. I could turn to my histories and cite scores upon scores of cases, but the list would be monotonous and a waste of space. To the doubter I simply say, examine your patients and see for yourself. If you cannot do it, have it done. I examine the urine of most patients, especially in subacute and chronic cases, no matter what the symptoms. Not to do so is to my mind as negligent as it would be not to look at the tongue, or feel the pulse, or ask about the appetite, or the character and frequency of the stools. Likewise should the eye be ever under suspicion.

But it must not be supposed that headaches due to eyestrain are located only at the eyebrows, as pictured in Butler's book on diagnosis. Eyestrain headache may exist in any part of the head. Nor is it noticeable, necessarily, at any particular time. The man who thinks it comes only after reading or in the latter part of the day, will overlook many cases, and some of them the most interesting, instructive, and thought-engendering. The practice of medicine is indeed a science as well as an art when one can reason back from effect to cause as unerringly as is possible in this class of patients. I have metaphorically gripped the malefactor in these obscure eyestrain cases after diligent search with as much gusto as Sherlock Holmes was ever portrayed by his creator as feeling when he caught his quarry, and with the same self-satisfaction for work well done and amply repaid.

Eyestrain may cause other than head pain. It may give rise to a diversity of symptoms, of which nausea is quite a common one. Then there is the head tilting due to un-

suspected peculiar monocular vision that persists until the spine is correspondingly twisted. Dr. Gould has said this, and has been laughed at for this one of his many keen analyses of eyestrain effects. Nausea may grow to emesis, this to malnutrition, and that to anemia and other ills that I confess myself reluctant to enumerate lest the little I have said be wholly discredited.

Mental irritability is quite a common accompaniment of eyestrain. So also, very naturally, is a disinclination to read, to study, to visit the theater, or to attend other public functions, for all may be a visual strain that causes unpleasant effects decidedly felt but not interpreted. Spectacles thus sometimes alter the habits of years. I have seen it, not once, but many times. What the ultimate effect of such relief may be upon the patient and those with whom he associates can be imagined, for even associations may be entirely changed.

It has often occurred to me that many men become therapeutic nihilists by seeing deep enough to realize that their drugging is on wrong lines, but not so deep as to see the simple cause of which the removal would result in prompt cure, even as Dr. Gould has cured a crooked back with the use of suitable spectacles. By the detection of eyestrain effects it is at times possible to achieve a well-merited reputation for acumen, sagacity, and good judgment. Pains, headaches, nausea, dyspepsia, irritability, insomnia, anorexia, mental sluggishness, and a host of other complaints have repeatedly yielded in my experience to suitable glasses after other efforts at relief by preceding consultants had failed. To all who doubt and are unable to make a proper examination of the eye, I would suggest sending persistent headache cases to an ophthalmologist for examination.

A. H. P. Leuf, M.D.

116 South Eighteenth Street, Philadelphia.

TREATMENT OF ACUTE SEPTIC PERFORATIVE PERITONITIS.

To the Editor of the Medical Record:

Sir:—In a communication to the Medical Record, January 12, 1907, Dr. A. E. Isaacs states that he is very much disturbed for fear that the readers of your journal will misjudge some of my conclusions in a recent article on Appendicitis, and that possible assistance through operative interference be denied some one. I take it that the members of the profession who peruse a valuable journal like the Medical Record are competent to decide whether statements are misjudged or not, and to this intelligent audience I am perfectly willing to trust the observations on appendicitis which have done so much to save life, and place the treatment of this disease upon a scientific surgical basis. The letter says "the conclusion regarding hopelessness and contraindication of operation in cases of general peritonitis are those generally accepted eight years ago. 'To operate—in every case, if there is a radial pulse, is up to date.'"

The truth is that the above statement is just the reverse of the facts, for it is well known that eight or ten years ago the dictum, I might say craze, was to operate in every case without regard to the period of the disease or the condition of the patient. Under this rule the mortality was so great and apparent, even to the laity, that its most ardent advocates were forced to modify their eagerness to "cut," which led to the more modern and scientific treatment of to-day. In support of this statement, it is only necessary to quote from the standard work of ten years ago, "Appendicitis," by Deaver, published in 1896, page 116, which reads: "Remove the appendix as soon as the diagnosis is made." A well-known and experienced surgeon says: "When a man proposes to operate on all cases of appendicitis, no matter what the condition of the patient, the extent of the disease, or its stages, provided only he can feel a pulse, he shows his lack of judgment and lack of ability to recognize the 'already dead' patient."

It is evident that Dr. Isaacs is ignoring the question of acute septic perforative peritonitis from the bursting of an appendical abscess, the subject I was discussing, and conveys to the profession an erroneous idea of the class of cases which I have called "inoperable." He says my descriptions are less definite, and would have us infer that there are no such cases with temperature of 105° or 106° and pulse of 140 or 160, etc. And yet with the next breath he says: "if permitted to last long enough, become general septic perforative peritonitis, with temperature of 105° or 106° and pulse of 140 or 160," etc. Everyone who reads these articles knows that general peritonitis, diffused peritonitis, purulent peritonitis, etc., as Dr. Isaacs describes them, means cases where nature is still holding the disease at bay; has her barriers up, as it were, and is still struggling to throw off the *materies morbi*, while in the condition I have described as acute septic perforative peritonitis from the bursting of the abscess, the sepsis is no longer limited. Nature is overwhelmed, annihilated, and capitulates in death, and these are the kind of cases in which I have said surgical interference is a "forlorn task." If Dr. Isaacs believes in operating in these cases, because "nothing is lost by operation," why not on this principle operate in all cases of tuberculosis of the lungs, all cases of advanced cancer of the stomach, etc., all along the line—as according to our author, "nothing is lost by operation" except the "surgeon's reputation." Besides, as Dr. Torey says: "Every failure tends to discourage surgery and discourage those who could and should be operated on with safety and benefit." I emphasize this because the wide publicity given Dr. Isaacs' statements by your journal "might result in the acceptance, here and there, of misjudged conclusions and consequent deprivation to many of the chances of possible assistance through operative interference."

Dr. Isaacs further writes at length, regarding the time of operation and the various pathological conditions of the appendix found when the abdomen is opened. There is nothing new in these cases, as we have all met with them, and they are, to a great extent, in the nature of surgical accidents similar to perforation of the stomach, intestines, gall-bladder, etc., either by ulceration or by perforation of foreign bodies. They are fully described in my former articles under the head of fulminating cases, and I need not take up the space to reiterate them here, but refer those interested to former reports. The cases of peritonitis Dr. Isaacs describes are like those reported by Dr. Murphy, except that in operating, Dr. Isaacs removed the appendix. These cases usually end in recovery with drainage, and the technique of removal of the appendix adds to the risk of the operation and is of no practical benefit, since the process that forms the abscess removes the portion of the appendix that is diseased, in the same manner that all morbid material is eliminated in diseased conditions where suppuration and evacuation take place.

In conclusion, let me hope that all my readers will observe carefully cases of death following operation for appendicitis, not only in their own, but in the practice of others. They will then see that the condition of the patient and the period of the disease must be taken into consideration, if we wish to give the patient with appendicitis the benefit of the wisest, most successful, conservative, and modern philosophical treatment. As one of the greatest authorities on appendicitis in this country writes, "It is only a question of time when all will be forced to accept this theory, as facts will overcome prejudice and tradition."

J. J. Brownson, M.D.

Dubuque, Ia.

OUR LONDON LETTER.

(From Our Special Correspondent.)

INFANTS' HEALTH SOCIETY—LONDON POOR LAW GUARDIANS—CARCINOMA IN MICE—AGGLUTINATION—BIER'S TREATMENT OF JOINTS—PANCREATIC DISEASE—ABSCESS OF LUNG—PARATHYROIDS—TETANY—DEATH OF DR. PEDDIE.

London, January 25, 1907.

The Infants' Health Society is opposed to the sterilization of milk, and last week a deputation from it was received by the President of the Local Government Board to urge, in view of his proposed bill, an investigation by a committee of experts. The Society was formed by laymen, but has a good deal of medical support. Sir T. Barlow said the deputation held that sterilization was only a "second best process" and might bring evils in its train. Once sterilized it was not possible to certify the purity of milk, and there were cases of immediate harm having resulted. Children fed on sterilized milk developed scurvy and rickets. As an alternative fresh milk should be cooled down immediately it was taken from the cow and kept cool in sterilized vessels. They therefore asked for an investigation on the methods of cooling. Sir Lauder Brunton followed, and strongly deprecated the enforcement of sterilization of milk, which in the long run was injurious. The addition of preservatives should be penalized. Mr. Burns, in reply, said there were only seven or eight sterilized milk depots in the country, and it was only just to extricate the local authorities from their apparently illegal position. The superiority of refrigeration had been put before him, but he did not think that the last word on the subject, and he did not see why local authorities should not be authorized to try either method.

Representatives of Metropolitan Boards of Guardians met last week to confer on the present methods of dealing with phthisical patients. Dr. Toogood said guardians had no power to alter conditions outside their own institutions. But as to patients in the infirmary their duty was to alleviate, or if possible cure, and, secondly, prevent a patient becoming a center of infection. Some boards were giving a modified open-air treatment, but that had its disadvantages. The number of cures would be small, for nearly all cases were far advanced before entrance. For the safety of other patients and of the officers, consumptives should not

be treated in ordinary wards. A separate block, with air space of 2,500 feet per bed, would be better. The said cases of patients and officers contracting the disease from those in the infirmary were frequent, and ought not to occur from a preventable disease, as phthisis was, if the community had the pluck to tackle the problem. Too much should not be expected from the open-air treatment; at the most, the disease would be checked, but it would infallibly resume activity on a return to the conditions of living which produced it. It was stated that the asylum's board has 2,000 beds at present empty, which it was recommended should be utilized for phthisical patients.

At the Pathological Society, Mr. F. W. Twort stated that in a stock of mice, not exceeding at any time 150, he had met a number of cases of cancer in the female breast; also two of the pylorus and one of the lung. The sarcosporidia of the mouse were found in the tissues around many of the tumors. The disease occurred in the older animals, and inoculation failed to propagate it.

Dr. T. J. Horder recorded a case of typhoid in which agglutination was absent. Diagnosis was made on the sixth day by growing the bacillus from the blood. Spots appeared on the eleventh day. Death occurred from heart failure. Sir A. E. Wright, president, suggested as explanation that agglutination is not a test of infection, but of immunity; if it failed in typhoid the prognosis was very bad, as it showed the patient was not immunizing himself.

Drs. Patch and Wells reported cases of tuberculosis of joints treated (Bier's method) by compression above. The opsonic index was found to rise, a fact they attributed to the passage of the exuded serum through the lesion taking back with it into the blood an amount of the toxic substance—a sort of auto-inoculation comparable to injection of tuberculin. Similar results followed massage or use of the diseased limb.

Pancreatic disease occupied the Medical Society on the 14th. Dr. Sidney P. Phillips remarked that an increasing number of cases of cancer of the pancreas might be explained by the decrease in cancer of the liver. It was said biliary calculi did not predispose to cancer of the pancreas, but his cases did not support this statement. The importance of fat and undigested muscular fibers in the tissues was recognized. Chronic interstitial pancreatitis, involving the head of the gland, simulated malignant disease. Jaundice without ascites indicated pancreatic rather than liver disease, though secondary nodules might appear in the liver before the end of the case. Cancer of the bile ducts also simulated pancreatic disease. Simple malignant disease of the head of the pancreas frequently could not be distinguished, even at the operation. Enlargement of the cervical glands, when present, was an important point. Glycosuria was rare in malignant cases. The so-called "salol test" was useless. He thought catarrhal jaundice was more frequently due to inflammatory swelling of the head of the pancreas than to duodenal catarrh. He thought drainage of the gall-bladder might be done prematurely, as many cases of catarrhal jaundice subsided after eight weeks.

Mr. Mayo Robson did not advise operation when a definite diagnosis of cancer of the head of the pancreas could be made. Some exception might be made when only the tail or body was involved.

Dr. Cammidge remarked that the reaction known by his name, although not pathognomonic by itself, would generally, in connection with clinical symptoms, enable a correct diagnosis to be made.

A case of abscess of the lung and acute endocarditis in acute pneumonia was related to the Clinical Society on the 14th by Dr. F. H. Hawkins, who remarked on the rarity of the complication, especially when, as in his case, the abscesses (there were three found in the inflamed lobe at the post mortem) had a distinct lining membrane. Dr. C. T. Williams said he had seen four similar cases of lung abscess, two influenzal. He had also seen abscesss and endocarditis in pneumonics. He did not think surgical interference offered a good prospect in such cases.

A paper was then read by Dr. David Forsyth on a fatal case of myxedema with changes in the parathyroid glands in a woman of fifty-eight, who had been developing the disease about four years before coming under observation. As the condition of the parathyroids found at the post mortem has not been previously described, the report naturally proved of interest. The six parathyroids found showed a marked tendency for the cells to form vesicles lined by cuhical epithelium, an exceptionally profuse secretion of colloid not only filling the follicles, but lying among the masses of cells and distending the lymphatic channels; an abnormal increase in the connective tissue, which formed coarse trabeculæ, and even penetrated between the cells; thickening of the arterial walls. The changes might perhaps indicate excessive activity of these bodies, to supplement the deficient colloid consequent on the atrophied thyroid, which presented the sclerotic changes usual in myxedema. The alterations in the stroma and arteries were probably pathological changes allied to those of the thyroid.

Mr. W. L. Harnett said he had examined many parathyroids, and considered the colloid as indicating increased activity; he could always correlate changes in the oxyphile cells with this, and asked their condition in this case. Dr. Walter Edmunds said experiment gave contradictory results, and our knowledge of the subject was very imperfect. Animals deprived of thyroid and parathyroids generally died, but a small percentage seemed to suffer no ill effects. In cases that recovered no traces were found of gland tissue which had been left. He thought work on the secretory nerves might yield information. He inquired if there had been any evidence of tuberculosis. In reply to these questions Dr. Forsyth said the oxyphile cells were scattered uniformly, and not in clumps, as in the normal. There was no active tuberculosis, but a calcified focus was found at one apex. Experiments had shown no effects following section of the secretory nerves.

Dr. F. Langmead then read notes of three cases of tetany associated with dilatation of the large intestine in children (ages 6, 3, and 2½), and which he thought formed a tolerably definite but unrecognized group, to which four attributes were common, viz., (1) obstinate relapsing tetany; (2) abdominal distention; (3) offensive unhealthy motions; (4) dilated large intestine. In all the cases the tetany disappeared after the bowel was irrigated, but it returned when accumulation of the feces was allowed. This, Dr. Langmead thought, showed toxic absorption to be the cause, and so far favored the toxemic theory of tetanus in general. Malnutrition, prominent in these, as well as previously recorded cases, seems to point to undue irritability of the nervous system. Some remarks were made by Drs. Turney and Garrod as to the possibility of distinguishing dilatations of the sigmoid and the colon. The president, Mr. Clutton, said he had operated on two cases in adults. He favored preliminary drainage of the colon for about a month before attempting resection.

Dr. Alexander Peddie of Edinburgh died on the 19th inst. at the great age of 97. He took his M.D. and L.R.C.S., Edin., in 1835, and was reckoned the oldest doctor in Scotland, perhaps in the United Kingdom. He had filled various posts in his time, including the presidency of the Royal College of Physicians, Edinburgh, and was F.R.S. and member of various other societies. His recollections of Dr. John Brown, the author of "Rab and His Friends," were a constant source of pleasure to the literary coteries of "Auld Reekie," and some were embodied in his Edinburgh Harveian Oration (1890). He wrote also an account of Brown's life and work, and contributed papers to the medical societies and journals. Of course, he has been retired for some years, but Edinburgh will miss him still more than during the time the veteran was still among her living notabilities.

OUR PARIS LETTER.

(From Our Special Correspondent.)

SPONTANEOUS GENERATION—ELECTRIC SLEEP—TREATMENT BY CATAPHORESIS—THE TREATMENT OF VARICOSE VEINS—ALOPECIA AREATA—SPLENECTOMY FOR INJURY OF THE SPLEEN—URETEROVAGINAL FISTULA.

PARIS, December 28, 1906.

A SERIES of very interesting lectures on the origin of life in general have just been held in Paris by Professor Leduc of the University of Nantes. The important studies that he has made, and the curious results obtained again bring forward the question of spontaneous generation, for his experiments seem to indicate the possibility of a transition from the mineral kingdom to the vegetable. By a chemical process that he has devised he appears actually to create artificial plants. This is the method: To make a seed he takes two parts of saccharose and one of sulphate of copper, which he pulverizes and mixes. He takes a pinch of this powder and with a drop of water makes it into a little granule. Then he prepares a culture medium composed of water, ferrocyanide of potassium (2 to 4 per cent.), chloride of sodium (1 to 10 per cent.), and gelatin (2 to 4 per cent.). He puts a small amount of this medium in a test tube and drops into it the artificial seed: in a few minutes this seed begins to swell, elongates and finally forms a sort of stem, and later on several trunks and branches, which, in a few hours may reach a length of twenty-five to thirty centimeters if the dimensions of the tube permit it. The structure so obtained has the appearance of an aquatic plant, and presents the semblance of roots, stems, of structures that to some extent resemble leaves, and enlargements which suggest fruit. The stems on reaching the surface of the liquid spread out like floating leaves. If, in place of using a tube, the experiment is performed in a wider and deeper vessel, the cultures have a different appearance, and resemble algæ or sometimes

moulds. This curious product of growth which resembles a plant may have several hundred times the bulk of the original granule, and the material necessary for this increase in size is obtained from the culture medium, that is, there must be growth by absorption. The structure is a complicated one, since in addition to the differentiation of horizontal roots, vertical stems, leaves, and terminal organs there must exist some special mechanism by means of which the membranogenous substance and sugar can acquire a length up to thirty centimeters. These three functions, nutrition by absorption, growth, and differentiation, which so far have been considered characteristic of life, are, therefore, reproduced by purely physical forces. The growth of these artificial cells is very susceptible to physical and chemical stimuli, they cicatrize their wounds, and, when a stem is broken before its development is complete, the fragments reunite and growth recommences. Only a single function is still lacking to the synthesis of life—the faculty of reproduction.

These interesting experiments were made by Professor Leduc in the lecture room of the Societe de Chirurgie de Paris, and the same speaker also presented two other important discoveries. By a special method he has succeeded in producing electric currents of a hitherto unknown form by means of which it is possible to cause artificial sleep. Leduc first subjected himself to the action of the current and made careful notes of the sensations experienced. He found that although consciousness persisted during a long period, the subject undergoing the electric sleep was entirely unable to give any evidence of his conscious state by movement or other means. The graduation of the current can be effected slowly and systematically, but if carried too far death may be occasioned. As Professor Leduc points out, in order to do this comparatively weak currents are sufficient, which is in contravention to the custom in countries, such as America, where, for the execution of criminals, extremely strong currents are used.

Finally, Professor Leduc has also perfected a method of electric medication. It is well known that the electric current decomposes chemical compounds, and that it may be used to cause remedial agents to penetrate into the living tissues. When a current is passed into a solution that is not a nonconductor the acid radicals are always set free at the positive pole, while the metals and bases are set free at the negative pole. By employing this principle Leduc causes active substances to penetrate the tissues, and he has especially studied sodium salicylate, which is of value in the treatment of tic douloureux, and also iodide of potassium. In the latter case the solution is placed at the negative pole. Sulphate of quinine is used with the positive pole as is also chloride of zinc, which has been found to be a powerful hemostatic and antiseptic.

A new method for treating varicose veins of the leg was described by Dr. Pierre Delbet before the Academie de Médecine. It is generally considered that the production of varicose veins is principally due to the insufficiency of the venous valves, and attempts have been made to overcome this deficiency by ligature and by resection of portions of the interior saphenous veins. These methods have not proved satisfactory, however, and Delbet proposes to remedy the condition by a new operation which consists in anastomosing the saphenous vein with the femoral vein, which latter is well provided with valves. The juncture is effected in the middle third of the femoral vein, and is said to have given excellent results.

At the Conseil d'Hygiène the conclusions of Dr. Duguet concerning alopecia areata were officially adopted. This observer founding his conclusions on the experiments and studies of Sabouraud and Jacquet, advocated the adoption of the theory of the noncontagiousness of this form of baldness. Formerly, children suffering from alopecia were kept out of the Parisian schools, but in Duguet's opinion this is not necessary, and there is much experimental evidence to sustain his view. The parasitic theory of the disease has been abandoned by most observers, and the condition is generally considered to be one of trophoneurotic origin.

An unusual case of injury of the spleen treated by splenectomy and followed by cure was reported to the Société de Chirurgie by Dr. Barnsby of Tours. The patient was a butcher, aged twenty-eight years, who was stabbed with a knife in the eighth intercostal space in the left side. Six hours later he manifested signs of extreme internal hemorrhage, with pain and muscular rigidity in the left flank. The operation was done nine hours after the injury. By means of a transverse incision parallel with the costal border the peritoneum was opened and found full of blood, the spleen was so severely injured that a fragment representing about one-quarter of the organ was almost completely detached. Splenectomy was performed, and the patient recovered.

Another interesting case was reported by Dr. Jeanbrau of Montpellier. The patient was a woman of twenty-one years who, as the result of pelvic peritonitis had been subjected to a posterior colpotomy by means of which an abscess cavity had been drained. Four days later she noticed that urine was voided through the vagina. Jeanbrau, after having first made use of the segregator of Luys, discovered that there was a fistula communicating with the left ureter, and some time later, by means of the direct vision cystoscope of Luys, he succeeded in introducing a catheter into the injured ureter. Eight days later the catheter was removed, and since that time no leakage has taken place. Jeanbrau stated that a search of the literature had failed to reveal any case of ureteral fistula following pelvic peritonitis similar to this.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

NOMA—LIGHT TREATMENT IN AFFECTIONS OF THE MUCOUS MEMBRANES—LIGHT BATHS IN ANGINA PECTORIS—NEW HOSPITAL BUILDINGS.

COPENHAGEN, January 25, 1907.

THE etiology of noma has frequently been studied, but as yet the question cannot be regarded as settled. It may, therefore, be of some interest to draw the attention to a research regarding this point by Dr. E. Hellesen of Christiania. The case of noma examined by our Norwegian confrère was in so far somewhat unusual, as it occurred in a child that had been in entirely good health until it began to suffer from noma. Dr. Hellesen found in this case a well-defined diplococcus, which he believed caused the affection. He was led to this conviction by the following circumstances. In the first place he found the microbe in question to be constantly present in all preparations from the diseased tissues. Secondly, having succeeded in isolating the diplococcus, he was able to produce a typical necrosis of the skin and adjacent tissues by inoculation of the pure culture in rabbits, just as when particles of the original noma were used for inoculation. As far as regards this one case, the question of the etiology must be said to have been solved. But the author is cautious enough to admit the possibility of several microbes being able to occasion the clinical picture of noma.

In the Copenhagen Medical Society, Dr. K. K. K. Lundsgaard read a paper on light treatment of affections of the mucous membranes. He had treated seven cases of lupus and two of primary tuberculosis of the conjunctiva with very good results. The difficulty that the light treatment of such diseases had hitherto encountered was that the light could not be made to act directly on all points of the affected mucous membrane. But Dr. Lundsgaard had now been able to do this by using the complete reflection of the light rays in prisms with the angles 90°, 60°, and 30°. The sides of the prisms were formed by plates of rock crystal with plane and parallel surfaces, the prism being kept cool by cold water running through its interior. The prism was inserted between the bulbous center and the eyelid, and the light rays directed perpendicularly against the free surface of the prism, so that it was completely reflected from the hypothenuse and passed out into the tissues through the surface opposite to the angle of 60°. In order to secure a total reflection, it was essential to avoid the moistening of the reflecting surface, wherefore the latter was covered with an air-tight metal cap, and the space between the reflecting surface and the metal cap filled with thoroughly dry air. When using this kind of prisms the only drawback was that this air in the course of the treatment absorbed some moisture from the tissues against which the prism was pressed, so that it was necessary from time to time to replace the moist air by a fresh supply of dry air. Experiments (with promising results) had also been made with prisms of less complicated structure. As investigations had shown that a mirror made of amalgam of mercury on a rock crystal plate only absorbed about 30 per cent of the chemical rays, the unprotected hypothenuses of the above mentioned prisms were in other prisms replaced by such a mirror. The cases treated with these less complicated prisms had shown satisfactory progress.

At the same meeting the director of the Finsen Light Institute, Dr. H. Forchhammer, [illegible] very promising results in upwards of one hundred cases of lupus of the upper respiratory tract treated in the institute by Dr. Lundgaard's prisms. The best results were seen in affections of the anterior part of the nasal cavity (good results in 38 out of 47 treated cases), in affections of the mucous membrane of the interior surface of the cheeks and in affections of the tongue. Here he especially mentioned a case of lupus of the tongue which formerly had been treated for years by other methods, but had very

been cured in a relatively short space of time. He sought the explanation of the good results in the fact that it had now become possible to realize the conditions of an efficient light treatment, laid down by Finsen, viz., that the light rays were directed perpendicularly against the diseased tissues, which at the same time were kept cool and anemic by the pressure of the water-cooled prism.

Some months ago I mentioned Dr. Hasselbalch's work in connection with the Finsen light baths. At a meeting of the Copenhagen Medical Society, Dr. H. Jacobous read a paper on angina pectoris, and said that of fifteen cases he had seen fourteen improved or cured by the light baths. He explained the efficiency of this treatment by the dilatation of the cutaneous vessels and the accompanying decrease in the arterial pressure, whereby the work of the heart became less taxing. An animated discussion arose on this point. Prof. Chr. Gram said that the cases were too few in number, and the time of observation too short, to allow of definite conclusions; besides, one often saw improvement by other methods of treatment, as well as long periods free from attacks; also, it was difficult to exclude the effect of suggestion. As an apt illustration of the last, Prof. Israel Rosenthal communicated the observation of a patient who had the sensation of a pronounced improvement, but in whom nevertheless the disease made rapid progress after every light bath. Prof. Friedenreich drew attention to the difficulty of prognosis. A patient of his, whom he had sentenced to death, lived for fifteen or twenty years. Prof. Henriques thought the theoretical foundation of the treatment to be of little value. The decrease of the arterial pressure in the brachial artery, found by Dr. Hasselbalch in his investigations into the effects of the light baths, was in itself very small, and not equivalent to a decrease of the aortic pressure, which latter only was of importance. But even if the light baths caused a decrease of the aortic pressure, the treatment might be harmful in many cases, for example in hypertrophy of the heart muscle in connection with kidney diseases. Prof. Johs. Bock also thought the theoretical basis of the treatment weak. Dr. Hasselbalch, who was present at the meeting, did not speak.

In our largest and most up-to-date hospital, the Kommunehospital, which harbors upwards of 1,000 patients, a new and beautiful building has just been opened as a home for the nurses in the hospital service. The house shelters 126 nurses and has cost $80,000 to erect.

Progress of Medical Science.

New York Medical Journal, February 2, 1907.

Age Limitation of Sports.—H. Toeppen makes a plea for the continuation of gymnastic and athletic sports beyond the age at which they are usually given up. He declares that as to the hardening of tissues, rigidity of arteries, etc., as a consequence of age, there is no rule of general applicability. Naturally if arteries are left undisturbed and are just expected to keep up a sluggish circulation sufficient to supply the wants of a more or less (bodily) lazy business man, they will assume considerable rigidity about the fortieth year; but if they are made to respond to sudden and energetic calls for increased and lively circulation (without frequent excessive demands and these calls on them are made daily) they will last a good deal longer in consequence of improved nutrition of their walls and a more lively excretion of waste and stagnation products. He then goes on to apply the foregoing principles to such common sports as running, skating, and to gymnastic work, concerning which he says there is no limit for anyone and no excuse for its omission. Only, he says, we must individualize with reference to each particular patient. Some very sensible and practical rules are given.

The Surgical Application of Blood Examinations.—This subject is considered by J. B. Deaver, who considers the findings with reference to the red cells in acute post-hemorrhagic anemia and symptomatic anemia. He is not inclined to attach much value to the findings in the first because the surgeon's immediate task is to stop the bleeding, whereas the histological changes in the red cells in such conditions are not found until the end of twenty-four hours. As to the findings in cases with small but frequent hemorrhages in connection with chronic suppurative processes or tumors, a hemoglobin percentage below twenty-five, a paucity of small distorted red cells, and a disease-spoiled body, the author thinks that the condition calls for the most serious contemplation before any operation is undertaken. Concerning the white cells, he declares that the familiar count cannot always be relied on. Leucocytosis is usually found, however, in infections leading to suppuration in any part of the body. It is to be looked upon in general as a measure of bodily resistance. He does not find the count of much value in acute pyosalpinx, except in differentiating from uterine fibroids, ovarian cysts, etc., and one should constantly bear in mind that these may give a leucocytosis when suppurating. The average hemoglobin index is much lower in tubal disease than in appendicitis, and the finding of only fifty or fifty-five per cent. of hemoglobin and a moderate leucocytosis corroborates strongly in making a diagnosis when the clinical signs point to a pelvic collection. The differential count is of value if carefully performed with properly stained films and a count of at least 500 cells. Theoretically, it should always be made, but it is not always possible. He accepts the general conclusions of Sondern on this point, and adds that in lead colic a differential count would be of great value, as the basophilic granulation of the red cells would at once attract attention and decide the diagnosis. But one should remember that lead workers may get appendicitis, and that a leucocytosis is sometimes encountered during the acute stage of plumbism.

Common Misconceptions in the Pathological Physiology of the Circulation and Their Significance.—T. C. Janeway refers in this interesting paper to the great value of the observation of blood pressure in such diseases as typhoid fever, pneumonia, nephritis, etc. In many cases of these diseases the danger lurks not so much in the heart itself as in the vasomotor apparatus. Much of the drugging which is done in the crises of these diseases is utterly useless and even harmful. Effects produced by various valuable therapeutic measures, such as the tub in typhoid, are of value just in proportion as they bring the blood pressure up to normal. Concerning abnormally high pressure, he says that it is found independently of chronic Bright's in at least ten per cent. of all cases. Its causation in these cases is unknown. It has been suggested that the anatomical changes in heart and vessels are secondary to the increased blood pressure, as most of us have believed, though a few have dissented; secondly, that the hypertension is due to widespread vasoconstriction, of toxic origin, from retained metabolic products. That a general increase in vasomotor tone is responsible for the hypertension agrees well with the facts of clinical observation. Heightened blood pressure may be a necessity in many cases of Bright's in which secondary arteriosclerotic changes have taken place in the smaller vessels, which add a permanent element of increased resistance; hence the futility, to say no more, of attempting to keep down the pressure in such cases. In the presence of peril, however, such as uremia, angina, hemorrhage, etc., the vasodilators should be used freely. In the ordinary case with edema and diminished urine excretion, the freshly made infusion from good English leaves is urgently indicated. Rest in bed should be insisted on and the fluid ingested limited. Under these circumstances a rise in blood pressure is to be looked on as a good sign and usually coincides with the establishment of diuresis and relief of the dropsy.

Journal of the American Medical Association, February 9, 1907.

Experimental Chronic Nephritis.—W. Ophuls considers that the textbooks may convey a somewhat insufficient idea of the amount and value of the work that has been done in the study of experimental chronic nephritis. He refers to Ehrlich's and Levaditi's experiments with vinylemin as showing that if time enough is given in the experiments, the lesions of chronic Bright's disease are likely to be developed, and also to those of Heinecke and Passler as likewise instructive in this regard. He reviews the literature of the experimental production of chronic nephritis by poisons that directly affect the renal cortex and are reported to cause interstitial changes, such as aloin, boracic acid, cantharidin, potassium chlorate, chromic acid and the chromates, lead and other heavy metals, oxalic acid and oxamid, sulphuric acid, and various bacterial toxins. He also gives an account of his own experiments. He first employed lead, because it is the only substance that we know with certainty to produce chronic nephritis in man. Of course, the smallest possible doses had to be employed to reproduce a disease of such chronicity, but even then the lead anemia produced was the greatest obstacle to the experiments being carried out for a sufficient length of time. In all cases the lead was administered by the mouth, as this comes closest to the natural conditions, in guinea-pigs, to which from 1.5 to 3 grams of carbonate of lead had been given in the course of from two to five months; only the incipient stages of chronic nephritis were found, but in one dying about four months after the discontinuance of the administration,

more advanced lesions were observable. The same incipient lesions as in the guinea-pigs—necrosis and desquamation of epithelial cells of the convoluted tubules and ascending loops of Henle, cellular infiltration around the blood-vessels near the glomerules—were observed in one dog that had taken only 0.8 gram of lead acetate in six weeks. In other dogs that had taken larger amounts given over longer periods a marked chronic interstitial nephritis was manifest. In spite of careful and repeated examinations, neither albumin nor casts were found in the urine, which gives support to the suspicion that similar conditions may exist in man without such evidence. In order to supplement the experiments with lead, two dogs were given small doses of bichromate of potassium in milk. One of these was lost in the confusion following the earthquake, but the autopsy of the other, which had received nearly 11 grams of the bichromate during the course of four and one-half months, showed more pronounced lesions than those dogs that had been dosed with lead and under observation for a year or more. The bichromate, therefore, seems to promise well for future experimentation along these lines. Ophüls proposes to continue the research with hope of obtaining more definite disturbances in circulation with consecutive cardiac hypertrophy, and of obtaining some information about the relation of renal and vascular disease in chronic nephritis.

Rheumatism in Children.—J. Ross Snyder questions the present tendency to widen the conception of rheumatism in childhood. He says that, eliminating scurvy, pyemic arthritis, and the soreness and stiffness of muscles and joints from clothing, coddlings, and bouncings, the cases of rheumatism in nurslings are almost nil, and from the eighth year onward an attack of rheumatism in a child resembles more or less closely the adult type. He gives a list of a number of conditions that have been regarded as occasional manifestations of rheumatism, and some of these have in certain cases a connection that cannot be denied. The most important of these are the cardiopathies, especially endocarditis, but in view of the number of infective processes that are capable of causing both arthritis and endocarditis, Snyder thinks preconceived notions as to the association of the two disorders will cause many mistakes in diagnosis. As regards chorea, tonsillitis, and erythema nodosum, he is inclined to think the evidence as yet insufficient to prove their relations to rheumatism. As regards the many other conditions considered to be manifestations of child rheumatism, his opinion is that they will "one by one be taken away from this connection until rheumatism will come to mean, not everything, but something or nothing."

Rheumatic Fever in Childhood.—C. H. Dunn concludes that at present it seems advisable to accept the *Micrococcus rheumaticus* of the English investigators, Poynton and Paine, not as the absolutely proven, but as the probable cause of this disorder. A careful study of some three hundred cases treated at the Children's Hospital, Boston, during five years, brings out the following points as characteristic of the disease, as here conceived, in early life: (1) The comparative mildness of the articular manifestations. (2) The relative frequency of cardiac manifestations. (3) The large number of cases in which only cardiac manifestations occurred; an actually greater number than those with only articular symptoms. (4) The frequent primary occurrence of endocarditis or pericarditis. (5) Cardiac manifestations are the most severe. In acute endocarditis, and even more in acute pericarditis, the severity of the case and danger to life are greater than in acute arthritis. (6) A notable feature was the tendency to recurrent attacks with varying manifestations, arthritic, pericardial, etc., and not following any particular order, one form one year and another form for another year. What is called "broken compensation," and generally attributed to overexertion, was observed in 121 of the 300 cases. Dunn attributes it here to a fresh infection rather than to overstrain. As regards diagnosis, he says, given any case of arthritis, especially if with the physical signs of endocarditis, or any case of acute infectious disease without other localization than in the pericardium or endocardium in childhood, the probability is that it is a case of rheumatic fever. Previous attacks, chorea, sore throat, etc., strongly increase this probability. Endocarditis, and other infections from the pyogenic cocci or as complications of other recognized infections are readily diagnosable. As regards prognosis, he says, many physicians do not recognize that the chances of death may be as high as one in five. The cardiac complications are more frequent than in the adult. The severest form is pericarditis, with a high mortality. In conclusion, Dunn points out that the general characteristics are those of a definite clinical entity, and most probably a specific infection to be placed in the same rank as scarlet fever and measles as definite disease species.

Autointoxication in Relation to the Eye.—G. E. de Schweinitz discusses the question of autointoxication, more especially that from the gastrointestinal tract, in relation to the eye. He finds that a number of morbid ocular conditions, including optic neuritis and retinitis, ocular muscle anomalies, affections of the cornea and sclera, and disease of the uvea, may possibly or probably be referred to this cause, and points out the importance of accurate and thorough urine investigation by the latest clinical methods of diagnosis in these cases. He summarizes as follows: "Although we do not know the entity of a single autointoxication, except the acidosis of diabetic coma, and although we know that no known autointoxication is to be attributed to any known end product of any known metabolism, to quote Alonzo Taylor, we do know, from clinical analogy at least, that 'autointoxications exist, even if their true nature is as yet a secret.' We do know, too, that after food is swallowed and before the end-products of assimilation are eliminated there may be processes arising under abnormal conditions which yield poisonous products foreign to normal metabolism, the reabsorption of which may be followed by definite symptoms. We have reason to believe, in the absence of other causes, that ocular troubles may also arise largely in the corneoscleral and uveal tracts, and probably in so far as the nervous apparatus is concerned, in manifestations to which we apply the term acute or chronic retrobulbar neuritis. We do not know whether these toxins, whatever they may be, actually are the only and sole cause of these conditions, but such examinations as have been made by Elschnig, by Kraus, by Grayer, by Edsall, and by myself at least indicate that, to use Elschnig's term, they may be considered accessory causes. As Edsall and I have said, they may be able to play a certain part in the production of the symptoms, and at times are probably the direct cause of their continuance, even when other more commonly accepted etiological factors have ceased to be active."

The Lancet, January 26, 1907.

Glandular Extract from Immunized Animals as a Curative Agent in Plague.—S. Mallannah reports the results of experiments in fifty rats and guinea pigs. Healthy rabbits were inoculated with Haffkine's prophylactic fluid in sufficient degree to give them a slight immunity. Later they were inoculated with the plague bacillus and then while still quite sound chloroformed. Microscopic examination of the juice of glands of such animals did not reveal the presence of any bacteria and no growth was obtained on the media inoculated. The details of preparing the glandular juices are given in full. He was led to these experiments from consideration of the well known clinical fact that the cases of the plague which recover are those in which the glandular reaction is most marked, while the most serious cases are those in which the glandular reaction is hardly observable. It is also noted in the laboratory that marked pathological changes are found in the lymphatic glands, spleen, and liver, especially in those animals in which for some unknown reason the disease runs a chronic course.

A New Sugar Test.—H. J. H. Fenton describes this test which is delicate enough to detect one-tenth per cent. sugar in urine and other body fluids, or even less. The reaction depends on the fact that all carbohydrates of the hexose, or polyhexose, type (such as dextrose, levulose, cane sugar, milk sugar, or maltose) yield a certain amount of bromomethylfurfural, $CH_2Br—C_4H_2O—CHO$, when acted upon by hydrobromic acid under appropriate conditions; and further, that the latter substance reacts with malonic ester in presence of alkalies, giving rise to a product the solutions of which exhibit a powerful blue fluorescence. The conditions most favorable for the action of hydrobromic acid are obtained when phosphorus tribromide is dissolved in some inert solvent, such as toluene, and the solution is heated with the carbohydrate in presence of water; excess of water, however, must be avoided. For the examination of urine the test is most conveniently applied in the following way: Pour a small quantity (four or five cubic centimeters) of the liquid on to an excess of solid anhydrous calcium chloride so as to form a semisolid, or pasty, mass. Add to this ten cubic centimeters of toluene containing two or three drops of phosphorus tribromide and then carefully boil the mixture for a few min-

utes, bearing in mind the inflammable nature of toluene. Pour off the toluene solution and, after cooling, add to it about one cubic centimeter of malonic ester and a little alcohol. On neutralizing the mixture by adding alcoholic potash, drop by drop, a characteristic pink color will usually be observed. The mixture is now considerably diluted with alcohol and a few drops of water when, if sugar was originally present, the solution will exhibit a beautiful blue fluorescence. The reaction appears to be a specific one for carbohydrates which contain six or more atoms of carbon in the molecule and may therefore be used to distinguish hexoses from pentoses or other lower sugars.

Observations on the Induction of Autovaccination in Tuberculosis and other Chronic Glandular Infections by the X-Rays.—These observations are recorded by H. D. McCullough, who bases his work on the revelations of the opsonic chart in the tuberculous cases. Their purpose is to demonstrate the theory that the mechanism of the therapeutics of the *x*-rays rests upon the induction of an autovaccination, subsequent to the resolvent action of the rays on the rudimentary neoplastic encapsulating tissues about the tuberculous glands, thus rendering the vaccine accessible to the blood-vessels. It is also shown in the paper how the effects may be observed by minute temperature reactions, accompanied by similar advances in the opsonic index without negative phases, tested by the periodic estimation of the opsonic index to the tubercle bacillus. The author refers to the admitted fact that all neoplastic tissue is a rudimentary replica, almost in every detail, of the tissue affected and that such tissues are highly susceptible to the influence of the *x*-rays and of the less penetrating cathode rays. These stop short of damage to the normal and more organized tissues when they are judiciously applied, and they restore metabolism when it has more or less come to a standstill. The author states that he is tempted by the obvious therapeutic parallelism in the recently reputed medicinal agents in cancer to enter into their probable therapeutic values as recorded in the experience of others. He refers to papain, trypsin, and amylopsin, but adds that these enzymes, when injected in emulsion into the encapsulating tissues where metabolism has come to a standstill, bring about active resolution (if veins are avoided) by virtue of their proteolytic and diastatic properties on those tissues, when the lesions are accessible and not too deeply situated. They may thus liberate the vaccine when present in the lymphatic glands with the desired result if they do not influence it unfavorably by admixture before neutralization.

X-Ray in the Treatment of Carcinoma and Sarcoma.—C. Williams notes that all the theories advanced to account for the influences of the rays on malignant growths seem to point to a leucocytosis being ultimately produced in or around the growths. According to one authority, they have a special selective action on new growths, the cell nuclei swell, do not stain well, the outlines of the cells become indistinct and fuse, the protoplasm becomes granular, is invaded by leucocytes and absorbed, leaving a network of dense connective tissue containing vessels with thickened walls from endo- and periarteritis caused by the rays. Some sort of reaction seems to the author absolutely necessary. This reaction may take the visible form of redness in the mass if protruding through the skin or round the edges of an ulcer, swelling or hardness of the tumor, increased heat, perhaps in some cases increased pain or other vague undefined feelings to the patients. If a discharge be present it soon takes on a more healthy nature, both as regards appearance and odor. Sometimes there is pent-up pus, with elevation of temperature and night sweats. The rays should be used both before and after surgical intervention. Failure may result from inexperience of the operator, weakness of the apparatus, too weak or too energetic treatment, the hopelessness of the case, dissemination of the disease throughout the internal organs, or the patient's low vitality. Except in cases in which the growth is extremely small, the author thinks it best not to screen the surrounding tissues. The pain of malignancy can be greatly alleviated by this mode of treatment. The pain that one sometimes notices in cases where it is obviously due to the dragging or contraction of the scar does not seem to yield so readily as "growth" pain. Pain produced by pent-up discharge or the disintegration and liquefaction of the malignant cells can only be relieved by the patient's disruptive powers or by an exit naturally or artificially produced. In uterine cases it is important carefully to distinguish between the period pain and the pain of the growth while under treatment.

British Medical Journal, January 26, 1907.

Urethral Abscess and Calculi.—F. G. Hack reports the case of a man of thirty-four years who was operated on for perineal abscess. A quantity of pus was evacuated and the presence of a large calculus revealed. This was extracted with lithotomy forceps, and afterwards found to weigh over one-half ounce. A sound passed into the bladder detected no calculi, nor could any communication between the bladder or urethra and the cavity containing the calculus be discovered, but subsequent to the operation a small quantity of urine escaped from the perineal opening during micturition. When seven years of age the patient had undergone an operation for stone, apparently by lateral lithotomy, the perineal abscess occupying the site of the old scar.

Incubation of Scarlet Fever.—Commenting on the fact that most text-books give the incubation period in this disease as from one to seven days with an average of from two to four days, E. L. Jenkins states that it is often much longer. From an extensive hospital experience he believes that it is often to three or four weeks. Owing, he says, to inevitable errors in diagnosis, a certain number of cases are sent in as scarlet fever which are not so. A child, for instance, suffering from sore throat, with a pseudo-rash, and the concomitant signs and symptoms of some fever being present, the case is diagnosed as one of scarlet fever, is consequently notified as such, and is immediately sent for isolation. On the following day, however, the little patient is found, to all intents and purposes, quite well, with an absence of fever and no trace of any rash. This change within twenty-four hours is very marked, while the general appearance of the patient during the next few days will serve to prove that an error of diagnosis has been committed. This being so, we cannot even place such a case among the category of the "simplex" or mildest form of scarlet fever. Nevertheless, owing to the absence of an observation ward in the author's hospital such a child is placed among the genuine cases of scarlet fever, and is from the moment of admission open to infection, and yet cannot be discharged just then. Under such favorable conditions for infection he finds that such a child does not contract the disease within seven days—the limit incubation period as generally given—but on the other hand shows unmistakable signs of infection in from three to four weeks after admission to the scarlet fever wards. The type of fever in these cases is somewhat severe, the signs and symptoms being usually typical of those varieties of scarlet fever recognized as "scarlatina anginosa" and "scarlatina maligna."

Treatment of Myoma of the Uterus.—J. F. Jordan believes that uterine fibroids call for active treatment and that it is wrong to allow the condition to go unrelieved, providing of course that symptoms are present. Most frequently we find hemorrhage and, nearly as often, pain due largely to a complicating inflammation of the appendages with adhesions. Cases die more often than is realized from the effects of repeated hemorrhages and consequent debility. It is not true that fibroids "do not kill." The mortality of hysterectomy is not great, certainly not over five per cent. Myomectomy may be done if the patient is under forty years, if pregnancy coexists, if a tube and ovary capable of functionating can be preserved, and if it can be done so as to leave a uterus practically sound. Recurrence must be admitted as a possibility. Minor measures, as curetting and electrical treatment, are absolutely useless. As to oöphorectomy it is not to be compared with hysterectomy as a routine procedure for the following reasons: (1) The operation of oophorectomy is attended by quite as large, if not a larger, mortality than hysterectomy. (2) It is quite as difficult an operation to perform, and takes very nearly as long. (3) The immediate post-operative condition is much more distressing, there being much more pain after oophorectomy than after hysterectomy. (4) The general convalescence is longer and much less easy. (5) The ultimate cure cannot, on the face of it, be as certain. If we perform a hysterectomy we remove the stretching on the broad ligaments caused by the fibroid. In the Trendelenburg position, with all the bowels and omentum tucked up in the abdomen away from the pelvis, one can fashion the peritoneal flaps, tie the vessels so that the stumps drop under, and can be easily buried under the peritoneum. The author never sutures the cervix. He simply brings the anterior and posterior flaps of peritoneum together with a continuous fine silk suture. At the end of the operation one can look down into the pelvis, and there is between the bladder in front and the rectum behind nothing but the line of suture visible, lying in the pelvic floor with no strain whatever upon it. If the appendages are not diseased he does not remove them.

The Cause of Acute Illness Supervening During Menstruation.—A series of cases is summarized by T. Holmes. He refers particularly to three instances in which an apparently normal menstruation is interrupted by signs of a sudden pelvic inflammation. Under such cir-

cumstances he has several times found small but very sensitive ovaries. There may also be accumulation of blood hematocele. Such cases undoubtedly start as hemorrhage from a Graafian follicle, engorged with blood as it is, at the menstrual epoch, the exciting factor being undue exertion, causing intraabdominal pressure. In another case of the author—recovery from acute lobar pneumonia—menstruation came on and the patient was seized with acute pain in the left iliac fossa, together with nausea and vomiting. Examination showed a prolapsed, enlarged, and very tender ovary. In such a case one must consider the possibility of blood infection by the pneumococcus as either attacking a healthy ovary and setting up an ovaritis, or attacking an ovary in the substance of which blood has been effused, owing to the rupture of an engorged Graafian follicle, causing an infection of it, and so setting up an inflammation. In still other cases the pelvic inflammation may result from septic conditions in either rectum or vagina, or both. The clinical history of one case in this category closes the author's paper.

The Food Factor of the Twentieth Century.—G. J. Sealy calls attention to the increased amount of bowel disease of the present day. He attributes it largely to the increased consumption of meat. Those who eat the most meat are those who want the most meals. The stimulating property of meat is largely responsible for the fact that those who have for a time abandoned the use of meat at breakfast and lunch, and who confine their indulgence in it to once a day, find that what they were disposed to regard as a mere apology for a meal sustains them better and for a longer time than what they wrongly thought was the more substantial and valuable material. Cookery, in England, says the author, has altered to the extent that solid foods are made mechanically more digestible, not an unmixed gain, as excesses are simplified, and indiscreet indulgers are not warned by the epigastric storm-signals which formerly brought them to account. Some years ago the author restricted his proteid intake to one-third of his former allowance, and found himself greatly benefited in every way. Proteid restriction has a most beneficial effect on the peripheral circulation, in the sense of a feeling of increased warmth and general well-being. Much of the so-called "nervousness" of the present day is merely the result of autointoxication from too great proteid indulgence. A large amount of energy is used up in passing on nitrogenous waste products from organ to organ, or from tissue to tissue, on the way to elimination, and that liver and kidneys ultimately rebel at the excessive labor is not to be wondered at, and when the products that result from the breaking down of nitrogenous waste fail to go through the processes in the hepatic cells and elsewhere that Nature intended, very serious symptoms inevitably result.

Berliner klinische Wochenschrift, January 21, 1907.

The Flotation Test of Infants' Lungs.—Marx states that it is two hundred and twenty-five years since Johann Schreyer first made forensic use of the floating test as a method of determining whether the lungs of a newly born child had ever been distended with air or not, and the performance of this test is still one of the duties of the pathologist making an autopsy on a new-born child for medico-legal purposes. While *per se* the fact that a lung sinks is evidence that the child had never breathed, and that if it floats air had entered the lung, there are certain sources of error that must be taken into account. Chief of these is the effect of decomposition which may cause an unexpanded lung to acquire buoyancy enough to float. In this case, however, the bubbles of gas that form beneath the pleura are different in character from the appearance of aeration caused by respiration. The decomposition bubbles are irregular in size and generally are larger than alveoli, and gas formed through decomposition is always in the interstitial tissues and never in the interior of the alveoli. The author then reviews the work of a long series of investigators who have endeavored to establish the scientific value of the test or have suggested modifications of it. Among these is the flotation test of the stomach and upper portion of the intestine. If respiration has taken place air will have entered these cavities and the organs will float, but here again if decomposition has set in the result is unreliable. The author does not attempt from his review of the literature to form conclusions regarding the inferences that may be drawn from the flotation test, but does state that it is still an important feature of the determination of the occurrence or nonoccurrence of a still birth.

Münchener medizinische Wochenschrift, January 15, 1907.

Finding the Round Ligaments in the Inguinal Canal.—Reismann suggests the following expedient to facilitate the isolation of the round ligament in performing the Alexander operation for retroversion of the uterus. Numerous methods for this purpose have already been proposed, but even if the canal is laid open for the entire length, it is frequently difficult to identify the round ligament, owing to the infiltration of the tissues with blood, which very easily takes place and renders it difficult to distinguish the different structures. A simple way of solving the problem is to pick up the entire contents of the canal with a blunt hook and put the parts somewhat on the stretch. The bundle of tissue thus elevated is then pulled apart slightly with two pairs of forceps, and the round ligament will soon be discerned shining through the overlying tissues as a grayish band. The forceps are then used to isolate the structure at this point, and it is caught up on another hook. The first hook is removed and it is now an easy matter to free the ligament from adjoining structures in both directions and to draw out the peritoneal funnel through the internal ring.

The Treatment of Delirium Tremens.—Ganser is of the opinion that it is much better to cut off the alcohol absolutely in cases of delirium tremens than to make any attempt to reduce gradually the amount consumed. He also is averse to the use of sedative drugs, particularly chloral, which he considers is very dangerous even in doses much smaller than those that are frequently recommended. The hot baths and wet packs that have been suggested by several authors are also looked upon with disfavor by Gänser, who states that he has seen collapse and death occur under each of these forms of treatment. In the past sixteen years he has treated 1,051 cases of delirium tremens; during the first eight years 486 patients were treated, with a mortality of 6.37 per cent.; during the succeeding eight years, 565 patients were treated, with a mortality of only .88 per cent. During both of these periods the therapeutic measures were the same in all respects except one, and it is to this one point of difference that the author attributes the great improvement in the statistics. Actuated by the conviction that all persons suffering from delirium tremens either already have weak hearts or that this danger exists, Gänser has adopted the rule of giving digitalis immediately to all patients of this class brought into his hospital. This is kept up until all danger seems to be past, while if at any time evidences of cardiac weakness, such as rapid, small, or irregular pulse, are observed, the customary stimulants, particularly camphor in oil, are given hypodermically. In such cases also ice cold champagne in tablespoonful doses has been found useful, but this is the only condition under which he breaks his rule of abstinence from alcohol. The other features of his plan of treatment comprise careful nursing with abundant feeding and attention to the bowels, isolation being resorted to only when absolutely necessary. Sedatives are very rarely used, as their effect has been found unsatisfactory. In order to facilitate toxin elimination the patient is encouraged to drink freely a 1 per cent. solution of sodium acetate in water to which a little molasses has been added.

Deutsche medizinische Wochenschrift, January 10 *and* 17, 1907.

The Treatment of Large Umbilical Hernias.—Figler says that ordinarily the very large umbilical hernias of new born infants give a bad prognosis. The interferences with the circulation in the displaced organs are apt to cause such serious disturbances of the digestive processes that the nutrition of the child suffers severely. He believes that in these cases radical operation should be resorted to and the earlier the better, because as time goes on it becomes increasingly difficult to secure asepsis and avoid infection of the peritoneum. He describes such a case occurring in a child which at birth weighed two kg. and suffered from a very large hernia into the umbilical cord. The operation was done on the fifth day after birth and the entire liver, together with coils of small intestine, was found in the sac. A radical operation was done and two and a half weeks later the child had more than doubled its weight. Five weeks later the child was seen again and was found to be well nourished and with a healthy cicatrix.

A Simplification of Heller's Test.—Salus speaks highly of the value of Heller's ring test, which he considers the most delicate and certain reaction for albumin in urine, but points out the inconveniences that attend it if it is to be properly carried out. As a simple but thoroughly efficient modification, he suggests the following procedure: A glass plate, such as a microscopic slide, is laid on a black surface, and on this are placed a drop each of nitric acid and of the urine to be tested. If placed close together the drops soon join, and at their line of junction a characteristic film of precipitation will form and gradually produce a milky veil over the fluid which can be clearly discerned against the black background. The test is exceedingly delicate, and in addition to its simplicity of performance, has the advantage that only very small amounts of urine are necessary, a point that is of service in working with scanty urines.

Book Reviews.

Traité de Chirurgie. Par Henri Hartmann, Chirurgie de l'Intestin. Paris: Georges Steinheil, 1907.

The author has succeeded in giving an excellent sketch of the diseases of the intestine requiring surgical aid. The Murphy button is used only in special cases, while, as a rule, the suture is given preference for anastomosis work. The book is well illustrated, and can be highly recommended

De l'Apepsie. Par Henri Français. Paris: G. Steinheil, 1906.

Under the above title Français gives a detailed description of achylia gastrica. The writer gives his own observations and several new experiments relating to the subject. The book may be recommended as profitable reading for the practitioner.

Gesammelte Beiträge aus dem Gebiete der Physiologie, Pathologie und Therapie der Verdauung. Von J. Boas und seinen Schülern. Berlin: Verlag von S. Karger, 1906.

Having been the first to establish a polyclinic for the diseases of the digestive tract in 1880, Boas decided to publish in the present two volumes his and his pupils' works in the last twenty years. Most of Boas' pioneer works are known to every clinician. his essays on the importance of lactic acid in gastric carcinoma; occult hemorrhages in cancer and ulcer of the stomach; mechanical insufficiency of the stomach. In fact, there is hardly an important subject in the field of digestive diseases on which the well-known author has not written something good. In studying the two volumes the reader will thus go through the entire field of the pathology of digestion with great profit to himself, and will congratulate Dr. Boas on his great achievements.

Pulmonary Phthisis. Its Diagnosis, Prognosis, and Treatment. By H. Hyslop Thomson, M.D., Visiting Physician to the Consumption Sanatorium of Scotland, Bridge of Weir, N.B., formerly Medical Superintendent. New York: William Wood & Co., 1906.

The author treats in a most concise manner the whole subject of pulmonary tuberculosis. The work is in three sections, dealing with diagnosis, prognosis, and treatment. In such a brief work it is manifestly impossible to consider either section exhaustively, and in dealing with diagnosis the writer emphasizes particularly abnormalities in signs and symptoms which would lead one to suspect tuberculosis, in preference to giving a detailed consideration of typical cases. He cautions against definite prognosis, and discusses frankly the limitations of open-air treatment. The section dealing with prognosis will be found to contain many points of real value to the general practitioner, and could have been written only by a physician experienced in sanatorium treatment.

In considering the treatment of phthisis, Dr. Thomson has brought out little that is new. Many physicians will differ from him somewhat in the treatment of special symptoms; for instance, the value of the use of antiseptic drugs to overcome secondary invasion by pyogenic bacteria may be questioned. The chapter on specific treatment, though short, is a very interesting summary of recent investigation, and his remarks in regard to tuberculosis in children are worthy of attention.

The Diagnosis of Nervous Diseases. By Purves Stewart, M.A., M.D., F.R.C.P. Physician to Out-Patients at the Westminster Hospital; Joint Lecturer on Medicine in the Medical School; Physician to the Royal National Orthopedic Hospital; Assistant Physician to the Italian Hospital. London: Edward Arnold, 1906.

Diseases of the nervous system are admittedly among the most difficult for the average practitioner to diagnose, and those who see maladies of this description more or less rarely will find the present volume a very useful guide. It is written purely from the standpoint of diagnosis, and without going into any details regarding etiology, pathology, or treatment, the symptoms and physical signs that accompany the various affections of the nervous system are set forth clearly and logically. Several preliminary chapters are devoted to the most important anatomical considerations, and then the different types of phenomena on which the physician bases his deductions are discussed under chapter headings, such as "Coma, Fits, and Other Convulsive Phenomena," "Reflexes," "Disorders of Articulation," etc. Especially useful and interesting are the sections on postures and gaits, and on affections of the sympathetic, and the work closes with a chapter in which the important subjects of lumbar puncture and the cerebrospinal fluid are well presented in the light of recent work. The illustrations are very numerous, and, as they are nearly all original, have the charm of novelty. The author is to be congratulated on his success in achieving his object of presenting a concise and attractive treatise on a difficult subject, and it is a pleasure to recommend it to those interested.

Elements of Practical Medicine. By Alfred H. Carter, M.D., M.Sc., F.R.C.P. Lond.; Professor of Medicine, University of Birmingham; Senior Physician to the Queen's Hospital, Birmingham; Emeritus Professor of Physiology, Queen's College, Birmingham; Consulting Physician to the Corbett Hospital, Stourbridge, the Bromsgrave Hospital, the Smallwood Hospital, Redditch, and Guest Hospital, Dudley. Ninth Edition. London: H. K. Lewis, 1906.

This is an excellent compendium of the practice of medicine, well adapted to the needs of the advanced student, the busy practitioner, and anyone who wishes to review the broad facts of medicine without going into the minute details of pathology or a discussion of the differing and often conflicting views of various writers. The author describes the various diseases in turn, following the generally accepted teaching and avoiding reference to other authorities. In this way much ground is covered in a few pages. The book is not a treatise on medicine, but rather a plain narrative of the course of disease, with suggestions regarding the management of the patient, and a statement of the generally accepted treatment. Following an introductory chapter on General Pathology are chapters on Specific Infectious Diseases, General Diseases, Diseases of the Blood and Glands, of the Respiratory, Circulatory, Alimentary, Urinary, and Nervous Systems, and of the Skin. There are no illustrations; they are not needed in a work of this kind, and their omission is commendable in these days of many picture books. A practical and not too long therapeutic index completes the work. We like this book, and we think others will find it a useful guide to medical practice; indeed, others must have found it so, for the work is now in its ninth edition

The Diseases of the Nose, Throat, and Ear. By Charles P. Grayson, M.D., Clinical Professor of Laryngology, Medical Department, University of Pennsylvania. Second Edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co., 1906.

The first edition of this manual was favorably noticed in these columns. The various topics have been brought up to date in the new edition and some excellent colored plates added. The characteristic feature of the work is, in our opinion, a wise selection of therapeutic measures, so that the beginner is not confused by too many suggestions. So also particular stress is laid on the relations of nasal and throat to other bodily functions. The writer impresses one as a good, all-around physician, as well as a skilled rhinologist. He realizes that there is a medical as well as a surgical side to the question of nose, throat, and ear therapy. We know of no better work for the student or the practitioner beginning this special line of work. Of the 518 pages of text (excluding formulary and index), 225 are devoted to the nose and accessory cavities, 96 to the nasopharynx and pharynx, and 195 to the ear.

Abdominal Pain. Its Causes and Clinical Significance. By A. Ernest Maylard, M.B., B.S. (Lond.), Surgeon to the Victoria Infirmary, Glasgow; late Examiner in Surgery to the University of Glasgow, and Victoria University, Manchester; formerly Demonstrator of Anatomy, Guy's Hospital, London, and ex-President of the Glasgow Pathological and Clinical Society; Author of a "Treatise on the Surgery of the Alimentary Canal." Second Edition (revised). London: J. & A. Churchill, 1906.

In view of the fact that, although pain is one of the commonest symptoms of disease, it is also, owing to its subjective nature, one of the most difficult to interpret, it is rather strange that medical writers have not devoted more attention to the subject. Compared with other topics, it would seem that semeiographers had given it but scant consideration, and any contribution to a study of its nature and practical bearing deserves the gratitude of the profession. What may be accomplished in this field by a thoughtful investigator is well illustrated by the present work, which is devoted to the symptom as it occurs in the abdominal region. Owing to the thoroughness with which the origin of referred pains has been taken up, the scope of the volume is much greater than its title at the first glance indicates, particularly as pain in the sides, and dorsal, lumbar, and sacral regions is included. While such chapters as those on post-operative pains caused by different types of causes, such as incisions and ligatures, flatulence, peritonitis, and adhesions, and the character of certain operations are of especial interest to surgeons, most of the book should be found of great value by internists as well. By means of a series of well-compiled tables, the work is made very convenient for use as a reference book.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held December 13, 1906.

DR. MATTHIAS NICOLL, JR., IN THE CHAIR.

Splenomegaly, with Special Reference to Etiology.—Dr. ELI LONG presented three cases of splenomegaly. Cases 1 and 2 were twins, boy and girl, nineteen months old. The father and mother were healthy, and gave no specific history. These were the last of nine children, all living except two, one having died from diphtheria, the other having been killed in an accident. The mother had never had a miscarriage. These babies were breast-fed entirely till one month of age, when they were given supplemental bottles of Borden's bottled milk, modified, not pasteurized or sterilized. The children were kept out of doors. They had never before been ill. On examination the most striking feature was their very pale skins, especially that of the girl. They were well nourished, with slight rickets. The spleen of the little girl extended about 2½ inches below the free border of the ribs, that of the boy about 1 inch. The livers were slightly, if at all, enlarged. The spleens were firm, but not hard to the touch. Examination of the blood showed the following: Specimen from the girl, according to Dr. L. B. Goldhorn's examination, revealed many nucleated red cells, half of which were megaloblastic in type. There was marked poikilocytosis, a marked lack of hemoglobin, but no malaria. The red cells numbered 2,200,000, the color index was 0.5, the hemoglobin 22 per cent., leucocytes 18,700. Differentially, the polymorphonuclears 32.1 per cent., lymphocytes 49.8 per cent., transitionals 15.1 per cent., eosinophiles 1.0 per cent., basophiles .8 per cent., and myelocytes 1.2 per cent. The specimen from the boy was practically the same, with less anemia and less leucocytosis. Case 3. This boy, two years old, was the youngest of three children, the others living and well. The parents were German, healthy, no miscarriages, or other specific history. The baby had been entirely breast-fed, although the mother had menstruated for the past six months. The first tooth appeared at twelve months. There was a great deal of bowel trouble, especially each summer. The child had been sickly and weak from birth, and had never walked. Examination showed an extremely rachitic infant, much emaciated. He had six teeth. He was markedly rachitic, and the epiphyses were greatly enlarged. The spleen extended two inches below the costal arch, was fairly hard to the touch. The liver was enlarged to within a finger's breadth of umbilical level. Examination of the blood by Dr. Goldhorn showed a very grave secondary anemia. There was a very marked variation in size of the red cells, a moderate poikilocytosis, many normoblasts, a few megaloblasts, and kariokynesis was present. The red cells numbered 3,200,000, the color index was 0.8, hemoglobin 52 per cent., leucocytes 18,200; no malaria. Differentially, the polymorphonuclears 42.2 per cent., lymphocytes 42.5 per cent., mono and transitionals 9.2 per cent., eosinophiles 6.1 per cent., basophiles 1.0 per cent., myelocytes 0.0 per cent.

Dr. Long said that these cases of enlarged spleens and anemia came to one even in private practice with this condition already established, and one did not know how or when it began and could only surmise as to the probable cause. In a few one got a definite history of malaria, but one did not anticipate such a result from malaria, nor in a very large majority of malarial cases did one get it. He asked who would feel justified in saying that infants with healthy brothers and sisters, with no family history of syphilis, and no other evidences of specific disease, had congenital syphilis which had caused the present condition? And as to certain kind of diet as an etiological factor, it was just as indefinite.

DR. CHARLES HERRMAN believed that the cases presented by Dr. Long pointed to the correctness of the theory of the congenital anomaly of the blood-forming organs. He had seen three sets of twins with this condition. When there were two children the amount of iron was insufficient, and one child might be more anemic than the other because one received a smaller amount of iron through the placenta.

A Case of Congenital Syphilis.—DR. CHARLES HERRMAN presented this child, nine weeks old, who at birth had edema, especially marked on the dorsum of the feet and hands. According to the mother, the condition of their first child, who died when eleven days old, was similar to the condition of this, their second child. The patient was poorly nourished, weighing 4 pounds and 4 ounces, temperature 97.4°, skin dry, somewhat brownish, buttocks excoriated, a slight rhinitis, and a congental systolic murmur over the precordium. No specimen of urine was obtained, but so far as he was able to judge there was no lesion of the kidneys. The mother had been given bichloride of mercury, and there had been some improvement, the child having gained some in weight and the edema having diminished somewhat. He now expected to place the baby on antisyphilitic treatment.

Urinal for Infants.—DR. HENRY DWIGHT CHAPIN presented this urinal which made the collection of infants' urine comparatively easy.

Pyelitis in Infancy and Childhood, with Remarks on the Urine.—DR. LOUIS FISCHER read this paper, and said that in a series of cases observed by him three groups of symptoms stood out prominently: (1) The fever, intermittent in character, progressive emaciation, and constipation or coprostasis; (2) bed-wetting and pains evidenced by crying while urinating, passing of small quantities of urine at a time, as though afraid to pass more because of pain, absence of fever throughout the whole course of the disease; (3) distinct digestive disturbances mostly marked by the passage of scybalous masses and feces intermingled with shreds of membrane, and with it marked anorexia, fever very rarely present. The diagnosis of these cases was made by the microscopical examination of the urine. It emphasized the importance of securing a specimen of urine in every case of infantile disease. The presence of continued fever in an infant was a very distressing symptom, and when it assumed the type so well known as an intermittent fever a diagnosis could only be made by resorting to laboratory aids in conjunction with the current methods of physical diagnosis. All cases seen by him had shown marked disturbances of the gastrointestinal tract. In one of the cases Dr. Fischer reported the noteworthy features were that the child was playing out of doors and in apparent good health up to the day he saw this case. Had it not been for the catarrhal rhinitis the family would not have sent for him, although the child had enuresis nocturna for several days prior to the rhinitis. This case illustrated forcibly the necessity of examining the urine for morphological elements, and also showed that a pyelitis could exist without causing severe systemic disturbances, as this child had no fever and nothing that indicated kidney disease. Three other cases were reviewed. A review of these four cases showed the following: First, the pyelitis presented a variety of symptoms resembling intermittent fever with marked exacerbations and remissions in the temperature. Second, that pyelitis was occasionally met with in infancy as an afebrile type, and were it not for the presence of the enuresis no symptoms associated with the genitourinary tract would have been present to direct attention to the kidneys. It was well to remember that pus might be found in the body without showing the presence of fever; hence too great stress should not be placed on the absence of fever as a guide to the presence or absence of pus. An interesting point in connection with these cases was that they all occurred in female children.

One should never rely upon the examination of one specimen of urine as a positive guide to diagnosis. The general plan of treatment consisted in rest in bed, good ventilation, sponge or warm baths. To allay the pain during urination and the irritation of the genitals a warm demulcent bath was used. The diet consisted of milk diluted with alkaline waters, cereals, fruits and fruit juices, and gelatin puddings. Meat and eggs were excluded during the acute stage. The use of phosphate of sodium or bicarbonate of potassium in five-grain doses, taken with an abundance of water, was recommended. A urinary antiseptic in moderate doses three times a day was also prescribed in most cases.

Dr. Henry Dwight Chapin said that it was very difficult to make a diagnosis of pyelitis from the clinical history alone, and he emphasized the importance of constantly examining the urine. There was no doubt that many cases that puzzled them so were cases of pyelitis. At the hospital by means of the instrument for collecting infants' urine he had been enabled to make diagnoses of pyelitis which could not have been made from the clinical symptoms. He said he had not been as successful as Dr. Fischer in collecting urine by the old methods; frequently the catheter would make excursions into the vagina before getting into the urethra.

Dr. Henry Illoway said that he had read about the diagnosis of pyelitis, but he was yet in the dark as to how to make a differential diagnosis; he asked if there was anything distinctive about pyelitis, and why they called it pyelitis.

Dr. E. L. La Fetra showed a chart with an intermittent curve of temperature. The baby when first seen was one of fourteen months, and had been ill one week. The course of the disease was five weeks. He presented this chart in connection with Dr. Fischer's paper.

Dr. Charles G. Kerley said that the five cases he had had differed from those of Dr. Fischer. All were under eighteen months of age, and all were girls. There was a marked onset in all, and the excursions of temperature were very wide, varying from three to five degrees. In all cases the colon bacillus was found.

Dr. Matthias Nicoll, Jr., said he was puzzled to know upon what Dr. Fischer based his diagnosis, after examining the microscopical charts of the patients recorded in the paper.

Dr. Louis Fischer said that every specimen of urine was sent to Dr. Sondern and every case showed pus and blood, a diagnosis of pyelitis being made positively. He thought the cases reported by him were typical ones. He had never seen such cases as reported by Dr. Kerley with such an acute onset with chills. He recalled one case of pyelitis of severe form; the child was playing on the street, and he was called because the child sneezed so and coughed. Examination of the urine revealed the presence of pus.

Dr. L. Emmett Holt reported the case of a child seven or eight months old with pyelitis in which chill was the most striking symptom. The patient would have a chill at four o'clock, the teeth would chatter, and two hours later the temperature would be 106°. The chills recurred sometimes twice a day. This was a symptom that he had not seen often. In another case the amount of pus in the urine was the largest he ever saw, being about one-sixth the volume of the urine on standing. He believed that chills were rather exceptional, but did occur occasionally with severity.

Report of Three Epidemics of Measles, with Particular Reference to Koplik's Symptom and its Relation to the Rash and the Initial Fever.—Dr. Charles J. Dillon presented a communication with this title. (See page 294.)

Election of Officers.—The election of officers of the Section resulted in the choice of the following: *Chairman*, Dr. Charles Rice; *Secretary*, Dr. Eli Long.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held December 27, 1906.

Dr. Arnold Sturmdorf in the Chair.

Case of Ovarian Pregnancy.—Dr. Sidney D. Jacobson presented this specimen, one of true primary ovarian pregnancy. Such an impregnation, he said, was supposed to take place by the union of the spermatozoa with the ovum in the follicle, and was an exceedingly rare condition. The first report of such a case was made in the seventeenth century. In 1835 Velpeau published a work on this subject when ovarian pregnancies were believed to be common, and he showed that the cases reported to be instances of ovarian pregnancy were not entitled to that name. The Germans had always admitted the possibility of ovarian pregnancy, but the English had opposed that view. In 1891 Bland Sutton was the last to hold out that there was any such thing as ovarian pregnancy. So many cases were reported that in 1878 a gynecologist postulated the formulæ, viz., (1) the tube had to be normal; (2) the fetal sac must occupy the position of the ovary; (3) the ovarian ligament must connect with the uterus; (4) definite ovarian tissue must be found in the sac of the growth. The specimen showed a little fetus in a small cavity almost in the center of the ovary. The woman was 28 years old, married eight years. She menstruated at 14 and about every thirty days since. She became pregnant in the third year of her married life and had a normal full term pregnancy and delivery. She was curetted when seven months married for stenosis of the os. She had had three miscarriages since. On the 11th of October she was supposed to menstruate. Four days later she began to "spot." On the 20th a severe hemorrhage occurred, and she passed a piece of flesh the size of a walnut, whitish in color, probably decidua. Dr. Jacobson saw her on the 21st, advised her removal to the hospital, and, on the 23d, twelve days after her supposed period had taken place, operated. The operation was not at all difficult. The diagnosis of ectopic pregancy had been comparatively easy.

Dr. George H. Balleray believed that time should be taken to have the specimen thoroughly examined by a committee to find out if the specimen presented by Dr. Jacobson was truly one of ovarian pregnancy. These cases were so extremely rare that his diagnosis should not be accepted until a more thorough examination had been made by fully qualified experts.

Dr. H. N. Vineberg did not believe that they should accept the specimen as one of ovarian pregnancy on macroscopical evidence alone. There should first be a thorough examination of the specimen by two or three experts.

Specimen of Calcified Ovary.—Dr. Henry C. Coe presented this specimen. The patient from whom it was removed was 29 years old, single, and was admitted to the hospital October 23. She had never been pregnant. She was told ten years ago that she had a tumor. She had no symptoms until two years ago. She had a large fibroid which extended to within two inches of the umbilicus. She had no pain. The only indication for operation was the rapid growth of the tumor and hemorrhage. Operation was performed on October 25, a supravaginal hysterectomy being done. The appendix was also removed. Both ovaries were diseased, the right being cystic, the left calcified, as shown by the specimen. She was discharged cured on the twenty-fifth day. An interesting point arose as to whether this was an osteoma of the ovary. Such a case had never been reported. Calcification of the corpus luteum was a rare condition. He presented such a specimen in 1899. The condition was first described many years ago. Dr. Coe then read extracts from the report of Williams' case. The specimen presented showed the ovary to be filled with calcareous material, and was probably of inflammatory origin.

Dr. H. N. Vineberg said he could add one more to the list. This woman had inflammatory symptoms for two

years, and he found the uterus retroverted; behind the uterus a hard nodule was to be felt which he thought to be a fibroid undergoing calcification. At operation this proved to be an ovary; both ovaries were involved. He excised the calcareous part and left some ovarian tissue behind, and the woman had menstruated since. The pathologist's report proved this to be an undoubted case of calcified ovary.

Dr. SIDNEY D. JACOBSON said that it would be well to bear in mind the possible existence of calcified ovaries in making radiographs for the purpose of determining calculi in the kidney or ureters.

Conservative Surgery in Severe Inflammatory Affections of the Uterine Adnexa.—Dr. HIRAM N. VINEBERG read this paper (See page 217.)

Dr. HENRY C. COE said that when this subject came up he thought of his experience extending back twenty years, when he began his work, and observation on a large number of cases on whom he had performed the radical operation, *i.e.* removal of tubes and ovaries. No one with such an extended experience with young women 25 or 30 years old, from whom both ovaries had been removed, could help but be impressed with the serious consequences which followed this radical procedure. To-day they believed it to be absurd the wholesale way the ovaries were sacrificed, not only for disease but when prolapsed. Some of these individuals had climacteric disturbances which lasted ten or twenty years. Operators to-day agreed that it was best, whenever possible, to leave in some of the ovarian stroma. Numerous cases of pregnancy following this operation have not been reported. Dr. Coe always tried to save some ovarian stroma, but with little hope of pregnancy following; if the patient menstruated, he felt very well satisfied; it was very rare for pregnancy to follow. In most of these cases the end of the tube became occluded. No matter how careful one was in the technique, or how great an experience one might have, there was a great uncertainty as to what the ovarian tissue would do afterwards; some patients menstruated normally for two or three years, and then menstruation would cease. In young married women, with chances of conceiving, it was very disappointing for menstruation to cease, even though there be no climacteric disturbances. Every effort should be made to save ovarian tissue, even in cases where the ovaries were buried in adhesions, or in pus cases; but in so doing he sutured them so that they would not drop down. In some cases menstruation had gone on normally, although there were no chances of pregnancy. Dr. Coe said he wished to protest against the growing habit of extirpating the whole uterus for fibroids. He had five or six cases in his office with absolutely no symptoms, not even pressure symptoms, and in all extirpation of the uterus had been advised. Dr. Coe now consistently practised conservative surgery, but not so much so as formerly.

Dr. JAMES N. WEST felt that they knew comparatively little about this subject, and he could not agree with the statement that it had been thoroughly worked out. Many authors had reported pregnancy following conservative work on the tubes and ovaries, but they all failed to note the nature of the operation. He believed that when they did conservative work upon the tubes and ovaries the operation should be carefully recorded and a very careful record of the case kept. The accumulation of such knowledge would be of great value. Dr. West had practised conservative surgery all his professional career, but he believed there was much of interest on this subject not yet worked out. In looking over the literature on this subject, he was unable to find recorded a single case where, after a double pyosalpinx, the patient had become pregnant. In general it was wise, in women before the age of forty, to leave the ovaries behind when possible. He said they might divide these cases up into groups: Women approaching the menopause, women in the active period of menstrual life, and women who had passed the menopause. In women approaching the menopause he would always consider the possibility of preserving the tubes and ovaries, and here the element of personality entered. Sentiment should not be wasted over tubes and ovaries in women of 40 or 45 years of age. If they were sufficiently diseased to demand opening the abdomen, remove them. In women passed the menopause, if the abdomen was opened to remove a uterine tumor, then he believed in removing both ovaries. He emphasized the importance of leaving a portion, if possible, of one ovary when operating upon women in active menstrual life. But if one ovary was the seat of a benign tumor, the other being comparatively healthy, he believed it best to remove the entire ovary with the benign tumor. If one or the other ovary became the seat of malignant disease it was wise not only to remove both ovaries and tubes, but much of the broad ligament and uterus as well, unless the disease was semi-malignant.

Dr. SAMUEL W. BANDLER said that in the case of papillomata or papillomatous degeneration of an ovarian cystoma the other ovary should be removed, even if it appeared normal. In the case of unilocular or multilocular cystomata or dermoid cysts, the other ovary, if apparently normal, should be retained. If, however, it showed structural changes, resection should be practised in younger women. In older women it should be removed. When, however, involvements of the tubes and ovaries with adhesions, or marked inflammatory affections of the adnexa, were the indication for operations, he believed the question entered a different phase. The character of the surgical procedure was materially altered by the indications which prompted the operation. The indications were sterility and pain. He said he had yet to perform his first conservative abdominal operation solely for primary or secondary sterility without pain or without some malposition of the uterus, or without tangible involvement of the adnexa. That pregnancy might result after mild inflammatory affections of the tubes was shown by uterine pregnancy following or complicating ectopic gestation, but, in such cases, adhesions were not present. They represented, in his opinion, very mild cases of salpingitis. Again, there were many cases in which the opposite tube was markedly involved by inflammation, so that he had removed the tube on the opposite side, because of its involvement and closure by adhesions. In any involvement of the tube and ovary associated with adhesions when pain furnished the indication for operation, the tubes were the main consideration. It should not be forgotten that the tubes furnished the path for peritoneal infection. If the tubes were closed by adhesions, the value of resection was associated with the danger that the inner half of the tube might continue the formation of new adhesions, and only complete removal of the entire tube would insure against this complication. If no adhesions existed he failed to see the value of resection of the tube. The results that were desired in the performance of conservative surgery were pregnancy, freedom from pain, and from constitutional annoyance. A conservative operation on the tubes, with retention of ovarian tissue, assured the continuation of menstruation, the possibility of pregnancy, and freedom from constitutional annoyance, but did not assure freedom from future adhesions with pain. He said he was not aware of a single case where a patient, primarily sterile for years, and in whom conservative operation in the form of resection of the tubes or the formation of new ostia were done, had resulted in pregnancy. He was not aware of a case where conservative surgery was done for purulent involvement of both adnexa with adhesions that was followed by subsequent pregnancy. If they contrasted the relative advantages and disadvantages of the conservative and radical procedures, the results in the performance of conservative operation for an inflammatory condition were poor as regarded future pregnancy, they were very uncertain as to freedom from pain or extension of inflamma-

tion. He believed that ovarian tissue should be left or transplanted if one of the ovaries showed no marked involvement. He had yet to observe in his cases incurable annoying symptoms resulting from double ovariotomy; almost all these annoying symptoms of the artificial climacteric might be overcome by the early and consistent use of ovarin. All conservative operations for inflammatory conditions were accompanied by the risk of no cure of the symptoms, and possibly an extension of the inflammation in the structures operated upon, or extension of the inflammation to structures not touched at operation. Therefore, the only legitimate reason was the desire for maternity. Any patient desirous of pregnancy, and who was willing to take the risk of failure, or to chance a possible return of the annoying symptoms, was entitled to consideration. Only the practical experience of individual surgeons who compiled and compared the results of *like cases* would eventually furnish a definite basis for future action. In his hands the immediate results of conservative operations on the adnexa for inflammatory conditions had been most unsatisfactory.

Dr. G. H. Balleray said that cases like those referred to by Dr. Vineberg were not to be taken as illustrations of conservatism, but rather of extreme radicalism. Opening the abdomen to puncture two or three small cysts of the ovary, and possibly resect a very slightly diseased tube, was anything but conservative. Those cases should be let alone. Cases of pyosalpinx should not be operated upon during the acute stage, as the operation was liable to be followed by fatal peritonitis. Later, when the diseased adnexa had become walled off from the peritoneal cavity, and the pus was more or less sterile, the operation was much safer. In nearly all bad cases of pyosalpinx the ovaries were so badly diseased that their complete extirpation was imperative. In these cases the patient was an invalid as the result of the pathological condition of the uterine appendages, and they should be removed *in toto*. The object of an operation in such cases was to cure the patient—not to increase her capacity for breeding. Leaving a portion of diseased ovary in the pelvis in such cases, in the hope of a subsequent pregnancy, was sentimental nonsense. The fear of a stormy artificial menopause following the ablation of badly diseased appendages was not well founded. He had never seen violent nervous symptoms occur after such operations. The rule was that the patients were cured of their sufferings, and gained rapidly in flesh and strength. So far as sterility was concerned, those patients were already sterile before the operation was performed, having been literally unsexed by the destructive disease of their uterine appendages, and the operation did not aggravate their condition in that regard. A few years ago normal ovaries were removed by the peck for all sorts of nervous ailments, real and imaginary, which were supposed to be due to some sort of occult telepathy originating in the ovaries. Many of these patients were made worse by the operation. Removal of *normal* ovaries might be followed by serious perturbation of the nervous system, but when the ovaries were so diseased that their function in the economy was destroyed, their removal was not followed by any violent nervous disturbance. Patients who ceased to menstruate after the removal of their appendages were, according to his experience, better off than those who continued to menstruate. In all cases of double pyosalpinx both tubes and ovaries should be removed. He indorsed the protest entered by Dr. Coe as regards the removal of the uterus for small fibroids the size of a walnut. He had seen several such cases, and in some the patient had died as the result of the operation. This was pure surgical quackery, and should be condemned by all reputable members of the profession.

Dr. George H. Mallett said he distinctly remembered the many discussions on radicalism and Dr. Lawson Tait's statement that when one ovary was diseased the other always became so, and should, therefore, be removed. Then the pendulum swung the other way, and now it was customary to save all that was possible in operations upon the uterine adnexa. A great difficulty was in determining whether or not an ovary was diseased. In determining upon the proper treatment many things were to be considered, such as the age of the individual and the condition of each ovary. All to-day practically practised conservative surgery on the tubes and ovaries, and he did not know an operator who removed tubes or ovaries if it was possible to save them.

Dr. Sidney D. Jacobson referred to the mutilating operations that were being done and the ablation of the cervix uteri, and said the tendency of gynecologists was to amputate the cervix because of few tears.

Dr. Arnold Sturmdorf said that conservatism for him did not exist, and that he removed all that he thought to be actually diseased.

Dr. H. N. Vineberg said that these cases which had been objects of conservative treatment, and which gave so much trouble were those which had been subjects of much speculation, and had been permitted to go on for three, four, five, or six years, becoming hopeless because seen so late, that was, after the process had gone on for years. In case of pus tubes, they ought to be removed, as this removed the source of a possible subsequent infection. Even though the pus be walled off and become sterile, toxins might develop which would set up inflammatory changes in the surrounding structures. With regard to conservative surgery in cases of malignant disease, he recalled a case seen ten years ago, a woman with an enormous carcinoma of the ovary. He removed that one. She later was married, gave birth to a child, and had been well ever since. Where one had a clean-cut case, with the growth not extending through the capsule, one would be safe in leaving the ovary. With regard to the occlusion of tubes after plastic operation, he said all knew the difficulty of occluding a tube when it was desired to prevent pregnancy.

Election of Officers.—*Chairman*, Dr. Howard C. Taylor; *Secretary*, Dr. William S. Stone.

SECTION ON MEDICINE.

Stated Meeting, Held January 15, 1907.

Dr. Warren Coleman in the Chair.

Two Cases of Cerebrospinal Meningitis.—Dr. C. H. Lewis reported these cases.

The first case was in a male, 54 years old, a laborer. Two days prior to his admission to St. Vincent's Hospital he was well and working. That night he returned home with a slight headache. The following day he became irritable and violent and was sent to the hospital as a case of "acute mania." On admission his temperature was 101°, pulse 80, and respirations 34. He required forcible restraint, and, during his lucid moments, complained of headache. The next day his temperature had dropped to normal, his pulse was 82, and respirations were 24, and he said he felt well and wanted to go home. He was urged to remain until the next day. That night a stuporous state came on, and the next day he had injected conjunctivæ, slight photophobia, some mental irritability. The temperature was 100°. Aside from these symptoms there was nothing to indicate the gravity of his condition. The white count was 18,000, with 81 per cent. polynuclears. The following day deep coma supervened. A lumbar puncture removed half an ounce of very turbid fluid which contained many pus cells and a large number of the *Diplococcus intracellularis*. He died that evening, just four days after the first symptoms were noted. This case was notable, first, in the absence or late appearance of characteristic symptoms, and, secondly, in the disappearance of all physical, mental, and psychical signs and symptoms thirty-six hours before death, and, thirdly, the rapid and virulent course during the last twelve hours.

The second case was that of a 'longshoreman, 42 years old, who was admitted to St. Vincent's Hospital, December 11, 1906, with a history of vomiting, and complaining of great pain in the metatarsophalangeal joint of the left little toe. He had been ill nine days prior to admission (the last five days in bed) with gastric pain, constant vomiting, and general indefinite and dissociated symptoms looking toward an influenzal infection as much as anything. He had taken no alcoholic drinks for the past six months. On the night before entering the hospital he was awakened by stabbing pains in the little toe joint, which he described "as though hot irons were driven into it." The temperature was 103.6°, pulse 100, and respirations 28. The leucocytes numbered 10,000. A soft systolic heart murmur was heard at the apex, but nothing further was found relevant to this report on careful physical examination. From the swollen and reddened joint, the sudden and characteristic onset of the pain, the chronically deformed finger joints, and two small trophi in the right ear, he made the diagnosis of acute gout, attended with a gastritis of unknown cause. On the night of the following day the right elbow joint was seized with an attack similar to the one affecting the toe joint, and on the next day the elbow presented relatively a small tophi in the right ear, he made the diagnosis of acute hospital, the vomiting ceased. No new joints were involved, but the pain and inflammation persisted in those already affected. The temperature, which had risen to 104° shortly after admission, had remained about this point. On account of the heart murmur and the rising leucocyte count, now 18,000, with polynuclears 80 per cent., a blood culture was made with negative results. The next day, the fourth in the hospital, symptoms presented which suggested the true nature of the disease. There appeared a mild delirium, unequal and stiff pupils with a moderate injection of the right conjunctiva, herpes labialis, tache cérébrale, and slight neck rigidity. On the day following the delirium he became noisy, then stuporous. Photophobia, sluggish pupils, increased injection of right eye, and neck rigidity were added to the picture. Up to this time the left eye was unaffected. The next day, the sixth in the hospital, the left pupil was greatly dilated. There was a conjunctivitis, opacity of the cornea, and choroidoiritis, and the eye resembled an extreme case of panophthalmitis, with considerable protrusion of the eyeball. Purpuric spots appeared on the trunk, and for the first time a Kernig sign was elicited in the right leg only; this was not marked. The leucocytes now numbered 24,000. A lumbar puncture withdrew two and a half ounces of a clear fluid under considerable pressure, which, after centrifuging, revealed a small number of the *Diplococcus intracellularis*. The patient died shortly after midnight, the last temperature being 104.8°, the highest point reached, the lowest being 103.6° on admission. Dr. Lewis was inclined to believe that true gout complicated the specific infection, although the possibility of an infective arthritis must be considered. The complications of the disease, the late appearance of cardinal symptoms, and the entire absence of some, the protracted and excessive vomiting, twelve days in all, a symptom alluded to by Osler, the rapid destruction of the left eye, the continuously high temperature, and the clearness of the spinal fluid and sparse number of diplococci so late in the disease, made the case of particular interest, and emphasized once more the protean nature of this dread disease.

Acid Intoxications.—Dr. C. G. S. Wolf read this paper.

Dr. Max Einhorn spoke of some experiments he had made some time ago to find out how certain animals acted in different solutions of sugar, etc. In the first experiments he added simply acid and water, and at the end of twenty-four hours the frogs became comatose, could not move, and acted very differently from others. Upon the addition of alkalies those frogs became lively and recovered their normal condition. He believed without doubt that some conditions of acidosis could be cured by the addition of alkalies. The acid condition in diabetes did not necessarily depend upon starvation. He thought it was rather due to the increase in the animal food, which, as a rule, was taken in diabetes. All vegetables were rich in potassium salts, and animal foods were rich in sodium salts. A patient on a vegetable diet would excrete alkaline urine; on a meat diet, acid urine. Therefore, if the defect was due to lack of alkalies, the patient should be fed on alkaline material. Of course, if there was some present, there might be other factors causing it.

Dr. Heinrich Stern said that he was glad that somebody else had expressed similar opinions as regards the acetone bodies, as he himself had done for a number of years. However, to substitute another substance for the hypothetical toxicity of the betaoxybutyric acid derivatives, as Dr. Wolf had done in bringing forth oxalic acid, did not bring us one step further in the proper understanding of acid intoxication, acidosis, or acid coma. Oxalic acid was not present in the blood serum of diabetics when in the comatose state in any larger amounts than one would expect in any morbid state in which metabolism was more or less seriously interfered with. With much greater justification could we fasten the train of untoward phenomena in so-called acidosis to formic acid, or at least to the various exceedingly toxic combinations of formic acid which might arise in the organism in considerable amounts. He had again pointed out in his book on the autotoxicoses that betaoxybutyric acid was not that important factor in the production of acid intoxication, so called, which it was supposed to be by Studelmann and others, and especially by von Noorden. All acid principles seemed to contribute toward the causation of an acidosis, which latter, however, was a term by no means denoting the true condition prevailing at the time in the body fluids. At the foundation of acidosis, Dr. Stern maintained, there was a faulty alkali supply. Normally, the withdrawal of alkali was soon followed by a new supply. Such a renewal did not take place, or to an insufficient degree only, in fasting organisms or in underfed individuals. On the other hand, how were they to explain the alkali deficit in the face of abundant and even overabundant alkali ingestion? He had made up his mind long ago that we could experiment until doomsday without being able to fasten the various comatose states to a chemically-active poison or poisons. He was of the opinion, which he had already maintained in a number of articles and discussions, that the entire question involved was of a physicochemical or physicoelectrical nature, that bodily activity, etc., was dependent upon an intrasystemic osmotic equilibrium, and that the concentration of the body liquids and the degree of ionic activity displayed therein were without a shadow of a doubt at the bottom of most comatose conditions.

Dr. Joseph C. Roper said that at the New York Hospital acid intoxication was not taken as the cause of death. It was merely an associated condition.

Dr. Wolf, in reply, said that one might get up acidosis, but not an acid intoxication. They usually distinguished sharply between acidosis, which was a distinct entity, and acid intoxication, which was not a distinct clinical entity. If a subject was fed on saccharal and carbohydrate material, the subject would have acidosis, but not acid intoxication.

Dr. Roper accepted the correction.

Localized Intestinal Atonies and Their Relation to Neurasthenia.—Dr. G. R. Lockwood read this paper. He said that constipation was roughly divided into two classes, the spastic and atonic form, and he gave in a few words the characteristics of these two forms. He then called attention to a form, standing between these two, a definite clinical entity, a form commonly seen, productive of annoying symptoms of intestinal toxemia and neurasthenia, a form readily amenable to treatment, to which he applied the name "cecal atony." Examination showed the first part of

the ascending colon to be given some consideration. The latter could not be readily palpated, but palpation elicited a splashing and succussing sounds quite pathognomonic. Especially were these sounds elicited by rapid vibratory movements with the knuckles of the flexed fingers perpendicularly applied. The transverse portion was normally palpable, but no succussions were noted, unless an enema was given just prior to the examination. The descending portion might be readily rolled under the finger, well contracted, often as much as in the spastic form. In this form he had a local stasis in the cecum, with normal propulsion in the transverse and descending portion. The stools varied in a number of ways. There might be intermittent attacks of diarrhœa, the stools being large, fermenting, fetid, often of acid reaction, and containing mucus and small hardened feces, like uncooked beans in a porridge. This appearance to him was quite characteristic. The variety of stool was due to an exacerbation of the local catarrhal colitis of the cecal region, due to the prolonged presence of fermenting fecal masses in the ascending colon. In the majority of the cases there was a history of the overuse of cathartics. In the form of cecal atony, autointoxication symptoms of intestinal origin were common, varied, in many cases resulting in prolonged invalidism. It was the cause of a great many cases of so-called "primary neurasthenia." The treatment consisted of diet, drugs, massage, and irrigations, and attention to the general nervous state. Without reference to any catarrhal state of the bowels, the diet should consist of coarse particles of food and in a generous amount of fat. The worst diet was a "milk" one. The drugs to be used were the muscle tonics. Irrigations were indicated when there were marked autointoxication symptoms. The ordinary form of high enema, in which two to four quarts of water were introduced at one time into the bowel, was to be deplored, for it overdistended the bowel and increased the atony. He showed the section the irrigation outfit he used. Massage constituted the most important part in the treatment. The general health must always demand the closest and most detailed attention.

Dr. MAX EINHORN called attention to the recognition of the atonic condition of the bowel by means of the *x*-ray. The treatment which would be the most successful was the one directed towards building up the system. He gave plenty of good, plain food, with an increase in the amount of vegetables which would increase the food residue and give more for the bowel to work on. Massage was of great value.

Dr. A. ROSE said that in cases of atony there was a relaxation of the abdominal muscles. The function of these muscles was twofold: first, to keep the abdominal organs in their proper physical condition, and, secondly, to control the innervation and circulation. When the abdominal muscles were relaxed there must be ptosis of different organs; if then these muscles be supported, these organs would return to their proper position and remain there. Therefore, in these atonies one should consider the treatment of the abdominal muscles. The books said nothing about these muscles controlling the innervation and circulation, and the importance of these abdominal muscles had not been considered sufficiently.

Dr. S. J. MELTZER said that from a clinical point of view the observation was interesting, that possibly there should be an area in the colon, which behaved differently from the balance of the colon. He was interested in this statement, because they knew there was a physiological basis for that assumption. Cannon found years ago that the ascending part of the transverse colon behaved differently, inasmuch as there was both antiperistalsis and peristalsis. These observations were made on cats; later on Smith and Elliot found this to be so in some, but not in all animals. Dr. Lockwood had apparently observed this antiperistalsis. He called attention to the fact that the part of the bowel supplied by the hypogastric and that supplied by the sacral plexus behaved differently. Eserine he considered to be one of the worst drugs to give; he had seen it given to a dog, and it resulted in a distention of the gut to the size of an arm. With regard to the atonic condition of the colon in connection with neurasthenia, if one treated the colon to cure the neurasthenia, one must assume the condition of the colon to be a cause of the neurasthenia. That was only one symptom of neurasthenia. As yet they did not know what neurasthenia was, but he did not believe that the condition in the colon was a cause of it.

Dr. LOCKWOOD said that he had had splendid results from the administration of eserine in these cases, and placed much reliance upon it.

Diagnosis and Treatment of Acute Intestinal Obstruction.—Dr. MAX EINHORN presented this communication. The recognition of this condition was based on the absence of stool and flatus in conjunction with symptoms of collapse, tympanites, abdominal pains and vomiting of intestinal contents. The fecal vomiting of ileus must be differentiated from that of hysteria, as well as of cholelithiasis and nephrolithiasis, which often took a similar course. In both these diseases the symptoms of occlusion would moderate after relieving the pain. In true ileus this would not be true, nor, although the pain might be relieved, the inability to pass wind as well as abdominal distention would remain. If the obstruction was in the small intestine all the symptoms were usually much more violent than in occlusion of the large intestine; furthermore, there was in the beginning a marked indicanuria. In obstruction of the large intestine fecal vomiting occurred late, and indicanuria usually on the fifth day of the disease. If the occlusion was well down in the large intestine, the quantity of water which might be introduced into the rectum gave a clew as to the location. The use of the *x*-ray fifteen to twenty hours after giving bismuth was of value in localizing the obstruction. In all cases of obstruction absolute rest should be insisted upon, rest in bed, abstinence from food, absolute rest for the bowel. The patient might be given small quantities of water or small pieces of ice, but no food. If the obstruction was high up in the small intestine, small nutrient enemata were permissible. Subcutaneous salt-water injections were the best means of introducing liquids into the system. Cathartics were to be avoided unless one was fairly certain that he was dealing with a case of obturation by gallstones or hard fecal masses. In order to put the bowel at rest it was best to use morphine or opium. During the last two years the use of atropine in ileus had again been revived and highly recommended. Dr. Einhorn had used it during the past two years in six cases, of which four got well. He believed atropine should be tried in every case. If the patient was not too much weakened, lavage of the stomach should be given, and was of special value if the obstruction was high up. Injections of rather large quantities of water under considerable pressure was at times of value, although some clinicians did not recommend this. Massage was of special benefit when the obstruction was due to fecal impaction, and electricity in the dynamic form of ileus. In grave cases, in which the tympanitic distention was of a very high degree, in which all procedures had failed, and in which operation could not be done, an attempt to relieve the bowel by means of puncture was justifiable.

Dr. S. J. MELTZER and Dr. G. R. LOCKWOOD discussed the paper.

Renal Decapsulation in Eclampsia.—This has already been advocated by several authorities, and Polano also speaks strongly in its favor, although he admits that he is unable to explain the manner in which the operation brings about its results. He recommends that in all cases of severe eclampsia bilateral renal decapsulation should be resorted to, and urges that too much time be not allowed to elapse before making use of this measure, as its chances of effectiveness are greatly increased the earlier it is employed.—*Zentralblatt für Gynäkologie.*

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

ANIMAL MICROLOGY. By MICHAEL F. GUYER, Ph.D. 8vo, 240 pages, illustrated, muslin. The University of Chicago Press, Chicago. Price, $1.75.

THE PRACTICAL MEDICINE SERIES. By GUSTAVUS P. HEAD, M.D. Vol. VIII. 12mo, 358 pages, muslin. The Year Book Publishers, Chicago.

THE DIAGNOSIS OF NERVOUS DISEASES. By PURVES STEWART, M.A., M.D., F.R.C.P. 8vo, 380 pages, illustrated, muslin. Edward Arnold, London.

PROGRESSIVE MEDICINE, A Quarterly Digest. Edited by HOBART AMORY HARE, M.D. 8vo, 349 pages, illustrated, paper. Lea Bros. & Co., New York. Per annum, $6.

THE PRACTICE OF OBSTETRICS. By J. CLIFTON EDGAR. Third edition, 4to, 1071 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

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State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

MEDICAL EXAMINING BOARD OF VIRGINIA.

June 19, 20, 21, and 22.

CHEMISTRY.

1. Define valence, base, a salt, dialysis, alloy.
2. Describe the chemistry of alcohols and ethers.
3. Give formula of ammonia. The sources and uses of ammonia in medicine and the arts.
4. Give chemistry of respiration, showing what is inhaled, what is exhaled, and how the gases enter and leave the blood.
5. Show by equation how nitric acid is formed by the action of sulphuric acid on potassium nitrate.
6. Complete the following equations:

$$AgNO_3 + NaCl. =$$
$$4HF + SiO_2 =$$

TOXICOLOGY.

1. Give symptoms and treatment for carbolic acid poisoning.
2. State symptoms of chronic arsenic poisoning with treatment for same.
3. Describe the difference between alcoholic, uremic and opium coma.

MEDICAL JURISPRUDENCE.

1. Define medical jurisprudence.
2. Give the reliable signs of death.
3. How would you distinguish between insanity and idiocy.

OBSTETRICS, GYNECOLOGY, AND PEDIATRICS.

1. What signs are brought out by abdominal palpation in the last stages of pregnancy, and their relative value?
2. Detail briefly the hygienic measures necessary for the successful issue of pregnancy?
3. Define pelvimetry; what measurements obtained thereby should determine interference?
4. What circumstances, other than pelvic contractions, may cause dystocia?
5. Describe the management of delivery in breech presentations.
6. Describe briefly an operation for relaxed pelvic outlet.
7. Detail the symptoms and possible terminations of pelvic peritonitis.
8. Treatment of rectovaginal fistula.
9. What therapeutic agents should be cautiously exhibited in infancy, and mention some that they bear proportionately better than adults.
10. Mention the most important diseases of the larynx in children, giving the causes for their greater danger.

SURGERY.

1. Give the diagnosis and treatment of acute osteomyelitis.
2. Give the cause and treatment of varicose ulcers.
3. Name the surgical diseases common to man and the domestic animals.
4. Give the differential diagnosis between (a) concussion of the brain so-called, (b) fracture of the skull, and (c) rupture of the middle meningeal artery.
5. Give briefly Cohnheim's hypothesis as to the origin of tumors
6. What is hydrocele? Give diagnosis and treatment.
7. Give the nature and treatment of Pott's fracture.
8. Name the dangers and give the treatment of carbuncle.
9. Give the causes and treatment of cystoureteropyelitis.
10. Name the dislocations of the elbow. Give the symptoms and treatment of the backward dislocation.

It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.

ANATOMY.

1. Describe the upper extremity of the tibia.
2. Describe the ligaments of the hip joint.
3. Describe the external oblique muscle, including a description of the superficial abdominal ring.
4. Give the commencement, termination, relations, and branches of the brachial artery.
5. Give the commencement, termination, and relations of the internal jugular vein.
6. Describe the duodenum.
7. Give origin, course, and distribution of the median nerve.
8. Name the muscles, nerves, and arteries severed by a cross section of the thigh at the junction of the middle with the lower third.

EMBRYOLOGY.

1. At what stage of embryonic life does the development of the alimentary canal commence, and from what layer of the blastoderm is it formed?
2. What changes occur in the vascular system of the fetus at birth?

PRACTICE, ETIOLOGY, AND DIAGNOSIS.

1. To what disorders are persons of a lithemic diathesis most prone? Outline dietary and treatment of the lithemic state.
2. State early symptoms and causes of tuberculosis.
3. State physical symptoms and diagnosis of asthma.
4. In what conditions is severe pain a prominent symptom, and to what extent does localized pain aid recognition?
5. State cause and management of acute milk infection.
6. Describe the stools of acute enteritis, typhoid, obstructive jaundice.
7. Differentiate between scabies and pustular eczema.
8. What is aphasia? Give cause, and differentiate between the ataxic and aphasic forms.
9. Give symptoms and treatment of chorea.
10. What drugs influence character of stools?
11. What clinical significance attaches to cardiac arythmia?
12. Cause and treatment of stomatitis.

PATHOLOGY.

1. Name the phenomena comprised (changes which occur) in an inflammatory process.
2. State the systems through which, and how necrosis is produced by disordered nutrition.
3. What is leucopenia, and in what important disease does it occur?
4. What is an exudate, and what is the character of the exudate in lobar pneumonia, bronchopneumonia, and acute peritonitis?
5. Name the histological elements to be found in a fibro-osteochondromyxo sarcoma. By what route do the metastases of sarcoma generally occur?
6. Give the morbid anatomy of acute articular rheumatism (rheumatic fever), and name the possible complications of this disease.

BACTERIOLOGY.

1. Define and illustrate the terms, aërobic, obligate, pleomorphous, and sporogenous, and name and explain the two varieties of chemotaxis.
2. Describe the microorganism of anthrax, and give its pathogenicity.
3. What special culture medium is required for the growth of the gonococcus? Give the pathogenicity of the gonococcus.

NEUROLOGY.

1. Give the etiology of locomotor ataxia.
2. Give the symptoms of cerebral apoplexy, and name the conditions the coma of which may be simulated by an apoplectic stroke.
3. Give the prognosis in tubercular meningitis and in epidemic cerebrospinal meningitis, and the general indications of treatment in the latter.

MATERIA MEDICA.

1. Name, with dose of each, the preparations of salicylic acid; give its physiological action, and state in what form it is to be administered.
2. Give the preparations of belladonna; describe the toxic effects and give antidotes.
3. Give the chief alkaloid of cinchona, its dose, and its physiological action.
4. Name the preparations of the chlorides of mercury; give dose and differentiate the physiological action of each.
5. Name the mineral acids and mention the special properties of each.
6. Give the physiological action of opium; name its most important alkaloids and give dose of each.

THERAPEUTICS.

1. Into what two classes are bitters divided? Give therapeutic uses. Contraindications. Time of administration.
2. How may the two chlorides of mercury be administered? Give their therapeutic uses. In bilious attacks, when you give calomel, what remedy often used to allay nausea would you be particular not to give?
3. Why would you use a strong solution of arsenic when applied over large surfaces? In giving Fowler's solution in increasing doses what untoward symptoms would indicate that the dose should not be further increased?
4. (a) Give the therapeutic application of drugs in the different stages of pneumonia; (b) give the comparative value of chloroform and ether as an anesthetic.
5. (a) Describe the therapeutics of iodine and its salts; (b) what are the therapeutic uses of diuretics?
6. Prescribe a local application for erysipelas, for rhustoxicodendron poisoning. Name some remedies used for epistaxis, croup, singultus, ptyalism. Write a prescription for night-sweats of phthisis, for ascites.

PHYSIOLOGY.

1. What are the uses of the blood, and what is the difference between arterial and venous blood?
2. What is the effect of the pneumogastric nerve upon the heart?
3. What is meant by the term vesicular murmur?
4. What are the characteristics of peptones?
5. Name the pancreatic ferments, and describe the action of each.

HYGIENE.

1. Name the qualities desirable in water for drinking and domestic purposes.
2. Give best methods for disinfecting a house in which there has been a case of smallpox.
3. What precautions should be taken by a physician attending a case of diphtheria.

HISTOLOGY.

1. What is meant by endochondral formation of bone, and describe process briefly.
2. Describe formation of an artery, giving coats.

LARYNGOLOGY.

1. What are the symptoms, course, and treatment of acute laryngitis?
2. Give the diagnosis and treatment, both general and special, of laryngismus stridulus.
3. Give the symptoms, course, some common complications, and treatment of acute follicular tonsillitis.

RHINOLOGY.

1. What anatomical arrangements within the nares render the treatment of chronic rhinitis difficult?
2. Give the most generally accepted theory of predisposing and exciting causes of hay fever, and describe its symptoms.

OPHTHALMOLOGY.

1. What are the macroscopical appearances of the most common forms of keratitis, and the appropriate treatment?
2. Give the causes, symptoms, and general and local treatment of trachoma.
3. Give cause, symptoms, and treatment, both prophylactic and remedial, of ophthalmia neonatorum.

OTOLOGY.

1. Define tinnitus aurium and give the causes of it.
2. Give briefly the diagnosis and treatment of acute otitis media.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

MEDICAL EXAMINING BOARD OF VIRGINIA.

June 19, 20, 21, *and* 22, 1906.

CHEMISTRY.

1. *Valence* is the combining power of an atom of an element as compared with that of an atom of hydrogen.

A *Base* is a compound which on entering into double decomposition with an acid produces a salt and water.

A *Salt* is a substance derived from an acid when the hydrogen of the latter has been partially or completely replaced by an electropositive element or elements (a metal or metals).

Dialysis is the process of separating colloids from crystalloids.

An *Alloy* is a substance composed of two or more metals.

2. An *Alcohol* is the hydroxide of a hydrocarbon radi-

cal. Alcohols are monoatomic, diatomic, and triatomic, according to the saturating power of the radical. They are also classified as primary, secondary, and tertiary. The primary alcohols are characterized by the group CH_2OH, and yield on oxidation, first an aldehyde, and then an acid. Secondary alcohols contain the group CHOH, and on oxidation yield a ketone. The tertiary alcohols contain the group COH, and when oxidized two acids or ketones are produced, each with fewer carbon atoms than the original alcohol. Ethyl alcohol, $CH_3.CH_2OH$ is a primary alcohol; isopropyl alcohol, $CH_3CHOH.CH_3$ is a secondary alcohol; tertiary butyl alcohol, $(CH_3)_3COH$ is a tertiary alcohol. Ethene glycol, $CH_2OH.CH_2OH$ is a diatomic alcohol, and glycerol, $CH_2OH.CHOH.CH_2OH$ is a triatomic alcohol.

An *Ether* is the oxide of a hydrocarbon radical. In *simple ethers* the radicals are the same, as $(C_2H_5)_2O$, ethyl ether; in *mixed ethers* the radicals are different, as $CH_3.C_2H_5.O$, methyl ethyl ether. A *compound ether* is a substance derived from an acid by replacing the hydrogen of the acid by a hydrocarbon radical, thus $C_2H_5.NO_2.O$, ethyl nitrate or nitric ether; compound ethers are now generally called *esters*.

3. Ammonia; formula is NH_3; sources, in nature from the decomposition of animal or vegetable matter containing nitrogen and hydrogen; it is manufactured from ammonium chloride and calcium hydroxide according to the equation: $2NH_4Cl+Ca(OH)_2=2NH_3+CaCl_2+2H_2O$. It is used as a respiratory stimulant, a circulatory stimulant, a counter-irritant; it neutralizes acids, making definite salts known as ammonium salts, which are formed by the direct combination of the ammonia with the acid. It is also used in the artificial preparation of ice.

5. $KNO_3+H_2SO_4=KHSO_4+HNO_3$.

6. $AgNO_3+NaCl=AgCl+NaNO_3$.

$4HF+SiO_2=SiF_4+2H_2O$.

TOXICOLOGY.

1. *Symptoms*:—buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark. *Treatment*:—emetics, white of egg, stimulants. Alcohol is said to be antidotal.

2. *Symptoms*:—malaise, anorexia, drowsiness, photophobia, conjunctivitis, eczema, weakness, emaciation, local paralysis, stripping off of the skin and dropping of the hair. *Treatment*:—remove the causes, give freshly prepared ferric hydroxide, castor oil, diuretics.

3. In *alcoholic coma* there may be an odor of alcohol on the breath, the patient can generally be aroused by shouting in his ear, there is no paralysis, the pupils are normal or dilated, respiration is practically normal, the pulse is first rapid and later feeble, and the skin cool.

In *uræmic coma* there may be a urinous odor to the breath, the urine is scanty and contains albumin, there is slow pulse with high arterial tension, the pupils are usually small and equal, respiration is deep and may be quickened, the body temperature may be above normal or subnormal.

In *opium coma* the pupils are contracted, respiration is slow, pulse slow and full, body temperature is normal or subnormal, there may be the odor of laudanum on the breath.

MEDICAL JURISPRUDENCE.

1. Medical jurisprudence is the application of the knowledge of any of the branches of medicine to the problems and requirements of the law.

2. The complete and permanent cessation of circulation and respiration, rigor mortis, loss of body heat, pallor of the body, putrefaction.

3. Idiocy is congenital.

OBSTETRICS, GYNECOLOGY, AND PEDIATRICS.

9. The following should be cautiously exhibited in infancy:—cocaine, opium, apomorphine, jaborandi, the coal-tar derivatives, acids, and some of the preparations of iron. The following are relatively well tolerated:—arsenic, belladonna, chloral, calomel, bromides, iodides, quinine, and acohol.

SURGERY.

3. Tuberculosis, hydrophobia, actinomycosis, glanders, anthrax, septicemia, pyemia, cancer and other tumors, cleft palate and hare-lip.

4. (a) *Concussion of the brain* is characterized by sudden onset, the patient is unconscious but can be aroused, the muscles are relaxed and flaccid, the pulse weak and slow, respirations faint and irregular, the skin pale and cold, the sphincters relaxed, the pupils are equal and react, the temperature is subnormal but is the same on both sides of the body.

(b) In *fracture of the skull* (at the base) there will be hemorrhage and escape of the cerebrospinal fluid either from the nose, into the orbit, from the ear, or into the loose cellular tissue of the mastoid or occipital region, there will be indications of injury to one or more of the cranial nerves, such as loss of smell, blindness, ptosis, strabismus, facial paralysis, internal deafness.

(c) In *rupture of the middle meningeal artery* there will be first a concussion with its accompanying unconsciousness; this will be followed by a temporary return to consciousness, lasting from a few minutes to an hour or more; this is succeeded by a gradually increasing drowsiness, ending in coma.

5. Cohnheim suggested that, owing to some slight developmental errors, small portions of embryonic tissue become misplaced and surrounded by cells belonging to a different blastodermic layer. These misplaced cells lie dormant, but are still alive; and later some blow or other irritant acts as a stimulus and starts them growing, and the result is a tumor.

8. The dangers of carbuncle are:—hemorrhage, septic phlebitis, septic clots or emboli, septic meningitis, exhaustion, septicemia, or pyemia.

ANATOMY.

8. *Muscles*:—Vastus externus, vastus internus, crureus, rectus femoris, sartorius, gracilis, adductor longus, adductor magnus, biceps, semimembranosus, semitendinosus.

Arteries:—Femoral, profunda femoris, external circumflex, comes nervi ischiadici.

Nerves:—Anterior crural, middle cutaneous, internal cutaneous, long saphenous, external cutaneous, obturator, great sciatic, lesser sciatic.

EMBRYOLOGY.

1. The development of the alimentary canal begins at a very early period of embryonic life, the enlargement which later becomes the stomach being noticeable as early as the fourth week. The alimentary canal is derived from all three layers of the blastoderm, but particularly from the hypoblast and the mesoblast.

2. The hypogastric arteries shrink and become impervious, the foramen ovale closes, the eustachian valve atrophies, the ductus arteriosus closes, the ductus venosus becomes obliterated, the umbilical vein becomes obliterated.

PRACTICE, ETIOLOGY, AND DIAGNOSIS.

1. They are most prone to gout, arteriosclerosis, chronic interstitial nephritis, aneurysm, angina pectoris, acute inflammations, apoplexy, and certain skin diseases, such as urticaria, eczema.

4. Severe pain is a prominent symptom in:—passage of calculi, burns, aneurysms, angina pectoris, colic, gout, whitlows, otitis media, tic douloureux, and acute inflammations.

Localized pain is of some value as an aid to diagnosis, but an indication of the different conditions in which such pains are found would take up too much space; it should, however, be remembered that pain is sometimes wrongly referred, as pain in the knee in hip joint disease, or the pain of herpes zoster, which is referred to the skin.

6. In *acute enteritis*, the stools are fluid or semifluid, and contain particles of undigested food, bile, and tiny specks of mucus.

In *typhoid*, the stools are thin, yellowish ("peasoup"), and vary in number from one or two up to ten or twelve in twenty-four hours.

In *obstructive jaundice*, the stools are clay-colored, pasty, and offensive.

7. In *scabies*, there will be the presence of burrows and of the itch-mite, the eruption will generally be found on the anterior surface of the wrists, about the umbilicus, in the mammary region in females, or around the genitals in males; there is intense itching; it is communicable, and is readily amenable to treatment.

In *pustular eczema*, there are no burrows and no itch-mites; as a rule, poorly nourished or delicate children are attacked, and the eruption is found on the face and the scalp; after the pustules rupture, yellowish or greenish crusts form; the itching is variable.

8. *Aphasia* is the inability to express ideas by either speech or writing. It is caused by lesions of the cortical centers, and is not due to lesions of the peripheral nerves or of the organs concerned in speech or writing.

In *ataxic aphasia*, there is loss of speech, owing to lack of coördination of the muscles concerned in voice production.

In *sensory or amnesic aphasia* there is loss of word memory, which may or may not exist in connection with ataxic aphasia. There are several varieties of aphasia.

10. Calomel and colchicum may color the stools green; rhubarb, senna, and santonin may cause a yellow color; iron, bismuth, and manganese may give a black color; logwood may cause a red color; and sulphur may cause a very offensive odor.

11 Cardiac arrhythmia has no particular clinical significance, unless it accompanies some disease. According

to Butler (*Diagnostics of Internal Medicine*), search should be made for one or more of the following:—(1) Valvular cardiac disease, especially mitral lesions, in which it is usually, but not always, a sign of beginning failure of compensation, passing in many instances into delirium cordis; simple dilatation, chronic myocarditis, sclerosis of the coronary arteries, and fatty degeneration; possibly obscure changes in the cardiac ganglia, and overstrain or impaired nutrition in wasting diseases or long-continued fevers. (2) Poisons circulating in the blood, such as alcohol, coffee, tea, tobacco, digitalis, aconite, and belladonna, or the toxines of the infectious diseases, especially of typhoid fever and pneumonia. (3) Diseases of the intracranial contents, meningitis, hemorrhage, abscess, softening, concussion, and not infrequently mental excitement. (4) Neurasthenic conditions resulting from excesses or overstrain. Brief attacks of moderate arrhythmia are not uncommon in neurotic individuals, following even a slight departure from their usual habits in food, drink, or exertion. (5) Digestive disturbances, acute or chronic, and jaundice or constipation, particularly if associated with an unusually hypochondriacal frame of mind. (6) More rarely arthritis deformans, exophthalmic goiter, and renal disease.

PATHOLOGY.

2. Necrosis is produced by disordered nutrition through two systems:—(1) the circulatory, by means of anemia and of stasis of blood and lymph; and (2) the nervous, by means of both vasomotor impulses and the reflexes.

3. Leucopenia is the condition in which the number of white blood cells is diminished; sometimes the term is used to denote merely absence of leucocytosis. It occurs in:—typhoid, tuberculosis, pernicious anemia, pneumonia, cachexia, inanition, measles, influenza, malaria.

4. An *exudate* is the material that has passed through the walls of the vessels into the surrounding tissues, as the result of inflammation. In *lobar pneumonia*, the exudate consists of fibrin, red blood cells, epithelial cells, polynuclear leucocytes, and diplococci, in the stage of red hepatization; in the stage of gray hepatization the fibrin and red bood cells have disappeared, and the exudate now consists mainly of leucocytes and some pus cells.

In *bronchopneumonia* the exudate consists of serum, leucocytes and endothelial cells; occasionally there may be a few red blood cells and a trace of fibrin.

In *acute peritonitis* the exudate is serous or purulent, and is generally fibrinous.

5. Fibrous tissue, bone, cartilage, mucous tissue, and connective tissue of embryonic type. The metastasis is by way of the blood-vessels.

6. The synovial membrane and ligaments are swollen and congested; the synovial fluid is increased in amount, is turbid, and may contain lymph: the cartilages are roughened and may become ulcerated or eroded; the joint may suppurate or there may be a false ankylosis; in the blood there is a diminution in the number of the red cells, and an excess of fibrin. The possible complications include:—endocarditis, pericarditis, occasionally myocarditis, pleurisy, chorea, tonsillitis, pneumonia, cerebral disturbances such as convulsions or delirium, and certain skin eruptions as urticaria.

BACTERIOLOGY.

1. *Aërobic* bacteria are such as require the presence of oxygen in order to live and grow. Most bacteria are aërobic.

Obligate means necessary; and the term is used in opposition to *facultative*. Obligate aërobic bacteria are such bacteria as cannot exist without oxygen; whereas facultative aërobic bacteria are such as thrive better in the presence of oxygen, but still can manage to exist without it.

Pleomorphous bacteria are such as assume more than one form.

Sporogenous bacteria are bacteria in which reproduction takes place by sporulation instead of by the more usual method of fission.

Chemotaxis is the property by virtue of which certain living cells approach *(positive chemotaxis)* or move away from *(negative chemotaxis)* certain other cells or substances.

3. The special culture medium required for the growth of the gonococcus is human blood serum.

NEUROLOGY.

1. Locomotor ataxia is a disease of adult life; is more common in men than in women; is more common in cities than in the country; syphilis is believed to be the most frequent direct cause; alcoholism, injury, exposure to cold and wet, have all been urged as causes, but they are not now assigned so important a place as etiological factors as was formerly the case.

MATERIA MEDICA.

1. *Preparations* of salicylic acid are:—sodium salicylate, dose gr. xv; lithium salicylate, dose gr. xv; ammonium salicylate, dose gr. iv; strontium salicylate, dose gr. xv; phenyl salicylate (salol), dose gr. vijss; bismuth subsalicylate, dose gr. iv. *Physiological action:*—antiseptic, irritant, diaphoretic, diuretic, antipyretic, and cholagogue. It is *best administered* in the form of one of the salts, preferably sodium salicylate.

2. *Preparations* of belladonna:—the extract, the fluid extract, tincture, ointment, the plaster, and the liniment. Atropine, with its oleate and sulphate, and homatropine hydrobromide.

Toxic effects:—dryness of the mouth and throat, thirst, drowsiness, dysphagia, face flushed, pupils much dilated, eyes prominent, numbness and partial paralysis of the extremities, and there may be delirium and coma.

Antidotes:—There is no antidote; pilocarpine is the best physiological antagonist, and opium will counteract the effect on the pupils.

4. The only preparation of corrosive sublimate or mercuric chloride is the lotio hydrargyri flava, or yellow wash. The preparations of calomel or mercurous chloride, are compound cathartic pills, dose two pills; lotio hydrargyri nigra, or black wash; and compound pills of antimony, or Plummer's pills, dose one to three pills.

5. The mineral acids are:—hydrochloric, sulphuric, nitric, nitrohydrochloric, and phosphoric acids.

THERAPEUTICS.

1. The two classes into which bitters are divided, are:—(1) simple bitters, and (2) aromatic bitters. Their *therapeutic uses* are:—to promote appetite, to increase gastric secretion, to act as tonics to the mucous membrane of the alimentary tract, in atonic dyspepsia, in chronic gastritis, in sea-sickness, and as vehicles for the administration of other drugs and preparations. *Contraindications:*—acute gastritis and gastric ulcer. Bitters should be administered shortly before meals.

5. (b) The therapeutic uses of diuretics:—to remove liquid from the body tissues or cavities, to increase the elimination of waste products and of poisons, to dilute the urine, and to maintain the excretory action of the kidneys.

6. For *erysipelas*, equal parts of ichthyol, ether, and collodion. For *rhus toxicodendron poisoning*, grindelia robusta, four drams to a pint of water. For *epistaxis*, aconite, adrenalin, witchhazel, vinegar, tincture of the chloride of iron, plugging the nares. For *croup*, ipecac, apomorphine, lactic acid, hydrogen dioxide, potassium citrate. For *singultus*, morphine, chloroform, ether, strychnine, ice. For *ptyalism*, acids, astringents, potassium iodide, borax, belladonna.

For *night sweats of phthisis:*—

℞ Acidi camphorici.....ʒij
Alcoholis.....ʒj
Mucilaginis acaciæ.....ʒiss
Syrupi aurantii corticis.....q.s. ad. ʒiij Misce.

Signa:—One dessertspoonful one hour before the sweat is expected.

For *Ascites:*—℞. Pulveris digitalis
Pulveris scillæ aa gr. xxx Misce.
Fiat in pillulas no. xxx

Signa:—One every four hours.

PHYSIOLOGY.

1. The uses of the blood are to supply nourishment to, and to take away waste matters from, all parts of the body. The red corpuscles supply the tissues with hemoglobin; the white corpuscles serve as a protection to the body from the incursions of pathogenic microorganisms, they take some part in the process of the coagulation of the blood, they aid in the absorption of fats and peptones from the intestine, and they help to maintain the proper proteid content of the blood plasma.

Arterial blood is bright red in color, contains more oxygen, less carbon dioxide, more water, and is slightly warmer; *venous blood* is purple in color, contains less oxygen, more carbon dioxide, less water, and is slightly cooler (except in the hepatic vein).

2. The pneumogastric nerve conveys inhibitory impulses from the medulla to the heart.

3. By the term *vesicular murmur* is meant the peculiar breathing sound which is heard when listening over the vesicular tissue of the lungs.

4. Peptones are characterized by being very soluble in water, hygroscopic, easily dialyzed, and they respond to none of the ordinary proteid reactions with the exception of the biuret reaction, with which they give a red color.

5. The pancreatic ferments are (1) *trypsin*, which changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; (2) *amy-*

lopsin, which converts starch into maltose; (3) *steapsin*, which emulsifies and saponifies fats; and (4) a milk-curdling ferment. All of these act in an alkaline medium only.

HYGIENE.

1. It should be colorless, odorless, cool, limpid, soft; it should have an agreeable taste, neither salty nor sweet nor flat; it should dissolve soap readily without formation of a curdy precipitate, it should contain not more than about twenty-five to thirty grains of solids per gallon, and should not be polluted with sewage.

OTOLOGY.

1. Tinnitus aurium is the name given to any subjective sounds heard in the ear. The chief causes are:—neurasthenia, impacted cerumen, otitis, and other ear diseases; Ménière's disease, obstruction of the Eustachian tube, anemia, leukemia, cerebral hyperemia and anemia, arteriosclerosis, gout, digestive disorders, excessive use of alcohol or tobacco, and the use of certain drugs such as quinine or salicylic acid.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery.	Montgomery.	March	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	April	1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	9
California	Chas. L. Tisdale, Alameda	San Francisco	April	16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	2
Connecticut*	Chas. A. Tuttle New Haven	New Haven	March	12
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W.C.Woodward, Washington.	Washington	April	11
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago	April	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis.	May	28
Iowa	J. F. Kennedy, Des Moines	Des Moines	March	19
Kansas	T. E Raines, Concordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Portland	March	5
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March	12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	April	2
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg.	St. Louis / Kansas City	April	16
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May	6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D Black, Las Vegas	Santa Fe	June	3
New York	C.F.Wheelock Univ.of State of New York, Albany.	New York, Albany, Syracuse, Buffalo.	May	21
N. Carolina*	G. T. Sikes, Grissom	Morchead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks	April	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J W. Baker, Enid	Guthrie	March	26
Oregon*	B. E. Miller, Portland	Portland	April	—
Pennsylvania	N. C. Schaeffer, Harrisburg.	Philadelphia / Pittsburg,	June	—
Rhode Island	G. T. Swarts, Providence	Providence	April	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T Jackson, San Antonio.	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City.	Salt Lake City.	April	1
Vermont	W Scott Nay, Underhill	Burlington	July	9
Virginia	R. S Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A Barbee, Point Pleasant.	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Pennsylvania.—A bill has been introduced into the Pennsylvania legislature substituting for the three State Medical Examining Boards one board, composed of nine members, to be appointed by the Governor from lists of qualified members of State medical societies or associations. More rigid examinations will be possible under the new bill, by which the examiners will be empowered to require candidates for license to do laboratory work, demonstrate on the human cadaver, and even practise at the bedside in convenient eleemosynary institutions. Educational requirements are made stricter, and no new license is to be issued unless the candidate has passed a four-year course in a medical school and prior to that has taken a course in some school or college having a four-year course of instruction.

Therapeutic Hints.

Trypsin.—An accident sufficiently serious to warrant its report occurred with a patient, F. J. of B., with carcinoma of the sigmoid and upper rectum, but who was entirely free of cachexia and toxins. An injection of five minims of the drug diluted with 15 minims of specially sterilized distilled water, on December 26, was followed nearly thirty-six hours later by an active delirium, lasting with complete unconsciousness about sixteen hours. During the day of December 28 consciousness began to return, but at night active delirium again appeared, in spite of an injection in the afternoon of amylopsin. Complete recovery occurred only two days later, after full doses of potassic bromide. During the first two nights the patient, a strong man, was with difficulty restrained from injury to himself and others.

C. G. Am Ende, M.D.

Alopecia.—Jessner recommends the following:

℞ Resorcin 2.0
Ac. salicyl..... 2.0
Ac. tannici..... 6.0
Spt. camphoræ..... 20.0
Ol. ricini..... 5.0
Spt. colonien.....q.s. ad. 200.0
Sig.: Apply locally.

℞ Chloral hyd.
Ac. tannici.....āā 6.0
Tr. benz..... 1.0
Ol. ricini..... 5.0
Spt. vini rect.....q.s. ad. 200.0
Sig.: Apply locally.

℞ Ac. tartar..... 10.0
Ac. salicyl..... 1.0
Spt. colonien..... 20.0
Ol. ricini..... 2.0
Spt. vini rect.....q.s. ad. 200.0
Sig.: Apply locally.

Neuralgia.—The following is recommended by Leonard Williams:

℞ Quiniæ hydrochloridi.....gr.v
Acidi hydrobromici diluti.....mxx
Tr. gelsemii.....mx
Aq. chloroformi.....q. s.ad fʒss
M. Sig.: Every twenty minutes till pain ceases. Not more than four doses to be taken.

—*Clinical Journal.*

Mouth Washes.—

℞ Potassii chloratis.....ʒij
Sodii biboratis.....ʒj
Potassii nitratis.....ʒss
Tinturæ arnicæ.....ʒij
Aquæ cinnamomi.....q.s. ad. ʒ viij
M. Sig.: Thoroughly rinse mouth three times a day.

℞ Sodii bicarbonatis.
Sodii biboratis.....āā ʒj
Zinci chloridi.....gr vj
Thymol
Menthol .....āā gr. j
Glycerini .....ʒiv
Alcoholis .....ʒij
Aquæ gaultheriæ.....q.s. ad Oj
M. Sig.: Use as a mouth wash.

—Buckley in the *Dental Review.*

Ozena.—Lubet says the treatment of ozena should have for principal object the removal of all crusts from the mucous membrane, as where there are no crusts there is no odor. His idea is to stimulate the nasal secretion so that the crusts become detached of their own accord. To obtain that end he recommends the aspiration through the nose several times a day of a strong boric acid ointment.

℞ Ac. borici.....ʒiv
Menthol .....ʒvi
Petrolati alb.....ʒiss
The boric acid excites the secretion of the membrane, detaching the crusts, and when the patient blows the nose with force they are expelled.

—*The Medical Press.*

Prostatitis.—

℞ Tinct. opii camphoratæ .....ʒiss
Liquoris potassæ .....ʒii
Tinct. lupulini .....ʒiv
Tinct. hyoscyami .....ʒii
Syrupi zingiberis .....ʒiii
M. Sig.: Teaspoonful in half glass of water after meals and at bedtime.

—*Indian Medical Record.*

New Instruments.

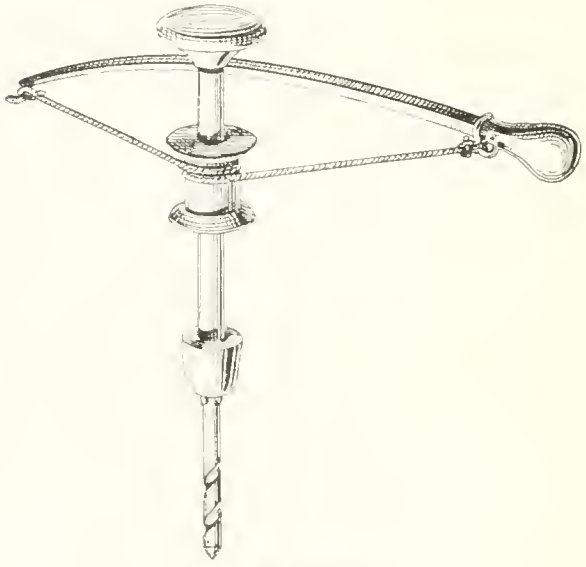
FIDDLE-BOW SURGICAL DRILL.

By FREDERIC GRIFFITH, M.D.

NEW YORK

SURGEON, FELLOW OF THE ACADEMY OF MEDICINE.

A SIMPLE device which I think might be used by surgeons to advantage for the propulsion of drills when wiring bone fragments, or after bone resection work when screw-plates are intended to be used, consists of a fiddle-bow attachment to the shank of the drill chuck. I find the implement, as devised, to be as safe and under as direct control as is the awl when used for similar work, without having the objection of cramping or tiring the surgeon's hands during its use. The bow drill, requires two hands for its manipulation, but its boring capacity is at all times under supervision. Danger, therefore, of the drill "running away," with resulting damage to underlying soft parts or vessels, is not possible, for the number of revolutions depends directly upon the driving power imparted to the bow.



The Fiddle-bow Surgical Drill

As pictured in the cut, the implement consists of a vertical shank, spool, chuck, and handle, with cord and bow. It may be constructed from three-eighths or seven-sixteenths (1 cm.-1.1 cm.) tool steel eight to twelve inches (20 cm.-30 cm.) in length. A revolving handle caps the upper end and a drill chuck the lower. Between, immovably set upon the shank of the implement, is a spool. The bow is of tempered steel ten to fourteen inches (25 to 35 cm.) in length, one-quarter inch (0.6 cm.) square, tapering from the handle into which it is screwed. A hook at the lower extremity and an eye at the upper end afford attachment for the cord. A stout, woven linen curtain cord or similar material may be used as the medium for the transfer of motive power.

All metal parts should be full nickeled. Sterilization is accomplished by boiling. Ordinary twist drills or plain, tapering, double ground boring tips may be used.

49 EAST SIXTY-FOURTH STREET.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 9, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	350	208
Diphtheria	314	57
Measles	195	5
Scarlet Fever	261	12
Smallpox	2	—
Varicella	92	—
Typhoid Fever	61	7
Whooping Cough	65	5
Cerebrospinal Meningitis	10	16
Malarial Fever	..	..
Totals	1350	310

Leukoplasia of the Vulva, the Vagina, and the Uterus.—F. Jayle and X. Bender from their study of this subject conclude that the leukoplasic plaques may occur on the mucosa of the vulva, of the vagina, on the vaginal part of the cervix, and also on the endouterine mucosa when there is found in this location pavement epithelium as a substitute in totality or in part for cylindrical epithelium. Whatever its location may be, the leukoplasia presents the same macroscopic aspect. Histologically it is characterized by three essential features: hyperacanthosis, hyperkeratosis, and an excess of granulation tissue. One of these conditions may be far more striking than the other two in a special case. The variations probably depend more or less upon the age of the lesion. Whatever may be the location of this trouble leukoplasia is frequently the forerunner of cancer.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 8, 1906.

SMALLPOX—UNITED STATES.

		CASES	DEATHS
Georgia, Augusta	Jan. 22–29	3	
Indiana, Indianapolis	Jan. 20–27	13	2
Michigan, Detroit	Jan. 26–Feb 2	6	
Mississippi, Natchez	Jan. 19–26	3	
Missouri, St Joseph	Jan. 19–26	12	
Ohio, Cincinnati	Jan. 25–Feb 1	1	
Spokane, Washington	Jan. 12–19	14	Imported

SMALLPOX—FOREIGN

Canada, Cape Breton—Sydney	Jan 26		Present
Kent County	Jan. 26		Present
Nova Scotia, Colchester Co.	Jan. 26		Present
Cumberland County	Jan. 26		Present
Pictou Co	Jan 26		Epidemic
Chile, Antofagasta	Jan 6	4	2
Coquimbo	Jan. 6	15	1
Iquique	Jan. 6		Present
Cuba, Habana	Jan. 30	1	
Ecuador, Guayaquil	Dec. 1 31		27
France, Paris	Jan 5–12	11	
Gibraltar	Jan 13–20	1	Imported
Great Britain, Cardiff	Jan. 12–19	3	
Liverpool	Jan. 12–19	5	
Malta	Dec. 29–Jan 5	1	
Mexico, City of Mexico	Dec. 9–15		12
Netherlands, Rotterdam	Jan 12–19	8	1
Peru, Lima	Dec 1–31	0	
Russia, Moscow	Dec. 29–Jan 5		1
Odessa	Jan. 5–12	10	1
Spain, Barcelona	Jan. 10 20		7

YELLOW FEVER

Ecuador, Guayaquil	Dec 1–31		17

CHOLERA—INSULAR

Philippine Islands, Provinces	Dec. 8 15	20	22

PLAGUE

Chile, Antofagasta	Jan 6	3	1
China, Niuchwang	Jan 28		Present
Peru, Callao	Dec 31 Jan 5	2	1
Catacaos	Dec 19	2	2
Chiclayo	Dec 19	1	1
Mollendo	Dec. 19	0	3
Paita, city and vicinity	Dec 19	7	2
San Pedro	Dec 19	11	2
Trujillo	Dec 19	17	3

Medical Record

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Original Articles.

BRACHIAL NEURALGIA AND ARM PAINS.*

By CHARLES L. DANA, M.D.,

NEW YORK.

Introductory.—The arm and shoulder are supplied by the brachial plexus formed from the last four cervical and first dorsal nerves. This plexus gives off twelve collateral branches (all muscular but the last) and six terminals.

The twelve collaterals give muscular supply and also muscular sensibility to the shoulder muscles, and are nearly all given off from the upper and middle cords of the plexus and fourth, fifth, and sixth cervical roots.

The terminal branches of the brachial plexus which supply cutaneous sensation to the arm and shoulder are the circumflex, radial, internal cutaneous, and musculocutaneous. These all have representation also in the fourth to seventh cervical and arm from the upper part of the plexus, except the internal cutaneous.

Brachial neuralgia is, then, a malady of the upper cords of the brachial plexus and its branches.

It is not my purpose to give a description of the nerves of the arm, as this is to be found in all current text-books. I insert here, however, for the purpose of refreshing the memory:

1. A diagram of the brachial plexus.

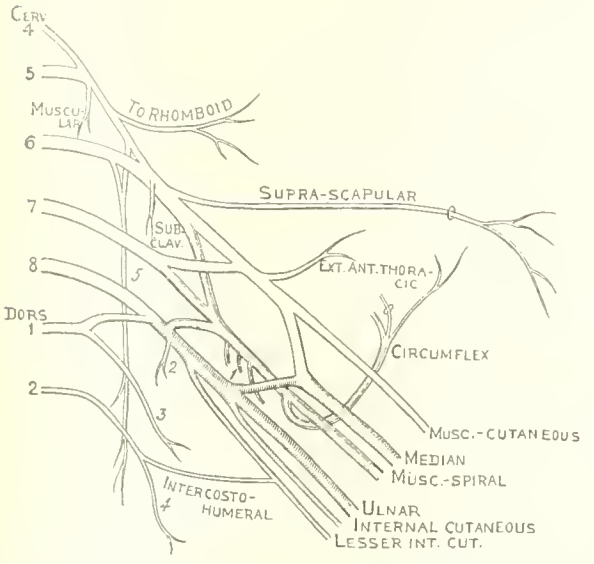

FIG. 1.—The brachial plexus; 1, the subscapular nerves; 2, internal anterior thoracic; 3, first intercostal; 4, second intercostal; 5, posterior thoracic.

2. A diagram showing the sensory areas of the skin of the shoulder and arm (Fig. 2) and showing the relations of the inferior cervical and first dorsal ganglia to the brachial plexus (Fig. 7). Also sectional views of the upper arm and forearm (Figs. 3 and 4).

*Read at a meeting of the Practitioners' Society, December, 1906

It will be seen that the collateral branches of the brachial plexus are all mainly muscular except the last, the internal cutaneous. They are nearly all given off from the fourth, fifth, and sixth cervical roots and the upper cords of the brachial plexus. Hence, pains in the shoulder, except inso-

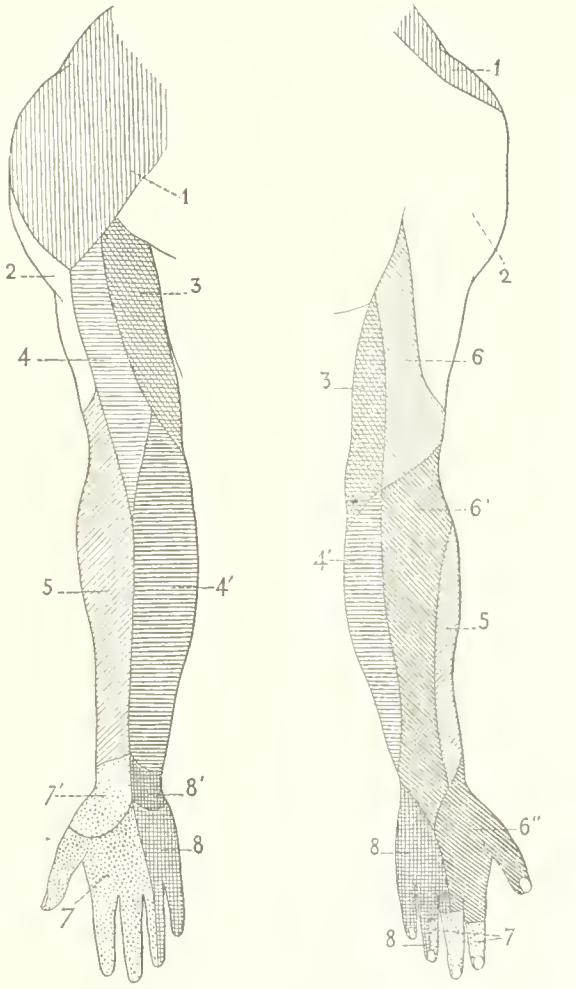

FIG. 2.—Cutaneous distribution of the arm nerves; A, anterior surfacees; B, posterior surface; 1, cervical plexus; 2, circumflex nerve; 3, accessory internal cutaneous; 4, 4,' internal cutaneous; 5, musculocutaneous; 6, 6', 6", musculospiral (radial); 7, 7', median; 8, 8', ulnar.

far as they are muscular and arthritic, are not due to involvement of these collateral nerves.

The terminal nerves of the brachial plexus are sensorymotor and supply cutaneous and muscular sensation to the shoulder as well as arm. They are the circumflex, radial, musculocutaneous, internal cutaneous, median, and ulnar. Now practically, in most neuralgias of the upper extremity, the pains are mostly in the upper arm and shoulder, rarely and secondarily in the forearm and fingers. Hence, it is the circumflex, radial, and musculo-

cutaneous and internal cutaneous that are most involved. These nerves, except the last, come from the fourth to the seventh cervical. Hence, it is mostly the upper and middle cords of the plexus that are most affected. The pains are usually most intense deep in the arm about the shoulder and at the edge of the scapula, as though it were the col-

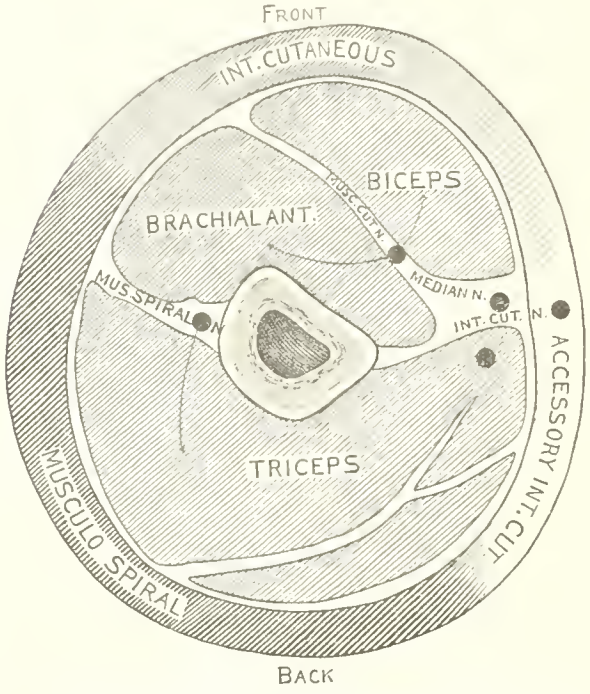

FIG. 3.—Cross-section of the upper arm through the middle of the biceps, showing the position and distribution of the nerves; the lines leading from them show the muscles they supply.

laterals and smaller terminals to the bone joints and deep tissues that were involved. There are few darting pains along the whole nerve, to the fingers, hence, we assume the process is not usually a root neuritis, or irritation, and not a trunk neuritis, but a *terminal neuritis*. It is only late and in severe types that there is evidence of the large trunks being involved. The process means, sometimes, an involvement as much of the cellular and muscular tissues as of the nerve in the ordinary cases. Only in herpes neuritis and in tabetic pains do we get the posterior ganglia affected. At least there are but few exceptions to this rule.

The Nature of Pains About the Shoulder.—Pains just above the shoulder and about the acromion are due to involvement of the supraacromial nerves, which are branches of the fourth cervical.

The deep-seated pains referred to the parts about the joint and in the deltoid, are caused by the circumflex nerve which originates from the fourth, fifth, and sixth cervical, and which is a sensory motor nerve. The superficial circumflex nerve-pains are felt more posteriorly and over the body of the deltoid; there is a painful point where the nerve becomes superficial (Fig. 8).

Pains on the anterior and inner surfaces of the shoulder and upper arm are due to involvement of the intercostohumeral, second dorsal. Shoulder pains, however, generally may be said to be circumflex and supraacromial and to mean involvement of the fibers from the fourth, fifth, and sixth cervical nerve roots.

The circumflex nerve, which thus causes shoulder pains, is given off from the posterior cord of the brachial plexus from which comes the other terminal branch, the radial (musculospiral). Hence, shoulder pains due to this nerve, when severe, radiate down the arm into the fingers, usually the first and second or third, or second and third fingers.

Just above the origin of the circumflex arise the collateral branches to the subscapular and latissimus dorsi; hence, pains or uncomfortable sensations may radiate back into the region of the scapula. Still more frequently pains about the shoulder radiate into the back of the neck along the nerves of the superficial or deep cervical plexus. There is often a localized pain also just above the interscapular space and at about the level of the first and second dorsal vertebræ due to sensory fibers of the posterior branches of the fifth and sixth cervical and seventh cervical, representing the same segments as those of the circumflex and radial (Fig. 8).

Summary.—Shoulder pains, then, mean involvement mainly of the circumflex; if they extend up, the supraacromial nerves; if they extend down to involvement of the radial, and if they extend back to the collateral muscular nerves going to the scapular region.

The Nature of Pains in the Upper Arm.—Pains here are generally associated with pains below in the forearm and hand, and, still more, with shoulder pains. Usually in brachial neuralgia the pain is most dominant in the arm, often in the upper two-thirds, and rather more on the inner side along the biceps, extending to the axilla. The superficial parts on the inner arm here are supplied by the internal musculocutaneous and internal cutaneous nerve. The deeper parts anteriorly by the musculocutaneous, which also has a branch to the periosteum and bone and is the seat of the deeper pains (Fig. 3). These nerves arise from the inner (internal cutaneous and lesser internal cutaneous) and outer cord (musculocutaneous) of the plexus. The musculocutaneous comes from the fourth and fifth cervical, while the internal cutaneous from the first and second dorsal.

Pains in the outer part of the arm, both deep and superficial, come from the radial (fourth to eighth

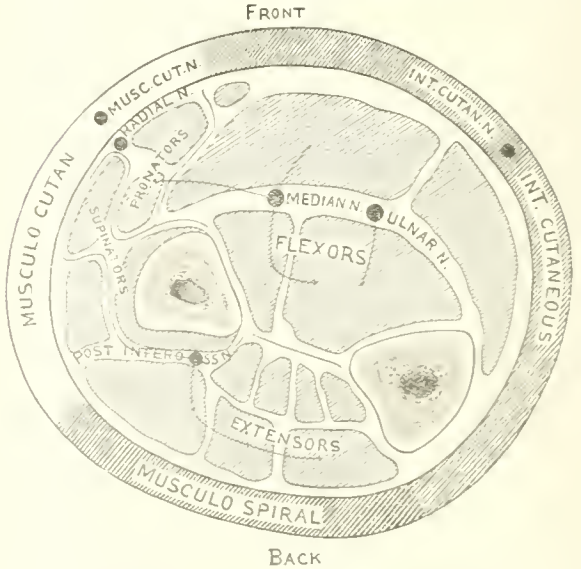

FIG. 4.—Cross-section of the forearm, showing the position and distribution of the nerves.

cervical). Thus when the whole arm is involved nerve fibers from a very long series of spinal segments are under irritation. But generally it is the musculocutaneous and the radial which are the seat of the trouble. These come from the outer and posterior cord of the plexus and the fifth to the eighth cervical roots are represented.

Tender points are felt where the musculocutaneous nerve emerges, where the lesser internal cutaneous and cutaneous branches of the radial emerge.

Upper arm neuralgias are often associated with an interscapular pain a little lower down than the spot found in shoulder pains. It seems to be in the spot supplied by the first and second dorsal (Fig. 8).

Pains in the Forearm and Fingers.—There are rarely any neuralgic or neuritic pains confined to the *forearm* alone. Here we have only the ulnar pains following the course of the ulnar nerve, and very characteristic radial pains following the back of the arm to the fingers, and least frequently median nerve pains. Sometimes the whole hand is involved in neuralgic pain, but this is usually hysterical. The hand and fingers have perethesias and local pains due to local disease, but rarely any true neuralgia.

Heart Pains.—I have been somewhat specially interested in two groups of disorders, namely, the pains in the arms from heart disease, and the pains of brachial neuritis and neuralgia. Of the cardiac arm pains I shall not say very much, however, because the subject has been pretty well studied by others. I have simply made a few observations which I would briefly record now. One of these is that cardiac arm pains are not very prominent factors in the ordinary heart disease of the hospitals, and do not appear so dominant among the laboring classes. Almost always in persons who have a cardiac disease, and who have pains in the arm, there is a decidedly neurotic element. This means, I presume, that the nervous system being more sensitive and unstable, the irritating impulses from the myocardium radiate more freely and arouse disturbances in consciousness more easily. These cardiac arm pains, in my observation, are generally associated with some precordial pain, not infrequently with some pain near the scapula, and also pains on the inner side and middle of the upper arm and middle of the forearm. They rarely extend into the fingers (Fig. 5). Sometimes there is distinctly a pain in

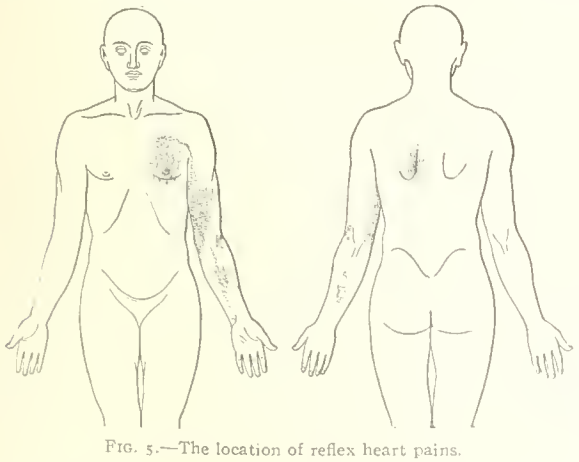

Fig. 5.—The location of reflex heart pains.

the elbows, and in one patient of mine, with a pronounced cardiac disorder, whenever the heart became a little overstrained, there were pronounced pains in both elbows. We sometimes note, also, pain in the right arm instead of the left. I have made a diagram on which I have plotted out the places in which pains were felt in a dozen of my cases. I am unable to say that there is anything so distinctly characteristic in the location or character of the pain that one could by it alone say that it was *cardiac*, except, perhaps, that there is generally a feeling that the pain comes from the left side and runs from there into the arm. The cause of this reflex disturbance is generally attributed to the fact that the third or lower cardiac ganglion of the cervical sympathetic sends fibers which communicate with the first dorsal nerve, which nerve supplies the inner side of the arm (Fig. 7).

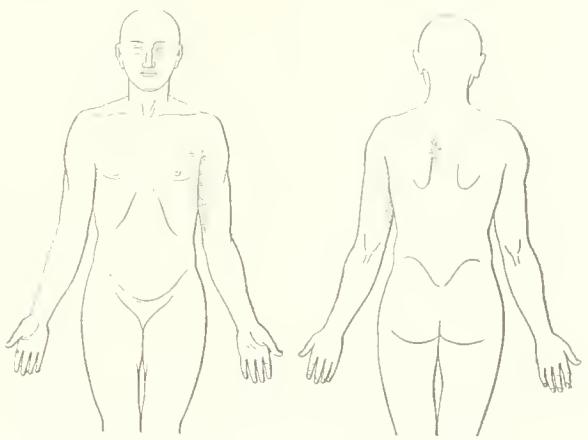

Fig. 6.—Pain under the shoulder, or the inner side of the arm, and between the scapulæ, due to a lesion of the posterior second dorsal ganglion, with herpes; this is like certain heart pains.

Brachial Neuralgia and Neuritis.—*Definition and Frequency.*—Neuralgia of the brachial plexus is a disease characterized by severe pains centering in the upper arm and usually involving the whole upper extremity and shoulder; it runs a course of several months and is due to irritation or inflammation of the trunks of the brachial plexus and its roots of origin. This irritation does not usually reach the degree of neuritis, and the disease does not show the paralysis and atrophy, anesthesia and vasomotor symptoms of neuritis as a rule. This

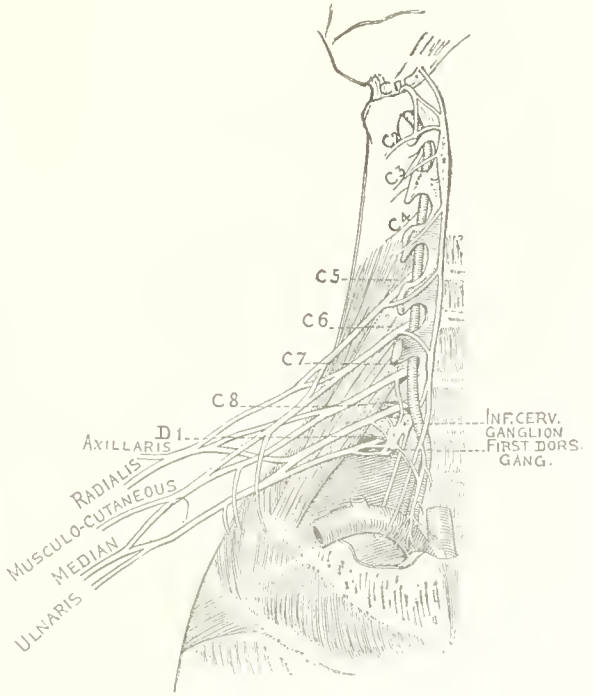

Fig. 7.—Showing the relation of the third cervical and first thoracic ganglion (blended together) with the brachial flexus

form of neuralgia, excluding the cases of traumatic neuritis, is now by no means a rare disease. Among the neuralgias brought to the attention of the neurologist it ranks third, coming after the facial neuralgias and closely following in frequency the sciaticas. In the past, however, brachialgia has re-

ceived but scant attention from the writers, both on general medicine and in special text-books. Even in works devoted especially to the study of neuralgia this characteristic modern affection, as it seems to me, is not portrayed, as it is seen at least by physicians and neurologists in this country.

In Bernhardt's comparatively recent article (Nothnagel's Special Pathology) the subject is somewhat extensively dealt with; Bernhardt finds that among 685 cases of neuralgia there were 108 of the brachial type. But the neuralgias seen in Berlin by this author are apparently those due largely to trauma and to occupations which lead to exposure of the arms, such as those of firemen and washerwomen, etc. His cases are apparently often forms of traumatic neuritis and do not all belong to the class which I propose to describe now.

In support of the point just referred to that the typical brachial neuralgias have increased in frequency in the last two decades, I can only now bring forward my own statistics and experience. In 1888 I made a collection of reports of 453 cases of neuralgia and found that among them there were of brachial neuralgias only eight, or about two per cent. These figures, to be sure, were very largely obtained from dispensary and hospital statistics, but they do not vary very greatly from other figures from a similar class of material. Thus, Eulenberg, in his statistics, places brachial neuralgia fifth in a list of six different types; Lechnit puts brachial neuralgia fourth in a list of five types; Conrads places it fourth in a list of eight types. In general, writers seem inclined to make brachial neuralgias rank in frequency after sciatica, the trigeminal neuralgias, the intercostal neuralgias, and the occipital neuralgias.

Looking over the records of my private cases I find that among 197 cases of neuralgia the different forms are in the following order of frequency:

Tic douloureux	44 cases
Sciaticas	40 "
Brachial neuralgias	41 "
Other forms	73 "

These other types include a good many of the inner types of trigeminal, occipital, and spinal neuralgias.

There have, of course, always been a great many arm pains of various types, and these have added to the apparent statistical superiority of the brachial neuralgias in the tabulated lists of different types; but I am particularly insistent upon the point that it is the typical brachial plexus neuralgia which is a prominent, dominant, and probably more frequent clinical disorder now than it used to be.

In my private history books I find that I have a list of 79 cases of arm pains of various types. These I have classified as follows, and it shows that, leaving aside all symptomatic troubles and all occupation neuroses and local troubles, there is still a large percentage of pure brachial neuralgias:

Total cases of arm pains	79
Total brachial neuralgias	41
Arm pains associated with distinct neuritis	15
Occupation neuroses with dominant arm pains	16
Hysterical arm pains	4
Palmar, digital, and hand pains due to local or reflex causes	6

These do not include arm pains due to tumors, aneurysm, or cardiac disease, or tabes dorsalis.

Brachial neuralgia or neuritis is thus by no means a rare disease. Its frequency, at least in this city, is undoubted. There is, I am assured by a patient, a distinctly neurotic face, characterized by certain expressions of appreciative elation when the word is mentioned.

I have been struck with the fact that brachial neuralgia is seen more frequently in women, and in women of the leisure classes. They have not perhaps led idle lives, but they have never used their arms in domestic or maternal work as the woman in general is obliged to do, and they have generally been of a nervous organization, *i.e.* of a well-evolved type, and have been good livers. So that I have ventured to advance, with some reservations, a theory, if you will, that the arms of these modern women are becoming quasi-vestigial, like the appendix, the jejunum, and the last molar tooth. That they will always have some use I do not doubt, and will be sufficient even in the most advanced period of our civilization for the purposes of feeding and the actual uses of the toilet and simple coordinative efforts; but that they are becoming rather more weak and of less importance in the economy of woman seems to be probable.

The arm bones go with the weakening members, and it has been shown by Ravenel that the cervico-spinal cord is relatively smaller in women than in men, though on the whole the spinal cord of women is relatively larger in proportion to the brain and the lumbar cord is larger proportionately than that of man.

The statements of Ravenel are confirmed by those of Köllicker and Stilling. These authors find, for example, that the total square area of the motor roots of the cervical nerves, from the fifth to the eighth, is about the same in men and women. While the total area of the posterior roots is one-half as large in women as in men, the total area of both roots is about twenty per cent. smaller in women than in men. This would indicate that the sensory supply of the arm in women was only one-half as great as that in men, and it might be supposed that with this inadequate nerve supply, strains on the arm would call out trouble more quickly. On the other hand, the area of the last two lumbar and first two sacral nerves is much larger in women than in men, for both the anterior and posterior roots.*

Etiology.—Brachial neuralgia occurs oftenest in persons in middle life, ranging from thirty-five to fifty. When it occurs in young people it is (like the other neuralgias) more often of the hysterical type, or at least associated with that class who are neurotic and oversensitive. Besides having an hereditary neurotic history as the underlying tendency, there is almost always a history of severe emotional strain, loss of friends, sickness in the family, or worry over complications of domestic life. Sometimes in addition there is some physical

*Proportionate Length of

	Cervical Cord.	Dorsal.	Lumbar.
In man	22.4%	47.1%	30.5%
In woman	21.5%	46.6%	31.9%

—Ravenel, in "Merkel's Anatomy."

Area of Cervical Nerves from C. V. to C. VIII.	Male.	Female.
Ventral (anterior) roots	16.38 mm.²	16.02 mm.²
Dorsal (posterior) roots	40.04 mm.²	21.30 mm.²
Total arm	56.42	47.32

Area of Lumbosacral Nerves from L. IV. to S. II.	Male.	Female.
Ventral	14.36	17.46
Dorsal	31.04	33.24
	45.40	50.70

Thus, woman has only one-half as many sensory nerve fibers in her arm plexus as man, but has rather more motor and sensory fibers in the lumbosacral nerves. But she rarely has sciatica.

injury or some acute sickness. In two cases I have seen it follow profuse hemorrhages. In some cases it is due to inordinate use of the arms in simple manual work, like embroidery or knitting; but this seems to me rather unusual. A mild form of brachial neuralgia occurs as the result of carrying a heavy skirt, and it is not unlikely that this kind of work (skirt carrying) and the use of the arms in dressing the hair brings on neuralgia in a great many predisposed cases.

In my experience, then, neuralgias are seen oftener in the better classes than in dispensary or hospital patients. They occur, according to my observation, oftener in women than in men in the proportion of about three to one. This is contrary to most statistics, because, as I believe, these statistics include many frankly traumatic and surgical cases. There is often a predisposing neurotic or rheumatic taint, and sometimes perhaps an autotoxemia. The brachial neuralgia of tabes dorsalis and organic disease is not included in this discussion. In fine the etiology of brachial neuralgia has always one or more of three factors: Neurotic constitution, exhaustion from occupation or trauma, and metabolic (rheumatic) irritation.

Pathology.—Brachial neuritis proper, nontraumatic, in which there are objective evidences of nerve degeneration, is probably only a severer and more profound type of brachialgia. The common form, then, of the arm pain is usually designated as a neuralgia, though there is probably some low grade of inflammatory process in the sheaths if the nerves; and if it is desired to use the term "neuritis," I do not know that serious objection could be made. So far as I am aware, no post-mortem examinations have been made of the nerves of persons suffering from this condition. If we may infer concerning it by analogy, from conditions seen in sciatica, the existence of perineuritic irritation, and perhaps slight exudate, is probable. It seems to me that sometimes the inflammation is not so much in the nerve sheaths as in the muscular and connective tissues about it, and that there is a myositis as well as secondary neuritis. I shall assume that in using the word "brachial neuralgia" I include both the neuralgias, with no objective symptoms, and the distinctly neuritic cases, of nonsurgical origin.

The symptoms of brachial neuralgia are somewhat as follows:

The onset is rather sudden, but there may be severe preliminary aching in the arm for a few days, and sometimes there are short preliminary or abortive attacks. Usually, however, the patient wakes at night or notices in the morning a distinct and severe pain involving the upper arm and shoulder, or perhaps the whole arm. The pain usually is most acute, however, on the inner and front side of the arm and in the back between the shoulders. It is very intense and runs down the forearm and into the fingers, involving sometimes the whole hand, but usually only the first, second, and third fingers. It is not a darting, shooting pain, but seems to be one that is general and diffuse, involving for a time the whole arm with a pain of paralyzing intensity. The pains exacerbate, coming on usually at night more severely, or more in the morning, and always more after exertion. Movement makes the suffering worse; but the arm can be handled gently without much pain. Some suffering is present nearly all the time, often robbing the patient of sleep; but it may let up for a few hours during the day and then comes back again with paroxysms of great intensity lasting for one or two hours.

Many patients try at first to work off the pain by exercise, thinking it a form of rheumatism, or they get a masseur who rubs the arm, and, as a rule, makes it worse. There are, however, at times, attacks that are short and abortive. I have known some to last three or four days, and in these instances the massage or the doctor get the credit for a therapeutic triumph entirely undeserved. Usually the pains progress and continue for two or three weeks until the trouble is pretty firmly established, continuing then for two or three months.

When the pain first comes on there are no objective changes in the arm. It looks normal and is simply tender and sore to the touch. Later the arm becomes a little swollen and the fingers somewhat edematous, and there is slight flabbiness of the tissues, showing vasomotor change.

In the typical neuralgias there is rarely much more than this. If it is a genuine neuritis, of course atrophies and paralyses gradually develop, but it is not of this type of the trouble that I speak. In brachial neuralgias proper the changes in the arm are only slight—the grip of the hand becomes weak, the elbow jerk is a little exaggerated at first, muscular irritability is increased and then diminished, and there is no anesthesia.

Examination shows points of tenderness along the course of the nerve on the inner side of the arm at the elbow and over the deltoid. There is also a point of tenderness between the scapulæ about at the level of the second or third dorsal vertebra. This is very painful and is characteristic. Stretching out the arm and drawing upon the brachial plexus brings out pain, just as it does in the extension of the hip in sciatica. Later there is also weakness of response to the elbow jerk, just as in the tendo Achillis in the later stages of sciatica. The tender points that one finds in brachial neuralgia are by no means always identical with the tender points of Valleix. They vary somewhat and only correspond in a general way to the distribution of the cutaneous nerves (Fig. 8).

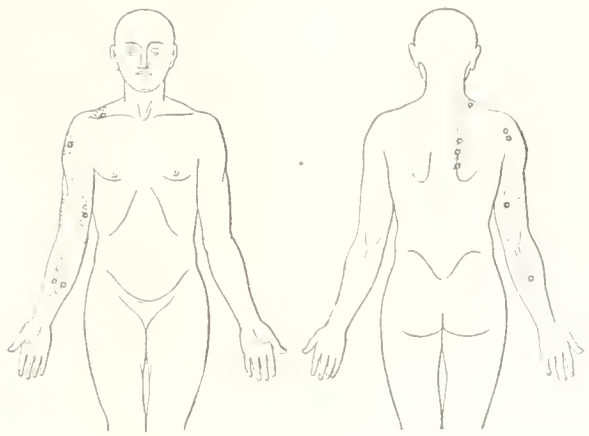

Fig. 8.—The pains and painful points of brachialgia.

It will be found, as we watch the neuralgias from the back of the neck down to the hand, that pains in these different segments are associated with painful points along the course of the spine. For example: In occipital neuralgia there will be a well marked tender point close up to the base of the skull over the second or third cervical spines. With a cervicobrachial neuralgia the point moves down to near the first or second dorsal. With a brachial neuralgia the spinal tender point moves to the neighborhood of the third or fourth dorsal. These spinal tender points are quite characteristic of neuralgias of

the upper cervical plexus, and the collaterals of the brachial plexus.

Diagnosis.—In the chronic and less severe types of arm pain one may be easily misled in diagnosis. The first and obvious name given to an arm pain is "rheumatism." The patient is always treated first for this.

It is safe to say that arm pains are never purely rheumatic, unless there is found some objective evidence of myositis, arthritis, or periarthritis. The most difficult thing is to distinguish between real neuritis of high grade and neuralgia. Neuritis has become a popular diagnosis nowadays, and patients talk very glibly about the term. It seems as a neurological diagnosis, to please the laity, as having a certain distinction that doesn't belong to plain rheumatism or neuralgia. It is, in fine, in a diagnosis *à la mode*. But a neuritis cannot be recognized except by some objective signs. There must be pain and also tenderness along the nerve; there must be definite areas of hyperesthesia or anesthesia, muscular weakness, and perhaps atrophy and electrical changes. There must be some of these symptoms in an inflammatory process that lasts three to six months.

In about half of my cases of brachial pains no such objective symptoms were present. The condition is not one of actual inflammation, but of exhaustion, and in the majority of cases brachial neuralgia is an exhaustion neurosis with some rheumatic or metabolic irritation of the nerves in addition.

In brachial neuralgia the rheumatic poison is nearest to being the common irritant, but antirheumatic medicines rarely affect the process radically. Gout does not cause a general arm neuralgia, but may attack individual nerves, causing special forms of gouty neuritis. Neuralgia of the arm, like lumbago and other rheumatic symptoms, sometimes precedes an attack of melancholia.

When we find a herpes along with arm pain we know that we have an inflammation of the spinal ganglion and secondary neuritis and that the process is due to an infection.

The question arises, therefore, whether some of the other cases of brachial neuralgia are not due to infection, attacking the trunks instead of the ganglia of the nerves. I am inclined to think that the infection theory will sometimes answer. But the trouble is too often the very evident result of overuse of arms, of nervous and mental depression, and its course is not acute, like that of herpes-neuritis.

Treatment.—I have not found treatment of brachial neuralgia of any avail without rest. This must be secured by a sling, and, if necessary, by splints. In a good proportion of cases some relief is gotten by the salicylates, especially aspirin, but they must be given in very large doses, just as for acute rheumatism.

Neither massage nor hot baths should be given at first. But after two or three weeks hot applications of *mud* or flannel can be used. The patient must understand that, as a rule, it takes ten or twelve treatments to accomplish results.

After a course of salicylates, tonics can be given. I do not know any drug that is of any special value, unless it is strychnine, in massive doses, and of its utility, I am sure, in chronic cases. Some patients rush off to Hot Springs at Virginia or elsewhere when they find their neuritis coming on. The treatment here is not abortive, however, and sometimes not especially helpful in the acute cases. The trouble is that at the beginning patients need most of everything rest, and this is not obtained satisfactorily at our American bath resorts or by a trip to Europe.

Arm pains, which once were due to neuritic conditions, sometimes become habit pains; the patient has a "constitutional armache," just as some have constitutional headache. The best and only treatment for these patients is to ignore the trouble absolutely. When the pains are rather chronic, *i.e.* after four to six weeks, massage and electricity do some good. The patient gets well anyway in three to six months as a rule.

The disease may recur, but this is rather rare, and only in about ten per cent. of my cases.

It is rarely double, and when so is invariably an exhaustion neuralgia, rather than a pure neuritis.

THE TREATMENT OF ACUTE DIFFUSE PERITONITIS.*

By RICHARD DOUGLAS, M.D.

NASHVILLE, TENN.

In presenting my views upon acute diffuse peritonitis, I am merely publicly accepting the conclusions that are forced upon us by the combined work of the bacteriologists and the surgeon. It will not appear that I have anything new to relate; no theories to expound; no ingenious technique to elaborate. Indeed, I question much if there is anything in this subject unknown or omitted by the multitude of scribblers who have oppressed the press.

Some old fellow once said: "To know a thing and not to express it is all one as if he knew it not." This scarcely applies to me, for I do not know my subject, and I feel the irritation of deficiency, and "one must needs scratch where it itches."

To the subject of acute peritonitis I have directed the closest study. Many years ago I reported to the Southern Surgical Association in Charleston a series of eight cases of general peritonitis treated by operation; six recoveries, two deaths. I received the applause of the fellows, and believed that I had mastered the problem which was the awe of all abdominal surgeons. I was young then and a professor, and did not hesitate to draw conclusions and dogmatically emphasize them. Encouraged by this success I some years later, in a presidential address before the same association, again elaborately considered the subject of peritonitis. My paper seemed to merit the approbation of the fellows, and upon motion of Dr. Howard Kelly was ordered printed in pamphlet form for distribution. I now felt that I knew it all: that this immense lymph sac with its physiology and pathogeny was an open book to me.

After this my opportunities for observation became more numerous: my mortality list remained consistently high; I grew older, more conservative in judgment, surrendered my professorship and lost with it that egoism that beclouded my studies and endangered my patrons. I recognized that my results were no better than many, and not so good as some. I continued to open tense bellies, pus gushed forth. I measured my skill and achievements by the quantity of pus found; yet my mortalities came unexpected and with frightful frequency from another class of cases.

The acutely infected peritoneum became a chamber of horrors to me, and, though my studies were considered exhaustive by some, they were, *ab initio*,

*An address delivered before the Nashville Academy of Medicine and Surgery, January 1, 1907.

faulty. I did not even know the nomenclature of the disease; I spoke of curing general peritonitis when neither hand nor eye had reached above the umbilicus. The published reports of my confrères excited my jealousy and wonderment.

I have not impugned their integrity, yet I am frank to confess that there is something in the environment of the operating room that distorts the vision and exalts to a superlative degree the pathological findings. It is the unconscious yielding of weak human nature to exaggerate difficulties that there may be all the greater praise for the achievement of overcoming them.

Chemical and mechanical peritonitis were in those days considered possibilities, and every case was general peritonitis that was not a distinctly localized abscess. Surgeons were not familiar with or had not accepted the teaching of Senn and German authorities. Peritoneal sepsis was hinted at, but not comprehended. Empyema peritonei was incised; quarts of pus evacuated, flooding the operating arena, the surgeon floundering in pus and ignorance, raised aloft his knife, exclaimed, like Monte Christo, "The world is mine." He had done only scavenger work; the battle was waged before he came upon the field. Upon the first approach of the enemy, leucocytes were hurried to the scene of action; phagocytes occupied the skirmish line, while the vital fortress was held by the opsonins.

In my studies of the various surgical diseases of the abdomen I still tried to master the unsolved problem of peritonitis. This labor brought its reward; my mortality list fell from eighty per cent. to perhaps sixty per cent. Prognosis before operation became more guarded, and, what is more to the point, it was appreciated that the ultimate issue of the case does not rest upon the manifest reaction in the peritoneum to infection found at operation; indeed, quite the reverse has been true.

I reached the conclusion that peritonitis is not always the same disease; that many factors, chiefly bacteriological, determined its onset, course, and ultimate termination. Manifestly then, there is no one treatment for peritonitis; no method applicable alike to all cases; no one man's technique that I am willing blindly to accept; no teaching so comprehensive, so universally applicable that we should follow it to the rejection of all others.

I can ask no greater boon than that I may enjoy that discriminating understanding which will guide me to select and apply that treatment which meets the special indications. Such judgment must rest upon an intimate knowledge of the pathogenesis of peritonitis, the behavior, habits, and virulence of all organisms concerned, and upon nature's combative methods; therefore, it must be clearly understood that the surgeon is nature's auxiliary, and I hope to show that rude, aggressive, self-assertiveness, sometimes called thoroughness or radical surgery, hopelessly overturns nature's defence.

When the bacteriologist, after his apparently fruitless but unremitting labor, presents a conclusion following his investigations which does not run counter to clinical observations, but strengthens and sustains them, if we practical workers reject his findings, we discredit science and confess ourselves to be mere votaries of the hippocratic school of medicine which promulgated theoretical dogmas.

We cannot attribute specific action upon the peritoneum to special bacteria, but it can be safely stated that that virulent form of peritonitis in which there is but little serous and no fibrinous exudate, is due to the streptococcus infection; that in the great majority of cases of spreading peritonitis the colon bacillus is the active germ.

I would overshoot myself if I attempted to enter into the bacteriology of peritonitis. We all know that the *Streptococcus pyogenes* and the *Bacillus pyocyaneus* and the pneumococcus produce rapidly fatal results when inoculated upon the peritoneum. Their baneful effect appears to be in the rapid disintegration of the leucocytes.

I shall merely touch upon a new field of thought in connection with the bacteriology of peritonitis, that of induced immunity or the increased resisting power of the peritoneum.

Many experimenters have shown that the resisting power of the peritoneum can be artificially increased, and I quote from Dudgeon and Sargent what has been done along this line: "Issaeff, in 1894, was the first to show that various sterile solutions previously injected into the peritoneal cavity of guinea-pigs could render that membrane more or less refractory to infection with certain pathogenic organisms. In the following year Melsome and Cobbett, working with cultures of 'streptococci,' showed that an immunity could be produced by successive minute inoculations. Durham obtained similar results in rabbits from preliminary infection of sterile fluids. More recently, Salieri and Miyake, working under Professor von Mikulicz, have confirmed these observations and succeeded in producing an artificial immunity in animals by preliminary intraperitoneal injections of sterile saline solution, nucleic acid, and other substances. The protection thus afforded is, as Durham pointed out, due in large measure, at any rate, to the appearance in the peritoneal exudate of certain phagocytic cells. It is a general, not a specific immunity against peritoneal infection. Sargent and Dudgeon believe that this artificial protection has its counterpart in the natural events of peritonitis. Their reasoning is supported by systematic examination of the peritoneum in two hundred and seventy cases operated upon at St. Thomas' Hospital, London.

The organism that is first to make its appearance in the peritoneal cavity under abnormal conditions is the *Staphylococcus albus*. As a general rule it is found on the peritoneal surface at a distance from the focus of greatest disturbance, and it is usually associated with a number of phagocytes at the site of primary infection; the staphylococcus has been displaced by more active and virulent germs.

The staphylococcus is the germ that is present in most cases of intestinal obstruction, tumors with twisted pedicles, and strangulated hernia. If the obstruction or cause is relieved, this germ does not produce a fatal peritonitis; it rarely causes suppuration of the parietal wound. The effect that it does produce is the advent of a number of phagocytic cells.

Now why the staphylococcus appears first upon the scene, we do not know; but it provokes a clear fluid exudate which soon becomes turbid with leucocytes; and, as Sargent significantly remarks: "The more turbid it is, the more it appears to the surgeon that it is something to be washed away."

Later in the stage of inflammation the colon bacillus comes upon the scene. It is on the start, so to speak, which the white staphylococcus had, and the ability of the individual to respond to the call by supplying phagocytic cells that the prognosis to a large extent depends. The proof of this last statement is that in the simultaneous inoculation of *Staphylococcus albus* and colon bacillus there is little or no protective action exerted; that is, there is no phagocytosis and a quickly spreading fatal peritonitis supervenes.

A second important part played by the *Staphylococcus albus* is that it assists in the formation of

adhesions Cultures taken from coagulated fibrinous exudate show the constant presence of this organism. The agglutination of the intestine by fibrinous exudate mechanically resists spreading peritoneal infection. The coagulation of exudate fibrin deposit upon the peritoneum, limits the absorption of toxic material and at the same time prevents egress of organisms from the intestine. It has, therefore, a protective function.

If I grasp the idea correctly, it is now established, chiefly by the work of Dudgeon and Sargent, that the *Staphylococcus albus* and perhaps other microorganisms, when inoculated upon the peritoneum have the effect of causing a copious serous and fibrinous exudate, and invite an abundant migration of lymphocytes into the cavity; and I may add, this serous exudate contains the opsonins, that element in the blood plasma which renders the bacteria available for phagocytosis.

A patient's resistance to an infection then, depends upon the leucocytic reaction consequent upon the infection and his opsonic index. Another element materially affecting the prognosis is the extent of the area over which microorganisms are diffused; for, says J. Walter Vaughan, "given the same organisms capable of forming the same toxin and the same amount of toxin, the severity of the disease will depend upon the area involved."

Some of you may perhaps be familiar with Vaughan's culture experiments in large glass tanks. The inner surface is lined with a coat of agar agar. Over this is poured a very small amount of bouillon culture of microorganisms. It is almost inconceivable the abundant harvest coming therefrom. We know that germs confined in a test tube soon lose their virulence.

The peritoneum is likened to a Vaughan tank; it is a sterile chamber under ordinary conditions, but when danger threatens in the form of perforation from appendicitis or other cause, it attempts to protect itself by the formation of adhesions. This limits the area wherein germs can grow. The circumscribed part of the cavity is converted into a test tube or local abscess, if you please. The microorganisms lose their virulence, and the area of absorption is limited. These experiments have a practical value to which I will again refer in the discussion of irrigation.

My untrained mind does not grasp the technical conclusions of the bacteriologists further than stated above, although I have read with great care and profit the excellent lectures of Dudgeon and Sargent upon the Bacteriology of Peritonitis. It is not yet possible to make a bacteriological classification of peritonitis. For precision and clearness I return to the definite subject in hand, acute diffuse peritonitis, defined as a spreading infection of the peritoneum which results from perforation of the appendix or other viscus. The inflammation is established and progressive without definite limitation: there is evidence of inflammatory exudate, extensive redness of the peritoneum, and intestinal paralysis.

Blake further subdivides diffuse peritonitis into spreading and general. In spreading peritonitis, parts of the peritoneum can be shown to be free from infection. By general, or a better term would be universal peritonitis, we mean that form in which no part, possibly excepting the lesser sac, is uninvolved.

To this I might add acute peritoneal sepsis or the peracute peritonitis of Mikulicz. This is the fulminating peritonitis which proves fatal from septic intoxication or from so-called shock before there is any real peritoneal exudate, but in which there is more or less intestinal paralysis. Bacteria, usually streptococci, are found in the bowel wall and in the omentum and in the lymphatics. This severe form of infection, so frequently fatal in a few hours, is mentioned merely to eliminate it from the discussion and to avoid confusion.

Pardon this preliminary wandering and I will at once descend to the particulars of my subject, "The Treatment of Acute, Diffuse Peritonitis."

Opium and sulphate of magnesium have had their day. To discuss them here would be a tedious recital of medical history.

After Tate came the years of vigorous surgery. The natural reaction from this was the Ochsner waiting policy. He states that no matter in what stage diffuse peritonitis comes into the hands of the surgeon, if the stomach is washed out and nothing administered by the mouth, nourishment and fluid supplied by rectal injections, in the vast majority of cases the process will become walled off, the acute symptoms will subside, and the patient can safely be operated upon at a later date. His treatment is especially directed to that form of perforative peritonitis following appendicitis.

Ochsner adduces statistics to support his position. My personal experience with this method has been peculiarly unfortunate. In every instance in which I have followed it, and I have judiciously selected my cases, I have lost not only the patient, but the confidence of the attending physician; and so I emphatically declare I will have nothing more to do with it. And yet I do not contemn it, for it is a method employed by some of the most fortunate, successful, and ablest surgeons. It is especially popular, however, with the statistic builder; it is an avenue by which the not over-conscientious surgeon may escape from a predicament and preserve his record and leave the internist with the bag to hold to answer the accusation that the surgeon was called too late.

I do not charge that this is done, but it appears to me as a possible expediency; but the following argument I *know* is made: "Why should I operate upon this desperately ill man? The chances are against recovery from operation, and if he dies it will discredit surgery and cause others yet to be taken ill to decline operation." So it is argued, the science of surgery is discredited, and humanity indirectly harmed. This is not the occasion to elaborate further my conception of the surgeon's duty. Suffice it to say that in private work his highest obligation is to his individual patient, regardless of how it may react either upon him, you, or the community. A public official, say a sanitary officer, occupies an entirely different relation toward his patient. If needs be, for the protection of the community, he would be justified in shooting down a pestilential individual.

The Ochsner treatment is popular with some medical men, usually with the class that have a quondam affection for the old opium treatment or the more recent calomel and salts line of management. In many cases, as is well known, the inflammation will abate for the time, and he will score a temporary success. The value of the Ochsner treatment is "that it permits nature to do her best, and that is all there is in it." It has not maintained its popularity.

Simon Young, of Valparaiso, Indiana, addressed this question to twenty-five of the leading surgeons in the United States: "Do you make it a rule to operate upon acute diffuse peritonitis?" Seventeen

replied yes, seven gave affirmative replies with qualifications, one avoided operation if possible.

You see that it is impossible to deal with the subject of diffuse peritonitis without referring to appendicitis, as the peritoneal infection so commonly originates from appendicitis. "This waiting policy has been practised in the city hospitals of Boston with an occasional success, but more frequently ultimate operation has had to be done under less favorable circumstances." (Lund.)

At Roosevelt Hospital, in New York, immediate operation is practised; and one of its representative surgeons so expresses himself upon this point: "The advocates of the Ochsner treatment by rest will concede that the patient will be better off with the appendix out if it can be done without operation. We have simply to weigh the dangers of toxemia and shock of operation against the danger of continued infection, both systemic and peritoneal, from the appendix itself or the escape of its contents." (Blake.) John B. Murphy, with his unparalleled success in thirty-eight cases with one death, has this to say of the Ochsner treatment: "It is the effort of the unconquered, nine-lived procrastinator."

See what another surgeon says: "The diagnosis of perforation, if we are on our guard, is easy; and, although it may be difficult to say which organ is affected, this does not make any difference. The vital consideration is that it has happened, and immediate operation must be performed." These are the words of William J. Mayo, and I offer them as conclusive evidence against the Ochsner treatment; yet I am aware that this surgeon advocates and practises delay in certain stages of appendicitis, and I am at a loss to comprehend a rule that applies to one portion of the abdomen and not to the other. The limited absorbing capacity of the lower zone does not give the claimed immunity; and the infectious matter escaping from the appendix may be as abundant as from a perforation in other viscera.

In considering the surgical management of acute diffuse peritonitis, I shall omit many details that would prove irksome to the surgeons in the audience, and uninteresting to the medical men, and enter at once upon the discussion of certain points that are under dispute hoping that I may bring out of much confusion some system, some intelligent application of the means at our command.

I would eradicate, if possible, from the literature of this subject, that empiricism which seems to possess it. Special steps in the technique are observed; special methods are employed, and why? Because, forsooth, some surgeon has reported a small series of cases all successful; therefore, his method must be good. Let us ask ourselves the question before accepting the method of treatment, why is it preferred? What is its foundation? But above all, what is the surgeon's capacity and inclination for intelligent observation? I grant you such inquisitiveness may lead us into embarrassment; yet I contend it is a search after the truth, and upon this line I will now briefly pursue this subject.

All patients with tense bellies and that are vomiting, should have gastric lavage before taking the anesthetic. General anesthesia is preferred to local. If the patient is too ill to take ether, then I hesitate to operate upon him. The incision should be over the supposed site of infection and should be free so as to permit ready access, for the indication is to remove, close, or segregate the source of infection. If there is great accumulation of fluid, the force of intraabdominal pressure will cause it to spurt from the cavity when the peritoneum is nicked, and we must avoid extrusion of coils of intestine from the wound. Although we find free fluid and distended intestine under our incision, we must assume that peritonitis is limited, and employ gauze to cofferdam the field of operation. The gauze so packed about has a three-fold effect; it prevents prolapse of the intestines, avoids needless handling of those viscera, and while in place absorbs what fluid there may be, preventing its dissemination, soiling clean areas should we accidentally break up an adhesion. If no adhesions are found, the gauze rapidly takes up free fluid from the general cavity. This protective packing should remain in place until the local focus of infection is dealt with.

Finding a great quantity of purulent matter and no manifest adhesions, we come to the question of its removal. It has been uppermost in the minds of surgeons that the first step after opening the abdomen and removing the source of infection, is to cleanse the peritoneum of the exudate or other foreign material.

Until very recently copious irrigation has been the method of treatment. Now, in this country, following the teaching of Murphy, it is held to be a grave error of technique to wash out the peritoneal cavity. How often has it been expressed of late that irrigation is wrong because it disseminates septic matter throughout the peritoneum. This is not all; just a word to refreshen ourselves of the facts in bacteriology. In all severe cases of perforation peritonitis the colon bacillus or some more virulent germ is present at the focus of infection, while in remote portions of the abdomen the *Staphylococcus albus* may be the only microorganism found; indeed, cultures from remote regions may be sterile.

There can be no doubt in these cases that if we flood the abdomen we carry from the intensely septic field a watery solution of colon bacillus, and at the same time we wash out the phagocytes which are Nature's only soldiers of defence. We practically make of the general peritoneal cavity a Vaughan tank, and in a short while there is a universal growth all over the peritoneum of microorganisms, and sufficient toxines are eliminated to carry out patient away.

I hold that experiments of bacteriologists have demonstrated this fact, and now for the clinical substantiation of it. Between the years 1899 and 1903, there were operated upon at St. Thomas' Hospital, London, 119 cases of appendicitis with diffuse peritonitis; 100 were treated by washing the peritoneum with large quantities of sterile water or normal saline solution. Of these 80 died. The remaining 19 were treated locally; of these 10 died, that is, the immediate neighborhood of the appendix was gently sponged out, while the upper part of the peritoneal cavity was not interfered with. The mortality then after general lavage is 80 per cent. in this series, against 52 per cent. when local measures only were employed. (Dudgeon and Sargent.)

In another series of 25 cases, 19 were treated by thorough washing, the upper part of the peritoneal cavity being dealt with as thoroughly as the lower; of these 18 died. The remaining 6 cases which were, indeed, the most severe ones, being too ill for lavage or evisceration, the appendical region alone was treated by dry sponging. All six of these cases recovered. (Dudgeon and Sargent.)

Although it will weaken my argument somewhat, I must utter a warning against attaching too much consequence to statistics obtained from a small series of cases, for I observe that in 1900, George

R. Fowler reported 9 successive successful cures of general peritonitis by flushing, drainage, and Fowler posture; however, in 100 cases of septic peritonitis following appendicitis, reported in 1904 by this surgeon and R. S. Fowler, the mortality was 67 per cent.

Up to the end of 1905 it was almost the universal practice of surgeons to irrigate in diffuse peritonitis, and all were not so particular about the selection of their cases; indeed, one prominent surgeon of Louisville, Ky., says, "Even in pelvic abscess I irrigate under the liver and loin." I am pleased to say this is not the common practice. Such good men as McCosh, Lund, Blake, Wyeth, Eisendraft, and MacArthur still used irrigation.

Of 1069 cases of diffuse peritonitis collected from the clinics of the best surgeons in America and abroad between the years 1888 and 1904, the mortality was 65 per cent. From 1900 to the end of 1904, of 400 cases the mortality was 55 per cent. In perforation peritonitis, Mayo admits a mortality of about 50 per cent.

Knowing these results, and my own record not being better, I must express amazement at those men who claim that the mortality of peritonitis should not be much over 5 per cent. The whole trouble lies in our conception of what constitutes a diffuse peritonitis; however, in answer to my pessimism I quote with pleasure from a letter received December 11, 1906, from Dr. J. B. Murphy: "I have had, up to date, 38 consecutive cases of general suppurative peritonitis, which includes all the cases I have had since February, 1903, and of these we have had 37 recoveries." With this astoundingly successful record of Dr. Murphy's we have not the right to question any man's report.

It was Murphy's protest against irrigation that attracted the attention of surgeons within the last year. We now note he has many followers. With the exception of Simon J. Young, I find no one offering an explanation for the change of technique. It may be stated as a positive observation that those who do not irrigate have a lower mortality rate than those pursuing the old practice.

Since I disapprove of irrigation for the reason that it disseminates infection and removes the phagocytic cells, by what method then is the purulent matter to be removed? Much of the fluid will be absorbed by the gauze packing placed about the field of initial infection. Such fluid as comes within easy reach should be taken up with gauze pads, gently pressing the pads into the puddles of pus. The forcible thrusting of gauze sponges between intestinal coils into peritoneal recesses is especially condemned.

Some years ago Finney advocated wiping away the dirty fibrinous deposits with gauze. Consider for a moment that peritonitis is an inflammation of the cellular structure below the endothelium, and when this layer of shingles, as some one has aptly called the endothelium, is removed with the clinging fibrin, the blood-vessels and lymph channels are opened for direct absorption. If this is true, surely Finney's practice is faulty technique; and if I mistake not, he admits it.

Placques of fibrin on the intestines should be left undisturbed. Nature is capable of making her own toilet of the peritoneum with infinitely more gentleness, thoroughness, and safety than the surgeon. The reason for this, I think, I have clearly set forth.

Notwithstanding the attitude of the question now, there are conditions under which I would irrigate. When quantities of foreign matter are disseminated throughout the peritoneal cavity, I know of no way to so gently and effectually remove it as by irrigation, especially if we employ a Chamberlin or Blake's irrigator, introduced through the incision in the epigastric region and irrigate from above.

Evisceration produces greater shock and is followed by post-operative tympany. When the intestines are extruded from the abdomen the mere handling of them increases the congestion; and if they are not already tensely full of gas, they quickly become so, so we encounter many difficulties in replacing the intestines. When evisceration is necessary, it is one of the conditions in which I think enterostomy and emptying of the intestines through a Paul tube is quite the proper thing. As a rule, enterostomy is not a desirable procedure except in post-operative peritonitis where paralytic ileus is a conspicuous feature and intestinal toxemia as much as peritoneal sepsis is contributing to the patient's intoxication.

In considering the subject of drainage, there are one or two points that bacteriology has worked out. In peritonitides, due to the colon bacillus, streptococcus, or any of the more virulent germs, infection of the parietal wound is almost sure to occur; but much less likely to do so if the wound is drained down from, but not below, the peritoneum.

Of course we can only determine the nature of the infection by the severity of the symptoms; therefore in the milder cases of diffuse peritonitis I would not drain at all. The drainage of the general peritoneal cavity is physiologically impossible; therefore, "when all peritoneal surfaces look alike, it is a very good rule not to attempt drainage."

The discharge from the drain is largely due to the irritation of its presence. We have three purposes in introducing drainage: first, it is supposed to control hemorrhage; second, we use large gauze drains after the method of Mikulicz for the purpose of segregating a septic field; and, third, with the idea of forming a path of least resistance out of the body. The latter is by far the most frequently attained result, whether desired or not.

When drainage is employed the tube or cigarette is brought out through a stab and in this way we avoid infection of the operative wound. Drainage has some harmful effects upon the prognosis; naturally you would say only severe cases are drained; but this is not the explanation.

In twenty-nine cases of diffuse peritonitis from appendicitis, drainage was employed in seventeen cases; that is, drainage down to the peritoneum only. Of these only one patient died, whereas in twelve instances where there was deep drainage there were five deaths. Another series of twenty-six cases that were deeply drained, fourteen deaths; twenty-five superficially drained, five deaths. These facts were taken from Blake of Roosevelt Hospital and they are significant.

The objections to employing drainage is that it does not drain: that in a short time we have a sinus leading into the peritoneal cavity. Of course drainage increases the tendency to intestinal obstruction and to hernia. If it is possible for a diffuse peritoneal suppuration to subside under the Ochsner treatment, then that forever and a day puts an end to any further debate concerning any propriety of drainage. Murphy employs deep drainage.

The assumption that free peritoneal fluid always gravitates to the pelvis has more than once led us

astray. It was formerly thought that genital tuberculosis was due to the escape of the tubercular bacilli through the visceral peritoneum settling by gravity in the pelvis, there infecting the uterine appendages. Murphy's experiments seemed to confirm this, hence he holds to it as a part of his technique in the management of peritonitis. This idea induced Flower to place patients in the sitting posture. Before him, however, Lennander had sought to secure gravitation to the lumbar region. The line of infection is by no means always in the direction of gravity; furthermore, we can say, upon the authority of Sir Frederic Treves, that the tendency of fluid is not to gravitate toward the pelvis. I was recently impressed with this fact when operating upon a case of gastric perforation some sixteen hours after the accident. After washing out the abdomen, as I imagined, thoroughly, the irrigating fluid escaping through a large tube placed just above the pubis, I believed the cavity comparatively clean, when, as a last touch in the toilet, I raised the stomach up. From under it and the region of the spleen there gushed forth a quantity of food and inflammatory exudate. This fluid had remained in the upper compartment at least sixteen hours; of course had the patient not been operated upon the agglutination of the intestines would have served to still further imprison it until the adhesion melted down under the influence of advancing infection.

It is my observation that Fowler's position does not specially facilitate drainage. The theory that free peritoneal fluid gravitates is held by men of great authority. Kuster, confident in the belief of gravity, turns his patients upon their belly, while Fowler sets them on their butt—"so there you are" (Mr. Dooley).

It is amusing to see how unthinking men have advocated the Fowler position. We are even led to believe that recoveries are due to it alone; and while I think, as above stated, that it has very little effect upon drainage, it is nevertheless the most natural, most comfortable, and most desirable posture after abdominal section. In it the patient is able to relax himself; the viscera fall away from the diaphragm, and deep respiratory excursions are permitted. The patient can move his arms freely, a thing very essential for the comfort of one that has been laparotomized; indeed, I think it cruel to put a patient to bed with the hands confined under the cover. All patients that are subjected to abdominal section should wear a short outing jacket with large loose sleeves, so that they may, without exposure, place their hands above their heads, the favorite posture.

When the focus of infection is removed, the intraperitoneal tension taken away by the escape of the exudate, and drain, if used, put in place, the operative wound is closed; the patient, if very ill, should receive a hypodermoclysis of physiological saline solution from 500 to 1000 c.c., properly dressed, and returned to bed and placed in sitting posture well supported.

Now is the time for the proper observance of those principles laid down by Ochsner. Murphy prefers continuous rectal instillation of warm saline solution to intermittent enemata. Many surgeons give their patients water freely by the mouth. I find it best to withhold all water for twenty-four hours.

If the patient is extremely restless the first twelve hours, I do not hesitate to administer morphine, grain 1-8 or 1-16, to be repeated in two hours if necessary. Should vomiting be distressing, I permit the patient to drink freely of hot soda water. When this is ejected the stomach is quiet. If, however, vomiting persists or should recur with annoying frequency at any time during convalescence, I wash the stomach out. Another indication for gastric lavage is distention of the stomach, as shown by epigastric fullness, frequent belching, or hiccough.

Morphine is not repeated unless the patient is in such condition that there is no objection to its administration.

All drains are removed in forty-eight hours. There is no great hurry about purgatives or stimulating enemata. When the Murphy method is employed, patients pass flatus freely, usually within the first eighteen hours. Yet it is my custom about this time to administer two grains of calomel. The saline enemata invite an easy bowel action. More drastic methods are not required and are of questionable utility.

If a stimulating enema is used, it should be administered with the patient on the left side and the clysis given high into the colon.

Should the patient show reaction from sepsis, but develop great tympany, with vomiting and fast pulse with absolutely no bowel action, that condition we call paralytic ileus. Then an enterostomy with the aid of Paul's tubes should be done. This can be accomplished with cocaine anesthesia.

When the bacteriologists can produce a serum antitoxic to the colon bacillus, then much may be hoped for in the management of certain desperate inoperable cases of diffuse peritonitis. Perhaps it is not visionary to predict that the magician of the laboratory may entirely displace the surgeon.

Now, gentlemen, I have told my tale. The paper is incomplete in many details and original in none. The giants of our profession have been at work in this field; a dwarf upon their shoulders may see farther than they. If one's name is not mentioned, I question if he has the right to cry "stop, thief" for he before me was a pilferer.

The grouping, method, and wandering way are my own; these no man will lay claim to, therefore none have I offended. I respect every man's opinion and concede his right in this unsettled state of the case to follow his own method. I will not decry them if they have a rational basis; but for God's sake let him think for himself and be no man's flunkey.

KOCH'S EMULSION OF BACILLI IN THE DIAGNOSIS OF INCIPIENT THORACIC TUBERCULOSIS.

By WILLIAM MEYER, M.D.,

WEST HOBOKEN, N. J.

My endeavor in this article is the demonstration of the possibility of a diagnosis of early tuberculosis by means of Koch's new tuberculin (emulsion) before we can arrive at a positive diagnosis by any other means. I therefore choose 28 cases of incipient tuberculosis in private practice. These cases were collected during the years of 1905 and 1906.

Case I.—Mr. S., 30 years of age, 6 feet high, weighing 186 pounds when he called first. He had been ailing for about one year. He complained of a sense of constriction in the throat which forced him to make efforts at coughing and clearing his throat, while actually there was no expectoration of any amount present. He consulted two throat specialists, one of whom treated him for catarrh

and cauterized his throat by the electric cautery for about six months, once a week. The trouble did not improve and the patient went to another specialist, who treated him for chronic pharyngitis for four months; but also in vain. The patient called to see me in December, 1905. History: Father and mother living; neither has ever been seriously ill; grandfather and grandmother died both at an advanced age, above 70. He never had any disease, except measles, when a child. He is married and has one child, a boy, who is healthy. His wife was treated for tuberculosis four years ago, but is now well. I examined her and found no evidence of disease. He indulges in drink frequently. His present ailment began in January, 1905, after, what he called, a spree. He never had pains in the chest; no night sweats; no loss of weight. The only symptom was the constriction in the throat, just behind the upper sternal edge. I made the patient undress to the skin. Inspection revealed nothing of note; was well nourished, and good developed chest; expansion was perfect over both apices. Palpation revealed nothing of note. The percussion resonance was slightly impaired above the left clavicle anteriorly and a little less posteriorly. A few crackling râles at the end of a full expiration were audible, while normal expiration did not unveil this fact.

The voice was slightly hoarse. Heart normal. The glands of the body showed no enlargement. Temperature was normal, it having been taken three times per day for several days before and after exercise. Pulse 78. Urine normal. Blood normal. Sputum could not be obtained. I took a cotton wrapped probe, passed same down the throat, and swept all parts that could be reached a number of times; examined the secretion, but could find no bacilli. Throat treatment was of no benefit to him in the past and the patient did not wish any more of it. The patient consented after a few days to the injection of tuberculin (emulsion).

I made the first injection on January 9, 1906, at 8 P.M., the amount injected being 0.0025 mgr. in a solution of sodium chloride and carbolic acid. The temperature was taken at 8 A.M. on the following day and again at noon and at 4 P.M. No reaction. Three days later I made the second injection, consisting of 0.008 mgr. The next morning at 6 o'clock the patient sent for me, complaining of pains in the shoulders and an increased cough; the temperature showed 101° F. at that time. The temperature took a typhoid course for three days, varying from 99.5° F. A.M. to 102° F. P.M. On the fourth day all symptoms were gone. The patient was sent to North Carolina, where he was examined and sent home as nontuberculous. He began to work again and continued so until March, when he caught a severe cold. The sputum now could be obtained and was examined. Bacilli were found by the Board of Health and myself. The patient was sent to Saranac Lake, where he stayed four months and returned home, his throat being well.

CASE II.—Miss C., silk worker, twenty-two years of age. Family history negative. Contracted a lobar pneumonia in September, 1905, from which she never fully recovered. She was examined by two physicians, who pronounced the case pleurisy. I saw the patient first in January, 1906. Examination revealed a crackling sound above the right clavicle. Beyond this there was nothing to indicate any trouble. She coughed and had always some sputum in the morning, which was examined eight times; but the result was always negative. Tuberculin (0.0025 mgr.) at 8 P.M. Reaction occurred at 2 P.M. the next day, which disappeared in twenty-four hours. The patient went to Liberty first, then to Denver, Colo., where she is working at present.

CASE III.—Mr. G. R., upholsterer, aged thirty-six, born in New York. Both parents alive. Mother had a cough for past fourteen years; father healthy. Drinks liquor to excess. Was never sick until August, 1905, when a tight feeling of the chest troubled him. He took cough medicines; found some relief, and went about his work as usual. In February, 1906, he consulted me regarding a hacking cough. Examination revealed a slight depression above the left clavicle. No pain on that side, but he had pain on the right side in the clavicular region. Sputum was scant; present only in the morning. Same was examined four times; no bacilli present. Koch's emulsion was injected and the reaction took place thirty-two hours later. Severe pains all over the body and temperature of 102°, which remained for one day and a half. Sputum was again examined by the Board of Health on February 8, four days after the injection, when bacilli were found to be present. Patient was lost sight of.

CASE IV.—G. B., grocer's clerk, age eighteen. Father died suddenly. Mother died of pneumonia. Patient was always well, until three months ago. Since that time he has had a tickling in the throat; a morning cough with very little expectorate now and then; no blood. Had never night sweats. No diarrhea. I saw him on March 15, 1906. He had lost fifteen pounds during the past year. His chest was well formed, large, and symmetrical. Over the right apex posteriorly the percussion note was slightly less resonant and higher in pitch than on the left side. The breath sounds were rough over the same area, but not continually so; there was no tubular breathing present. On each inspiration a light click was audible over the apex of the left side anteriorly, the resonance was not impaired, râles were absent.

The temperature was normal, pulse 80, respirations 18. The cardiac second sound was a little accentuated everywhere, otherwise the heart was normal. There was a tender spot on pressure over the pylorus, some rigidity, and a slight amount of pain constantly. His breath was garlick-like, a symptom upon which I place some importance in cases of tuberculosis. The rest of the examination revealed nothing. The hemoglobin was 56 per cent.; urine normal. I examined him five times in two weeks but found no change, excepting on two occasions a few fine crepitant râles over the left apex anteriorly. The sputum contained no bacilli, typical or atypical, in seven examinations. Diplococci and streptococci were found the first time. I used new tuberculin, initial dose 0.0025 mgr. Three days later 0.005 mgr., and four days later 0.012 mgr. Eighteen hours later the reaction set in, lasting twenty-four to thirty-six hours. Patient went to France, exact place not known.

CASE V.—A. A., an Italian, aged thirty-five years, father had heart disease and the patient suffered from mitral insufficiency, with good compensation. He developed a cough three months ago, had a frothy expectoration, no bacilli. No physical symptoms, but complained of pain, stabbing in character, underneath the right clavicle. Tuberculin was injected four times, but no reaction took place. This was on March 26, 1906. Treatment: Ichtalbin, heroine, and guaiacol carbonate. Patient gained eight pounds in five weeks and felt better. He re-

turned to me in July, with the same complaints, had also lost six pounds. Examinations, three in number, revealed nothing. Tuberculin was used again, dose 0.008 mgr., reaction taking place twenty-four hours later. On July 29 the sputum was examined again, and a few atypical bacilli were found. The tuberculin was continued in addition to the previous treatment, open air and rest with light exercise were instituted. The dose of tuberculin is 0.008 mgr., every three weeks, reaction very slight and at times none. The patient, being poor, is now working in a silk-mill, has gained fourteen pounds, and keeps up the treatment as far as possible, *i.e.* open windows at night, liberal diet, and hygienic rules. He still takes the tuberculin; he claims it benefits him greatly.

Cases VI., VIII., XI., XXI., and XXII. are somewhat similar and need no individual description. Ages: thirty-two, eighteen, twenty-four, twenty-one, twenty-nine, all working people. Cases VIII. and XXI. were in women. Two had several attacks of tonsillitis; one had occasional night-sweats; in three the hands were constantly cold and bluish. Physical symptoms slight or absent. Sputum, blood, and urine negative. No heart lesions. Family history negative as to lung trouble. All complained of a dry cough. The chest developments were fair. No. VIII. had slight depressions under both clavicles and a systolic murmur over aortic and pulmonary areas (cartilages). Tuberculin was used in all of them. All reacted with one or three injections. One has died since with acute nephritis. Two are attending to their work at present. One has disappeared, whereabouts not known.

Case VII.—F. S., age twenty-eight, electrician. Family history negative. Saw me first in December, 1905. Sputum negative, blood normal, heart normal. Examination revealed a small depression above right clavicle, no other signs. Tuberculin was used and reaction set in fifteen hours later. Patient went to Dr. Hessner, Davos Platz, who confirmed my diagnosis by tuberculin test.

Case IX.—Swiss, aged twenty-eight years, embroiderer. He called on me the first time in June, 1906, had a temperature of 102° and a few râles below the right clavicle anteriorly and posteriorly. Sputum was negative, urine normal, tonsils highly inflamed and enlarged. Tonsils were later on removed. Patient had always been well until December last, when he caught a cold and had suffered ever since from pains in his chest. Lost five pounds; coughs only in the morning. Chest is well developed. Breathing is at times wavy. Tuberculin was used four times with slight reactions the first and last time. He went to Dr. Jacobi (sanatorium), Arosa, Switzerland.

Case X.—Mrs. A. L., age thirty-one, married, three children. No family history. Complained of pain in the epigastrium and indigestion, for which she consulted me. Had had occasional night-sweats. No temperature, no loss of weight. Hands clammy and cold. Voice was whispering. Pectoriloquy was present on one side. The percussion note was slightly impaired over right apex. The rest of the examination was negative. A little sputum was obtained but contained no bacilli, though it did contain a little elastic tissue. Tuberculin was injected and a reaction took place two days later. She was advised to go to Saranac Lake, from where I received a letter from her, but my answer failed to reach her, and I lost sight of the case.

Case XII.—Miss L., aged twenty-eight years, a nurse. One brother died of phthisis, one sister is now in California to be cured of lung trouble. She feels tired and sleepy all the time, poor appetite, has lost some in weight. Has now a sore throat, coughs occasionally, never had night-sweats, no symptoms indicating tuberculosis.

She is anemic. Percussion normal, urine normal. On one occasion I thought I heard a fine crackling sound in the right apex, but failed to find it later. There is a friction sound in the right axilla high up. Dr. Russel of New York examined this case, but he did not state the diagnosis; he put the patient on his emulsions, but the patient vomited the same every time. New tuberculin was injected and a reaction took place within twenty-four hours. She is now taking the outdoor treatment in North Carolina.

Cases XIII., XV., XVI., and XXX. show similar traits and will be described collectively. All the patients are silk workers, ages ranging from nineteen to thirty-four, two men and two women. All had lung troubles in their families, pneumonia, lung abscess, and one tuberculosis. All complained, when I saw them first, of fatigue, soreness in the chest, and an occasional cough. Physical symptoms were: Anemia, poorly nourished, slight depressions above clavicles, chest asymmetrical. Percussion note showed slight differences over the apices more or less in all. Breathing jerky and the expiratory sounds prolonged. Sputum negative, no night-sweats. Three of these reacted to tuberculin. One was killed the day after the injection by an accident; two of these cases are now under the care of Dr. Janssen, Arosa, who verified my diagnosis; one of the four was lost sight of.

Case XIV.—Miss B. v. S., eighteen years old. Family history: Parents both living. She had never been ill until July last, when a diarrhea left her ever since in a debilitated condition with an occasional cough. I saw her in October, when I made an examination which brought out nothing to indicate tuberculosis. Blood was deficient in hemoglobin. I injected tuberculin four times but gained no reaction. Still her cough continues up to date, November, 1906, and the case is suspicious.

Cases XVII., XIX., and XXVIII. have the general traits in common, chest poorly developed, shallow breathers, pain and tenderness in the epigastrium, second pulmonary sound accentuated. Cough lasting from three months to six weeks, very little sputum, containing no bacilli, urine normal. Two of these patients were treated for neurasthenia. All reacted on first injection of tuberculin. One of these patients is now in San Remo, one in Charlotteville, and one at Liberty.

Cases XXIII. and XXV. also show similarities; both had a cough for a few months which did not yield to ordinary treatment. I saw them first in September, 1906. Family history negative. One has mitral stenosis. Both well developed, one had interference of percussion note on right side above clavicle, the other some crackling sounds over the left apex above the clavicle. Sputum was abundant and was examined six times for each; in one case atypical bacilli were found at first examination, but none since. Both reacted severely to the tuberculin. One is now in Davos Platz, the other in some German sanatorium and is being treated by tuberculin.

Case XVIII.—Mrs. St., twenty-eight years old, German by birth, eight years in America; has five children; no uterine lesion, heart normal. Disease began four years ago; dry cough, which was diagnosed by a physician as pharyngitis; another one treated her for kidney trouble, and a third one for indigestion, cancer, etc. I saw the patient first in December, 1905. Examined her and found no lung

symptoms, but a slight cough all the time, hacking in character, very little sputum which showed no bacilli, but a few streptococci. Urine negative, blood negative, slightly anemic, no elevation of temperature; did her daily housework, weight 90 pounds, had lost considerable weight since she began treatment first. Appetite fair, sleep restless, dreams at night; she is melancholic at times, tired most of the time, looks pale, has no tremors, no particular pain, is nervous; her sclerotics are a whitish blue, breath garlicky, nails decidedly curved. No edema, pulse 90 after light exercise. I advised sanatorium treatment, but the patient refused. Then I treated her as best I could at home. Open windows, good hygiene, liberal diet, sitting out of doors about eight hours per day, etc. In January, 1906, her condition was about the same. Another thorough examination proved negative. Sputum again examined by the Board of Health, but also negative; the sputum was examined in all nine times, but always negative. Her bowels were constipated and she complained of neuralgic pains below the scapulas and under the right clavicle. Breathing was of a wavy character over right apex, no râles, there was a murmur in the right axillary region (friction like, pleuritic?). In March a nurse was engaged to enable her to attend better to her condition, as patient was neglectful. On March 6, 1906, I injected Koch's emulsion 0.0025 mgr., no reaction. On March 8 I injected her the second time, 0.005 mgr., no reaction. On March 13 the third time, 0.01 mgr., no reaction. On March 16 and 18 again, with no reaction. Lastly, on March 24, 0.005 mgr.; reaction was severe after thirteen hours, pains in all joints, locally small erythema. Fever at 10 A.M. On March 25, 104° F. (all injections were made at 8 P.M.); this fever increased to 106° F. at 2 P.M. the same day. It showed a typhoid type, *i.e.* a morning remission and evening exacerbation. On March 30 she was free from fever. On March 31 she complained of severe pain in the abdomen, increased cough, abdomen distended decidedly tympanitic. At night she became unconscious, bowels constipated, urine deep colored, sputum examined and bacilli were found. She was sent to Christ Hospital, Jersey City. Dr. Dickinson examined her, but found no lung symptoms, except as found by me; he advised operation for abdominal relief and found a great amount of ill-smelling fluid which was tuberculous. The patient died a few weeks later of tuberculous peritonitis.

Cases XXIV. and XXVII.—Husband and wife Saw me first on September 21, 1906; both had severe colds, as they termed it, for about three months. Both were examined. Husband had fine râles over right apex, above the clavicle, and insufficient extension of chest in that region; the rest of the examination was negative. Wife had mucous râles in the bronchioles of the right apex and right base deep down; pain in the left apex and shoulder and a little blood-streaked sputum; no fever, the temperature having been taken daily for one week, twice a day, before and after exercise. Sputum negative; six examinations each. The husband reacted on the injection of tuberculin; his wife did not; the latter received five injections at intervals of one week, the husband received two injections. Both are Germans, and I made them aware of the seriousness of the disease. They decided to go to the old country. I recommended them to Dr. Fraenkel, and I expect to hear from him in the near future.

Case XXVI.—This patient, male, twenty-two years old, claimed he had tuberculosis at one time, a physician in Brooklyn having made the diagnosis; he prescribed a cough medicine, and patient got well. His sputum was not examined at that time. The former physician had made an examination without removing the patient's clothing. I found no symptoms whatever, except a harsh voice (hoarse). Sputum showed no bacilli in eight examinations. Three injections of tuberculin brought on a mild reaction; the patient is treated at home and receives regular injections at definite intervals.

A request of Dr. Camac, New York, induces me to publish these cases; at the same time I thank Dr. Brown, of Saranac Lake, most sincerely for looking over my papers and for his suggestions.

In order to present a short view of the results obtained I have attached two tables at the end of the article which are self-explanatory. Table I contains in the first column the number of case, next the sex, then the age, amount of bacillary emulsion used, number of injections made, and lastly, the reaction.

Table No. II contains the number of case, character of reaction, sputum before and after injection. Wherever two numbers appear under "after" it means that the first number was sputum which contained bacilli, while the second set indicates that no bacilli were found, *i.e.* after some treatment. Then follows the column of the history of the case, and lastly, the occupation of the patient.

TABLE I.

No. of Case	Sex	Age	Amount of Bac. Emul. Used	No. of Injections	Reaction
1	male	30	a—0.0025 mgr. b—0.008 "	2	10 hours later.
2	female	22	a—0.0025 "	1	18 hours later.
3	male	30	a—0.0025 "	1	32 hours later.
4	"	18	a—0.0025 " b—0.005 " c—0.012 "	3	18 hours later.
5		35	a—0.0025 " b—0.005 " c—0.012 " d—0.024 " e—3 mos. later. 0.008 mgr.	5	24 hours after last.
6		32	a—0.0025 " b—0.012 "	2	8 hours later.
7		28	a—0.0025 " b— ?	2	15 hours after first injection. The second injection was made in Davos Platz.
8	[illegible]	18	a—0.0025 " b—0.005 " c—0.012 "	3	slightly after 2d and more after last (about 8 hours).
9	[illegible]	28	a—0.0025 " b—0.005 " c—0.012 " d—0.024 "	4	slight, 12 hours after 1st and after last.
10	female	31	a—0.0025 "	1	48 hours later.
11	male.	24	a—0.0025 "	1	24 hours later, severely.
12	female	28	a—0.0025 "	1	24 hours later.
13	"	19	a—0.0025 " b—0.008 "	2	18 hours later.
14		18	a—0.0025 " b—0.005 " c—0.008 " d—0.012 "	4	no reaction.
15		27	a—0.0025 "	1	was killed 24 hours later by accident.
16	[illegible]	1	a—0.0025 " b—0.012 " c—0.05 "	3	18 hours later.
17	female	22	a—0.0025 "	1	24 hours later.
18	"	28	a—0.0025 " b—0.005 " c—0.02 " d—0.02 " e—0.02 " f—0.005 "	6	13 hours after, severely.
19		30	a—0.0025 "	1	18 hours later.
20	[illegible]	34	a—0.0025 " b—0.005 " c—0.012 "	3	30 hours later.
21	female	21	a—0.0025 " b—0.005 " c—0.012 "	3	30 hours later.
22	male	20	a—0.0025 " b—0.005 "	2	8 hours later.
23	"	26	a—0.0025 "	1	18 hours later, severe.
24	female	34	a—0.0025 " b—0.005 " c—0.008 " d—0.012 "	5	no reaction
25	male	28	a—0.0025 "	1	24 hours later, severe.
26	"	22	a—0.0025 " b—0.005 " c—0.012 "	3	16 hours later, mild.
27	"	25	a—0.0025 " b—0.005 "	2	12 hours later.
28	"	24	a—0.0025 "	1	10 hours later.

TABLE II.

No.	Duration of React.	Character of Reaction	Sputum Before	Sputum After	Sputum In .*	History	Occupat'n
1	3 days	Temp. 101°-102°F. Typ'd in char.; p'ns in j'nts sev're.	neg. 1	pos. 1	neg. 2	wife tub?..	bookkeep'r
2	36 hrs..	Temp. 102° malaise.....	" 8	" 2		?	weaver
3	30 hrs..	Severe pains all over body temp. 102°...	" 4	" 1		father died sud'n; mo'r chr'c c'ugh.	Upholster'r
4	36 hrs .	p'ns in chest; temp. 101°-102°.....	" 7 dip. & strept.			.....	clerk
5	?	p'ns in sh'lder joints; temp. 99°-101°....	Neg. 4	" 1		father's ht. dis., died.	weaver
6	4 days..	severe pains and temp...	" 6			?	Millworker
7	12 hrs..	las't'de; pains in left clav'le; temp. 103°...	" 1			neg	Electrician
8	2 days..	las't'de vag'e p'ns, drowsy, temp. 99½°-102°.....	" 4	Pos 1		?	Millworker
9	3-4 hrs. twice....	tired; temp. 101°....	" 5	" 2		?	Embroid erer
10	2-3 days	h'd'che, b'k-ache; temp. 101°-103°..	" 8			neg	House-work
11	8 hrs....	severe stab'ng pains under scap's: temp. 101°-103°...	" 8			neg.	Millwork
12	4 days .	unable to be ab't; very fatig'd; temp. 100°-102°....	" 4	" 1		tub .	nurse
13	5 days..	severe p'ns in all joints; s'l'n gl'ds of g'ns & neck; temp 100°-103°...	" 6	" 2		father pul abscess..	weaver
14	no react	.....	" 8	.		neg.....	no work
15	was k'ld shortly after injection..	.....	" 2			mother died of pneumonia	silk-worker
16	9 hrs...	p'ns & temp	" 8	" 2		tub	silkworker
17	2½ days	tired & dr'sy, temp. 99°-101°.....	" 5	" 1	neg 1	?	?
18	8 days	typ'd char of temp.; pains all over, more in streptoc., chest & abd'n	" 1 2	" 2		neg. . .	house-work
19	4-5 hrs	tired; temp 101°-102°. .	" 4	" 1	" 2	?	teacher
20	12 hrs..	pains and fever. . .	" 0	" 1	" 1	mother died of pneumonia	silk-weaver
21	2 days..	great fatigue dull aches, temp 99°-102° F....	" 6	" 2	" 2	?	?
22	9 hrs..	stab'ng pains in shoulder, j'ts; sw'l'g of g'ds in neck, temp. 102°	" 8	.		. .	laborer
23	1 day..	very severe p'ns & temp 102°-105°.	" 6 once at'o'al bacilli	" 2	" 1	neg.	no work
24	no rea'n	. . . . .	" 6			neg...	farmwork
25	3 days .	severe p'ns in j'ts; unable to move neck & arms; temp 99°-102°....	" 6	" 1	" 1	neg.	?
26	a few hours.	light pains; temp. 99½°..	" 8	" 1	" 3	tub.?	book-keeper
27	1-2 day.	malaise: temp. 101° ..	" 6	. .	. .	neg...	farmwork
28	6 hrs...	headache and vague pains; temp. 100° ..	" 4	" 2	" 1	?	?

*NOTE.—Numbers indicate how many times sputum was examined with results; if two sets of numbers follow under "*After*," it means that the first is positive, and second negative, due to treatment.

Conclusion.—This table demonstrates to me the value of the bacillary emulsion for diagnostic purposes, and it shows further that we have a valuable means of determining an early tuberculosis which we could not positively discover without that means.

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Lupulin.—T. F. Reilly finds lupulin a valuable mild anodyne and hypnotic and often an excellent substitute for more active drugs of this class. He believes it is a safe substitute for the coaltar preparations. For children it is often a good substitute for opium, as also for old people suffering from advanced renal disease, and it is of especial value for sleeplessness and nervousness following a mild debauch.—*Journal of the American Medical Association.*

OBSERVATIONS ON AN IDEAL LOCAL ANESTHESIA FOR SUBMUCOUS RESECTION.

BY F. E. MILLER, M.D.

NEW YORK

APPRECIATING the value of an ideal method of local anesthesia, and believing that there are others who have had unfortunate experiences, I present a method that has been found ideal in my practice and more satisfactory than the solution recommended by me in the *International Journal of Surgery* of February, 1903. I described then a solution, suggested by Prof. William Kelly Simpson of the College of Physicians and Surgeons of this city, of cocaine, 4 per cent., and adrenalin, 1 to 1000, equal parts, used as a spray, and where this could not be applied, I used it in a hypodermic injection between the tonsil and its pillars.

A most satisfactory and ideal anesthesia has been secured since February, 1905, by my associate, Dr. Arthur P. Coll, and myself. We have been able to apply the above-mentioned adrenalin and cocaine so successfully that any submucous resection of the septum can be commenced within three minutes and carried on as long as may be required without pain or hemorrhage and without other help.

The mixture consists of about 20 to 25 grs. cocaine crystals placed in a shallow dish and dropping sufficient adrenalin chloride solution, 1 to 1000, to dissolve the crystals.

The method of applying this solution is as follows: By wetting cotton on the applicator so that there will be no excess of solution, thereby avoiding paralyzing the constrictors of the pharynx, swab over the entire field of operation with applicator. With this solution we have been able to operate for three-quarters of an hour without the slightest discomfort to the patient.

In the last forty cases of submucous resection of the septum, this mixture was used with greatest comfort to my patients, being absolutely free from pain and with minimum of hemorrhage; reducing the former cocaine toxic symptoms, the bane of the nasal surgeon's operations, without general anesthesia.

Formerly, I used a solution of 2 per cent. resorcin and 4 per cent. cocaine as a spray so that the nostrils could be, as it were, prepared for internal treatment without hurting or irritating them by instrumentation. The resorcin also had the effect of not only enhancing the anesthetic power of the cocaine, but changed its excessively bitter and nauseous taste, thus relieving to a large degree its psychic effect.

To further remove this last-named phase and to better the patient's self-control, I administered (and do now administer) immediately before the cocaine-resorcin solution a nerve sedative and vasomotor controller, of

℞ Sodii bromidi,
Potassii bromidi,
Ammonii bromidi, āa.....gr. x
Spts. ammon. aromat.....℥i
Aquæ q.s. ad.....℥iii
Sig: At one dose.

By this means only two patients had slight or partial collapse and were carried to the end of the operation by means of bending the head as far down and forward as possible, and then massaging vigorously the nape of the neck.

Formerly, to make the anesthesia complete, three or four strips of sterilized gauze were introduced,

of size and shape to fit the cavity of the nostril when spread out upon its mucous membrane. These strips were moistened with 4 per cent. solution of cacoine to saturation, and inserted (not too deep down the pharynx) with forceps having parallel blades with handles at right angles, and then smoothed over the entire circumference with force and pressure if necessary. In ten to fifteen minutes these pieces of gauze could be removed and a very excellent anesthesia would have been obtained. This is entirely done away with by the aforesaid procedure.

Sometimes it is very necessary to prolong these operations which usually take, all told, about thirty minutes to an hour, or even longer. This can be perfectly accomplished even without hemorrhage by dipping a probe, wound securely about with small pieces of cotton, into cocaine crystals as mentioned above, and applying it to the membrane when secretion is beginning to return or oozing is occurring. By this means I have taken out without damage, the entire bony and cartilaginous septum of a football coach who had been kicked on the nose, causing a hideous deformity with comminution of the septum, within one-quarter of an inch of its entire periphery, and have lost but very little of the mucous membrane, and have restored the nose, internally and externally, to a perfect cosmetic condition.

22 West Thirty-first Street.

THE TREATMENT OF LA GRIPPE.

By P. J. McCourt, M.D.,

New York.

In the Medical Record of December 22, 1906, was an excellent and conservative article on the above subject by Dr. Charles E. Nammack, which should command more consideration than such articles generally receive. I have delayed this paper in the hope that others would offer more encouragement, or suggest a better method in the treatment of that persistent affliction, but none has been presented—at least not in the journal in which we expect to find most help.

Dr. Nammack's opening sentence, if it were definitive, would be a sad confession of our weakness, and one that should make us blush: "There is neither a prophylactic nor a specific for influenza." In this one particular I am happy to take issue with the gentleman; we possess both.

Epidemic influenza invaded the country in a pestilential wave from the overflowed banks of the filthy Neva and other open sewers in Russia, and lesser pest spots of our own perpetuate the cause and its malign results. Under existing conditions the miasm will abide with us as a constant foe, and it is our duty to devise means that will subdue or conquer it. And that duty we shall perform, as we have so many others of equal beneficence. Thus far its medical treatment has not received adequate or intelligent study, and in this respect it is not isolated. We have culpably neglected our materia medica for the knife and the microscope, although the latter has enabled us to cure practically nothing.

Arsenic—not in combination, as in Fowler's solution, etc., but simple, pure arsenic—in alcoholic solution, 1.8000, five minim doses morning and evening, has afforded immunity to a large number of my patients who had previously suffered from repeated attacks of influenza. Not a few of those patients soon became more sensitive to the action of the prophylactic than they had been to the disease, and had to suspend dosage at frequent intervals. The known failures were under 6 per cent.

Gelsemium, tincture of the fresh root, three to five minims in six ounces of water, drachm doses every one to three hours, is practically a specific for almost every step, stage, and variety of la grippe, when free from serious early complications. In the control of influenza this form of the drug has rarely failed me during the past twelve years, and recoveries have been rapid and complete, usually free from later complications or sequel. But fluid preparations of the dry root—infusion, tincture, and fluid extract—were found to be entirely valueless. The dose may be much smaller than that just named, but should never exceed this amount', else it may markedly increase the existing prostration; and, further, it must be reduced as the condition of the patient improves. The drug is also admirably indicated for the entire train of mental and nervous phenomena usually common to the disease, and is the only known remedy for high fever without thirst, whatever may be the pathological condition. Since it now appears reasonably certain that all varieties of la grippe originate from a common infective element, we may infer that the same remedy should prove curative in all; and this inference is justified in practice. Hence it would be but a waste of valuable time to treat its erratic symptomatology as made up of separate entities. Approximate specifics of equal efficacy for other diseases are numerous, but they will not be found among the juices of withered plants, alkaloids, or crude, unknown mixtures.

A single minim of a correctly made fresh-plant tincture is endowed with more, and better, medicinal activity than are ten minims of our official dry-plant fluid preparations, whether "standardized" or not. In the treatment of disease I am a firm believer in the competence of rational medicine rationally administered. But to me there is nothing rational in the exhibition of dead or withered plant-juices, or their alkaloids; and the latter never represent the true medicinal properties of the plant, whether the plant be living or dead. I also believe that in the process of drying, medical plants, aside from losing most of their vital properties, undergo chemical and destructive changes which render them unfit for medical use. This belief is strengthened by the recent investigations of Dr. Cloetta, who could find no cumulative action from the fresh leaves of digitalis, and that vicious property he attributes to changes in the dry leaves.

Attentive study and exact comparative tests in single cases and upon the same patient have fully convinced me, as such crucial tests must convince others, that the simple drug in fresh-plant tincture—or two simple drugs given alternately when both are called for—is more effective in therapeutics than any compound prescription can possibly be. Even when the latter seems to relieve—for it never cures any morbid process—its clinical effects afford no data for future guidance in similar conditions. Warburg's tincture may be taken as an extreme type of the compound prescription. On rare occasions it has shown some efficacy; but that efficacy is limited by the fact that, like all medical mixtures, we can never obtain it twice exactly alike. This irregularity is not always the fault of the pharmacist. The error is often due to the carelessness of our manufacturers, who seldom make a drug twice the same, chiefly owing to a neglect of the "law of proportion." Again, the chemical reaction of several constituent drugs upon each other is still the unknown quantity, and their united

action upon the patient is equally uncertain. Under our present crude and unscientific practice patients usually make a slow and imperfect recovery, often from natural causes or even in spite of our medicine, and we are prone to give undue credit to whatever drugs we happen to be using at the time. At best, this is merely assumption, unless it be presumption. If, on the other hand, we prescribe one or two separate drugs for a known pathological condition and a given group of pathognomonic symptoms, and the patient makes a rapid and complete recovery, we at once possess a valuable guide for the successful treatment of all similar cases for all future time. This is medical science, not mere conjecture, and should be our chief object of attainment. And that object will ere long be attained in the manner I have suggested, for there is no other.

Had we devoted as much time and intelligent thought to the perfection, study, and application of our materia medica as we have to analyzing pathological shadows and nursing microbes, there would be fewer therapeutic nihilists and medical machinists among us.

233 West Twenty-third Street.

The Histology of the Skin Lesions in Varicella.—E. E. Tyzzer states that the study of lesions excised from eleven cases of varicella in adult Filipinos shows that the initial change consists in the appearance of peculiar eosin-staining inclusions within the nuclei and cytoplasm of epithelial and various other cells. Direct division of nuclei without subsequent division of the cytoplasm is associated with these inclusions. Cells undergoing these changes often become enormous during their degeneration. After these cell changes the typical varicella process consists of a rapid destruction of small areas of the epidermis associated with exudation and vesicle formation. The development of the vesicle is attended by the formation, about the epithelial cells, of numerous fibers. A certain number of lesions are infected by bacteria, as the result of which they become pustular. In such lesions there is more or less destruction of the papillary layer, which accounts for the scars frequently following an attack of varicella. A conclusion has not been reached concerning the nature of specific inclusions in varicella and no important evidence has been found in favor of the hypothesis that they are parasitic organisms. Inoculations of the cornea of the rabbit and the skin of the monkey with the contents of varicella vesicles have in all cases yielded negative results.—*The Philippine Journal of Science.*

Tics in Children and their Educational Treatment.—Charles Herrman calls attention to the frequency of tics and the discomfort which these conditions cause. Many tics have their origin in childhood. As in all the neuroses of childhood there are two important factors in the etiology of this affection: the inherited predisposition, the favorable soil; the environment including the method of training. Often the movement or gesture was originally performed with a purpose. Tics may affect almost all parts of the body; several may be combined. The mental state of these patients is characteristic. Equilibrium is lacking. The will is not under control. There is difficulty in concentrating the attention, shown in impulsiveness, restlessness, impatience, or irritability. As to treatment, any abnormalities near the site of the muscles affected should receive attention. Except tonics, drugs are, in most cases, useless, unnecessary, or contraindicated. The regulation of the diet and mode of life are of great importance. Violent exercise should not be indulged in. The essential treatment, however, is educational. It consists of two parts: immobilization primarily of the parts affected; active exercises primarily of the parts affected. The patient is seated before a mirror and is told to remain perfectly quiet like a statue for a stated time. An occasional word of encouragement or praise is often of advantage. Active exercises of the muscles are then directed by the physician. These exercises should be gone through with three times a day at stated times. Regularity and punctuality are essential. The writer has treated ten cases according to the method which he describes. In six the movements have entirely ceased.—*Archives of Pediatrics.*

A Note on Syphilis and Cancer and on Some Protozoa.—J. J. Clarke discusses some of the protozoa and the spirochetes. The latter had often been confused, he says, with spiral bacteria. Syphilis is a disease in which the life cycle of the parasite is completed within the human host, so that if *Spirochæta pallida* is related to the causation of the disease other and larger forms must be found in the tissues. The author figures the various stages of some of the spirochetes as developed in the intestine of the common gnat, and claims that some of them were described by himself as early as 1894. Since then he has observed similar bodies in the scrapings from tertiary ulcers. He is an advocate of the theory that cancer is caused by protozoa, and is convinced that the common forms of cancer and sarcoma are caused by more or less local infections by protozoa and differ from the infective granulomata only in the more intimate character of the parasitism and the more complicated life-history of the parasites.—*British Medical Journal.*

Bilharziosis.—Roux declares that the portal vein, the veins of the pelvis and those of the bladder and of the rectum are the ones in which the bilharzia is most frequently found. It is remarkable that the portal vein contains only young parasites whose sexual activity has not yet begun. This infection is rarely seen in those of the upper classes. The blood of these patients has a tendency, according to Goebel, to coagulate rapidly after it is drawn from the blood-vessels. This phenomenon depends upon secretion of the parasite as yet unknown. In regard to treatment prophylaxis is most important. The writer emphasizes the necessity of instructing the inhabitants of Egypt concerning this disease. They should be told of the danger of drinking impure water and of bathing in it. They should also be taught the rôle which the urine and feces of persons suffering from this disease plays in its propagation. Such instruction would be of inestimable value to the inhabitants of this country.—*Le Caducée.*

The "Home Sanatorium" Treatment of Consumption.—Joseph H. Pratt gives an interesting report of the work which he has been doing in relation to tuberculous patients. The "class" of patients is sometimes spoken of as a "home sanatorium." It bears about the same relation to a sanatorium that a correspondence course does to a college course. A nurse who devotes her time to visiting the members of a class is called a "friendly visitor." The writer's patients have all been poor, some of them not very intelligent. Before any individual is admitted to the class he must promise to give up all work, live the outdoor life, and obey all the rules of the class. The clinical history of the patient is taken and a complete physical examination made. Once a month the lungs and sputum are reexamined. The nurse looks for suitable tenements for the members. The prescribed diet consists chiefly of milk, bread, fruit, butter, and oil. Cotton-seed oil is a satisfactory substitute for olive oil. No exercise is allowed for the first few weeks. When the temperature becomes normal for the entire day the exact amount of exercise is prescribed. Of the nine patients who have been members of the class for three months or more all show a gain in weight. In five of the nine cases the disease has been arrested. The writer appends the histories of a number of cases.—*Bulletin of the Johns Hopkins Hospital.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE INCOME OF THE PRACTISING PHYSICIAN.

THE fact has been evident for some time in Great Britain that the earnings of the medical practitioner have been exhibiting a progressive decrease. This diminution of income has not unnaturally aroused certain members of the medical profession, who both in medical and in lay journals have somewhat clamorously advertised this unfortunate state of affairs. Some two months ago one of the leading newspapers of London devoted a considerable amount of space in its correspondence columns to a discussion of the situation, and medical practitioners from all parts of the country entered with apparent zest into the task of bewailing their lot and of considering the reasons for the evil complained of. It was agreed on all hands that hospital abuse was an important factor in the lessening of the doctor's gains, and that there was no prospect of matters becoming better in this respect. All large hospitals in Great Britain are free and many sick persons avail themselves of the benefits of such institutions who can well afford to pay a medical man. Another fruitful cause of diminished income is the multiplication of medical clubs in Great Britain: the competition among physicians is so acute that clubs are now taken at an absurdly low rate, four shillings (one dollar) per capita for men, women, and children per year being an ordinary fee. Prescribing by druggists is another means whereby, it is stated, physicians in England are frequently mulcted of their just dues.

In America hospital and dispensary abuse is as flagrant and as prevalent, perhaps, as in Great Britain, although, owing to the different conditions existing, it is not exhibited in the same way. Club practice has not as yet obtained the hold in America that it has gained in Great Britain, but signs are plentiful that the methods are taking root and becoming more and more popular. Of course prescribing by druggists has always been largely in vogue in this country and a source of very considerable loss to the medical practitioner. By some physicians in England it is proposed to put down this custom by the strong hand of the law, but exactly how this is to be brought about it is difficult to understand.

Competition is more severe among American physicians than among British practitioners, but on the other hand medical fees here are on the whole far higher. While allowing that members of the medical profession are as a rule underpaid, it may be pointed out that two potent reasons for the diminution of income are usually overlooked. These are the decrease in morbidity and the greatly improved methods of treatment of the present day. Hygiene and sanitation have abolished many of the great epidemics of disease which in times past were wont to bring much grist to the doctor's mill, while the introduction of new and more scientific modes of treatment have to a great extent curtailed the duration of the disease and have in a corresponding degree reduced the doctor's income.

CORNEAL GRAFTING.

AMONG the most ingenious applications of the methods of plastic surgery is the substitution of a transparent membrane for portions of the corneal tissue which are impervious to light. The operation was first suggested in the early part of the last century, although the act of replacing a clouded human cornea with that from an animal was not carried out. During the succeeding years numerous efforts were made to overcome the many difficulties which surrounded the operation, but without success, so that the procedure was finally abandoned, only to be revived again during more recent years. It seems that the first successful operation was performed by Sellerbeck in 1878, who replaced the clouded cornea of a man who had become blind as the result of a gonorrheal ophthalmia with that from a small child in which enucleation had been rendered necessary by a glioma of the retina. Healing took place without any reaction and the patient could read print of moderate size in about two weeks, but unfortunately in another week cloudiness appeared at the edges of the graft and soon thereafter vision was again completely lost. Subsequent attempts made by different operators were likewise unsuccessful and the idea of providing an optically perfect cornea by this means was practically abandoned. It was believed, however, that the procedure might prove of service in another direction, namely to replace ulcerated or incompletely cicatrized areas in the cornea with a more substantial tissue basis, an idea far removed from the original purposes of the operation. The application of this principle has been made the subject of a communication by Zirm in the *Wiener klinische Wochenschrift*, No. 3, 1907, who reports a permanently successful operative result in a man who had become almost totally blind as the result of a corneal opacity due to lime burns. The material for the grafts was taken from the eye of a boy, which had been removed on account of extensive trauma. Although one of the flaps failed to adhere, the other became firmly united and the man's vision was sufficiently restored to permit his going back to work at his former occupation.

An inquiry into the reasons for the failures in previous attempts seems to show that aside from imperfections in the technique an insufficient degree of attention to means for maintaining the nutriment of the flap was the cause for a majority of the failures. It is essential that the material for the graft be obtained from the human subject, and the cornea must be well nourished and not the subject of any degenerative processes. Zirm claims that experi-

ence has shown that animal grafts cannot be employed. Deep narcosis, strict asepsis, and the avoidance of all antiseptics are among the most essential details connected with the operation. The flap must not be handled with instruments, but with small pads of moist gauze, and kept warm with steam until ready to be applied. It is fixed in place with two crossed sutures, which are inserted through the conjunctiva. The cases moreover must be carefully selected, and it would appear that the centrally located opacities furnish the best opportunities for successful grafting, particularly if the surrounding areas are still well nourished. Plastic operations on the eye, especially when they aid in the restoration of sight, must be accounted among the most useful among this class of surgical procedures, and although one swallow does not make a summer, the success attained by Zirm in this one case should lead to renewed interest in what has almost been abandoned as a useless operative interference.

ALCOHOL IN THE NUTRITION OF DIABETICS.

Among the questions of paramount interest in the study of diabetes is that relating to the source of acetone, and that this is not merely a theoretical one is shown by the increasing attention which is accorded to the idea that the acetone bodies exert an important bearing on the production of one of the most feared complications of diabetes, namely diabetic coma. The ideal method of treatment includes not only the means whereby the sugar is made to disappear from the urine, but also that whereby the ingestion of albuminoids is reduced and that of the fats increased. In severe cases of diabetes albumin will often induce more active sugar elimination than certain carbohydrates, and it is quite generally believed at the present day to be the most probable source of the acetone bodies. Fat on the contrary does not seem to play any considerable part in the production of these substances, but it constitutes a valuable and harmless source of nutriment, by the aid of which the carbohydrates in the diet may be readily displaced. This assumption has met with some opposition, however, and it is claimed that the fats may also serve as a source for the production of acetone.

Some recent investigations by Benedict and Torok, reported in the *Zeitschrift für klinische Medizin*, Vol. 60, Nos. 3 and 4, seemed to show that in diabetics this is a fact, although control experiments in nondiabetic patients were by no means conclusive. Alcohol was then employed as a substitute for the fat and the result was most favorable. The writers found that alcohol will bring about a marked diminution in the amount of acetone and also reduce the quantity of sugar, while at the same time it supports the nutrition. The administration of alcohol is particularly indicated in the severe cases in which it is the aim to render the patient as free from glycosuria as possible. For with an exclusive meat diet the danger of acetonuria and coma is always present, and it is therefore most desirable to replace some of the fat with alcohol. The amount of alcohol depends on the severity of the individual case; from one-half to one liter of light wine may be administered with impunity daily for prolonged periods. The exciting or depressing properties of alcohol seem to be less marked in diabetics than in others, which reminds one of the tolerance displayed by diabetics to opium. In order to avoid abuse of the alcohol it is well to regard the latter as a medicine and to administer it as such rather than as an article of diet.

There are of course self-evident contraindications against the employment of alcohol in diabetes. Among these are albuminuria, especially when this is increased during the administration, neuritis, arteriosclerosis, as well as diabetes in children, where dietetic precautions are also often without effect.

The Effect of Gastroenterostomy on Gastric Digestion.

Although it is something over twenty-five years since Wolfler popularized the operation of gastroenterostomy, it must be confessed that the beneficent effects of the operation have not been altogether satisfactorily explained. It is usually assumed that the procedure owes its happy results mainly to the improvement in the drainage of the organ and in its motility that is brought about, and although changes in its secretory activities have also been predicated, these do not appear to have been studied with very fruitful result. The problem has been made the subject of extended researches by Katzenstein, who publishes some very interesting conclusions in the *Deutsche medizinische Wochenschrift* of January 17 and 24, 1907. By means of operations on dogs, and digestion experiments, he was able to determine that after both anterior and posterior gastroenterostomy bile and pancreatic juice enter the stomach. During the first period after the operation this flow is very profuse, but later it occurs more or less periodically, and it has, as a consequence, the reduction of the gastric acidity, both through its direct chemical effects and through a reflex inhibition of the production of hydrochloric acid. The digestive activity of the pepsin is also diminished, whereas tryptic digestion is not impaired to any noteworthy extent. The effect of the gastroenterostomy is, therefore, to reduce very largely the value of the stomach as a digestive organ through inhibition of both pepsin and hydrochloric acid formation. The result of this is to bring about the conditions most favorable for the cure of peptic ulcer and the prevention of recurrences of the condition, and the surgeon, in resorting to the operation, is making use of a directly remedial measure. These advantages may be still further enhanced by a suitable diet, which should be deficient in proteid in order not to encourage hydrochloric acid and pepsin formation, and should consist largely of fats and carbohydrates, which favor the secretion of bile and pancreatic juice. The meals also should be small and frequently repeated, and the administration of large quantities of fluids, particularly water, is also advisable. In spite of these very strong arguments in favor of gastroenterostomy in the treatment of ulcer of the stomach, Katzenstein believes that the malady is essentially a medical one, and that patients should be referred to the surgeon only when the internist has exhausted the resources at his command. In dealing with cases of gastric cancer the conditions are somewhat different, and here, particularly if there is obstruction, the improvement achieved is largely the result of the drainage of

the stomach that is brought about. The author suggests, however, that the remarkable instances of improvement, or at least arrest of the disease, that sometimes are observed after gastroenterostomy may be the result of the local application of trypsin to the surface of the new growth that is effected by the entrance of the duodenal secretions into the stomach.

The Effect on the Circulation of Pressure on Painful Points.

The fact that on making pressure over supposably painful points more or less pronounced changes in the pulse rate and in blood pressure are produced in dealing with actual disease conditions, whereas this is not the case if there be no real basis for the complaints of the patient, has been found a useful measure for the detection of malingerers. This phenomenon, which is sometimes known as the Mannkopff or Mannkopff-Rumpf symptom, is made the subject of an explanation by Rumpf in the *Münchener medizinische Wochenschrift,* January 22, 1907. He states that pressure on, or friction of, painful points in certain cases of general neuroses or neuralgias may evoke changes in the domain of the circulatory system which may manifest themselves either as a simple increase in the frequency of the heart, as a preliminary slowing of the pulse of short duration followed by an increase in its rapidity, or as a decrease in the size of the pulse. In some instances cardiac arythmia is observed, and in others cyanosis of the face or abnormal secretion of perspiration is noted. The effect of such stimuli may also be either to raise or to lower the blood pressure. All of these changes subside within a short time after the cessation of the painful stimulus. In order to guard against errors in making this test, certain precautions are necessary, however. The patient must be in a hospital, and must have been lying for some time on the bed or couch on which the examination is to be made. He must also have no idea of the significance of the test, and must have been subjected to several previous examinations in order that the mere unaccustomedness of the manipulations may not give rise to error. The heart's action must be regular and the pulse preferably under one hundred. During the examination the patient must breathe quietly and evenly, and must not hold the breath or make straining efforts. In addition to the supposedly painful areas, corresponding spots on the other side of the body should also be tested, and the effect must be limited to the painful side. It is also desirable to repeat the examination on several different occasions.

Andrew Lang on Influenza.

From being a sceptic, Mr. Andrew Lang, the distinguished English litterateur, has become an ardent convert to the doctrine that there is really such a disease as influenza. He says of himself, in a recent number of the *Illustrated London News*, that he "has been the victim of a malady in the existence of which he was an unbeliever. No man," he said, "however credulous, can believe in everything, and I 'took the Wilkes and Liberty' to suppose and assert that there is no such thing in nature as influenza. My causes of scepticism were the usual causes. I never had suffered from influenza. No house in which I ever found myself was haunted by the alleged malady. I was wrong, and am now in case to appreciate an argument of the Chinese medical profession. These learned men believe in demoniacal possession. When their European confrères say, 'Oh, you mean epilepsy, hysteria, and so on,' the Chinese reply: 'Excuse us, we don't! We know all about hysteria and epilepsy, at least as well as you do; but demoniacal possession is quite another affair, with peculiar and distinctive symptoms.' That is also the case with influenza. It may resemble a common cold, but its distinctive symptoms, as in the parallel affair of diabolical possession, are unmistakable. Indeed, I rather think that diabolical possession and genuine influenza are much the same thing. Influenza at once attacks the human mind, and produces the queerest phenomena. Certainly under the dominion of this fiendish malady I exercised mental faculties of a kind which I do not possess when I am in ordinary health. A critic, the late Mr. Henley, I think, once asked, 'What could not Mr. Lang do if he only had genius?' Nobody was able to reply, but when I had influenza I *had* genius. Unluckily, there was no money in it, and I would rather be devoid of the genius than have it with influenza thrown in; inspiration is all very well, but one may purchase it at too high a price."

Cardiac Suture.

Some ten years have elapsed since the first practical demonstration of suture of a wound of the heart was made, one of the earliest cases reported having been that of Dr. Daniel Williams in the Medical Record of March 27, 1897. Although at first unsuccessful in saving life, further experience with the procedure has shown its feasibility, and a considerable number of reports are at hand to point to its value. Thus, among a series of 128 cases which have been collected by Lenormant (*Gazette des Hôpitaux,* 1906, No. 104), eighty-one patients died and forty-seven were cured, a result which must be favorably regarded when we consider the extreme danger which attends this condition. The majority of the reports deal with cases in which a cutting or penetrating wound of the organ occurred and only a relatively small number are concerned with the suture of gunshot injuries. Another interesting fact is that of all the cases in which the exact localization of the trauma was determined only six instances of injury to the auricle are recorded. The remainder relate to injuries of the ventricle, in which the results of suture of the left ventricle are apparently twice as good as in those of the right. Complicating injuries, such as those of the septum, the coronary arteries, or the valves, are invariably fatal; those of the neighboring thoracic and abdominal organs also render the prognosis particularly grave, although two favorable cases have been published in which there was a simultaneous injury of the heart and the lung. If death occurs during the first few hours after the injury it is due to shock, acute anemia, or intracardial trauma, but when it takes place after the second day it is caused by infection of the pleura, the pericardium, or the lung. It is found advisable not to drain any serous cavity which may be opened during the operation of suture, as the dangers of infection are greatly increased by this procedure. Needless to say the most rigorous aseptic measures are necessary to insure a successful outcome, and if these have been adhered to, both pleura and pericardium may be closed without fear of subsequent trouble. In opening the pleural cavity care should be taken not to make the incision any larger than absolutely necessary, for the pneumothorax which may follow is an element of considerable danger.

The Effect of Cooking by Gas.

An editorial in the *Lancet* of February 2 discusses this question from both the chemical and clinical points of view. It is reassuring to learn that the differences between this method and the more familiar ones as to sources of fuel cannot be looked upon as a serious matter from the point of dietetics. Cooking by gas brings up the question as to what effect if any the products of this combustion are likely to have upon the meat. The chief of these products are carbon monoxide, acetylene, and sulphurous acid. The two former form molecular combinations with the coloring matter of the blood, but at the high temperature of the cooking process it is unlikely that such a combination would take place. Moreover, a full air supply would prevent either from being permanently absorbed. Meat during cooking is emissive rather than absorptive. Any difference in cooking must be referable to the manner in which the heat is applied. Open roasting is undoubtedly superior to close roasting. The article in question expresses the view that the cooking of meat by gas is less satisfactory than cooking by the open roast method, because in the former case the joint is cooked partly by ascending heat currents and partly by steam. According to this view, cooking by gas may be regarded as a hybrid process, that is to say, part boiling or steaming and part roasting. The constant stream of steam over the surface of a joint of meat is calculated to extract some of its flavor and to exert a toughening effect on the tissues of the meat.

The Treatment of Auditory Sclerosis.

In sclerosis of the auditory apparatus it is believed that an increase in the blood pressure is the primary cause of the attendant symptoms—vertigo, tinnitus, and deafness. For this reason it has been suggested by Malherbe in the *Bulletin Médical*, No. 81, 1906, that Trunecek's serum be employed in the treatment of the condition. This serum, which has been more or less extensively used abroad in the treatment of arterial sclerosis, has been modified by Malherbe so as to include nitrate of pilocarpine. His method is as follows: Three cubic centimeters of the serum is injected into the gluteal region and this is repeated at intervals of two or three days until twelve doses have been given. In two weeks the treatment is repeated. A strong and a weak serum are used, the former containing twice as much pilocarpine as the latter. The injections are followed by a well-marked effect on the pressure in the peripheral vessels through the agency of the vasomotor nerves and this effect of the original serum is heightened by the pilocarpine in the modification. The treatment is particularly serviceable, according to the writer, in the early cases of the disease, in which the vessels still possess a certain degree of elasticity, and in these instances the tinnitus and the vertigo are greatly helped and the deafness may also be improved. In the forty cases reported by the writer each patient received from twelve to thirty-six injections; in twenty-one the result was excellent, in sixteen it was good, and in the others it may be called doubtful. But even in the latter class of cases where, on account of a sclerosis in the labyrinth, total deafness was present, some of the patients stated that after treatment they could faintly perceive certain sounds, the perception of which had totally disappeared. These experiences would apparently indicate that the Trunecek serum injections might form a valuable adjunct to the local treatment.

News of the Week.

State Health Report.—In his annual report to the Legislature, State Health Commissioner Eugene H. Porter submits that in order to safeguard the water supplies of the State more efficiently the Commissioner should have the authority to order a town to remove its sewage from the State waters if it seems desirable. He also suggests that a commission might be appointed to aid the Health Department of the city of New York in controlling the pollution of New York harbor. The inspection of packing houses and slaughter houses, as well as the examination of their products, showed serious deviations from the proper standards, and it is proposed to continue this work as actively as the appropriations permit. Twenty-one cities show a lower death rate than in 1906, and seventeen a higher death rate. Rome, Ogdensburg, and Troy have the highest death rate, and Johnstown and Tonawanda the lowest. The average city death rate was 15.9, and birth rate 19.7 per 1,000 population. Nine cities—Albany, Cohoes, Hudson, Middletown, Newburgh, Rensselaer, Troy, Watertown, and Watervliet—reported more deaths than births. Albany and Troy show the smallest birth rate, and Dunkirk and New York the largest. Last year there were 183,012 births, 140,773 deaths, and 87,870 marriages, while 9,401 still births were reported. Last year the second highest monthly mortality occurred in August, and was due to 2,339 deaths of children under two years of age from diarrhea and enteritis. More deaths occurred from this cause in this month than from any other disease in any other month, and the Commissioner makes this a ground for recommending that a more efficient system of milk inspection be instituted. The subjects of car sanitation and of the examination of the eyes of school children are also discussed.

Hudson River Ice.—The Merchants' Association of New York, through Mr. Edward Hatch, Jr., chairman of the association's committee on pollution, has sent to Governor Hughes a letter alleging that much of the ice now being cut in the Hudson river is unfit for domestic consumption, and is dangerous to health. The statement is made that it is estimated that 2,500,000 tons of ice are harvested annually on the Hudson for consumption in or about Greater New York. The population of the drainage area of the Hudson Valley is not far below 700,000, and the sewage from this number of persons is discharged into the Hudson river or the tributaries thereof. In addition the farm and barnyard drainage and surface wastes find their way, eventually, into the river. Chemists sent out by the association to examine samples taken from the ice that is being cut and stored allege that most of the ice, at either the top or the bottom of the cake, showed evidence of contamination with intestinal germs, as the result of both chemical and bacteriological examinations. Especially bad is said to be the ice cut on the fields between Albany and Troy, and for five miles south of Albany. Near Albany and elsewhere on the river ice is cut close to the large sewer outlets. Dr. E. H. Porter, State Superintendent of Public Health, in his annual report to the Legislature, complained that he did not have enough money appropriated for his department to enable him to put a guard on the harvesting of ice, and questioned whether he

had the authority to prohibit the cutting of ice from lakes and rivers where it was supposed that pollution existed.

Department of School Hygiene.—The establishment of a department with this title, and intended for the greater protection of the health of school children, is being considered by members of the Board of Education. The new department would be independent of the work of the now existing Department of Physical Training, and would concern itself with such matters as the print of the school books used, the nature of the desks, benches, and other school furniture, etc.

The Milk Question in New York.—The Board of Aldermen has taken up the milk question, and an ordinance has been proposed providing that all milk sold at retail in this city shall be either sterilized or pasteurized, unless the milk has been bottled in dairies under the supervisioin of inspectors of the Health Department, and each bottle bears the Health Department's seal placed on it by one of the Department's inspectors. Several public hearings are to be held before the ordinance is to be reported to the Board.

The Milk Question in Illinois.—In the course of an investigation carried on by the State pure food authorities in Illinois it was found that only about 30 to 35 per cent. of the milk sold in the various cities visited was in the condition it should, and easily could, have been in if the ordinary sanitary regulations had been observed in collecting and handling it. In the course of several weeks' special work 1,400 samples were analyzed, and, ignoring entirely the question of the unclean product sold and unclean vessels, there were brought seventy-six suits for cream or milk adulterated with formaldehyde, seventeen for skim milk sold as standard milk, five for milk both skimmed and watered and sold as standard, twelve for milk below standard and sold as standard, and thirty for watered milk, of which seven were against farmers delivering milk to creameries or shipping stations. In most cases the defendants pleaded guilty; the others are fighting out the issues in court.

Emergency Health Conference in Chicago.—Criticism of the Chicago City Council and its position relative to questions of public health, particularly its opposition during the last five years to the erection of an isolation hospital for the treatment of contagious diseases, marked several of the speeches at an emergency conference, held in Chicago on Sunday, February 10. Several resolutions were introduced at this meeting, the first of which approved the employment of a large corps of physicians for regular school inspection; a second resolution provided for the appointment of a committee of eight to urge an improved system of milk inspection, while the third resolution asked for the appointment of a committee to take further steps for securing a change in the hospital ordinances. The committees are to be composed of two representatives of each of the organizations represented in the meeting, namely, the State Board of Health, City Health Department, Chicago Medical Society, and Illinois Federation of Women's Clubs.

Salaried Ambulance Surgeons in Chicago.—As the result of the transference of the Chicago police ambulance to the jurisdiction of the Health Department, the Chicago City Council has voted to appoint sixteen ambulance surgeons, at a salary of $100 per month.

Infectious Diseases in Schools and Colleges.—In consequence of an epidemic of grip which has laid up half of its pupils and teachers, the seminary of St. John the Baptist in Brooklyn has been temporarily closed, and the seminarians sent to their homes. In Ithaca, N. Y., nearly a hundred cases of diphtheria and scarlet fever have been reported in the last few weeks, and though most of these have been among the townspeople, many of the Cornell students have left Ithaca to avoid infection. Amherst College has been closed until March 1, owing to the outbreak of scarlet fever among the students. About thirty students are ill with the same disease in Wheaton Seminary at Norton, Mass., which has been closed for an indefinite period. Three cases of scarlet fever have been discovered among the students at Harvard. Eighteen or more scarlet fever cases have occurred in Williams College, and it is thought that the authorities will decide to close the college. In this instance the source of the infection is thought to have been found in the milk supplied by a dealer in whose home an unreported case of the disease was discovered.

The Steamboat Whistling Nuisance.—The Board of Supervising Inspectors in Washington is preparing regulations under which will be inforced the law passed last month prohibiting useless and unnecessary whistling by steam craft. At a recent meeting of the board the possibility of requiring vessels to be equipped with whistles giving forth more melodious sounds than those now in use was discussed, and it was decided that investigations relative to this question and to the carrying power of the sounds emitted, as well as the intensity of the light signals used, should be instituted.

Tuberculosis in the Navy.—According to the statistics reported tuberculosis in the Navy and Marine Corps has increased from a ratio per thousand of 3.2 in 1895 to 6.1 in 1905. As one factor in the effort that is being made to combat the disease an abandoned Army post in Colorado has been turned over to the Navy Department, and is being converted into a tuberculosis sanatorium. This is New Fort Lyon, situated at an altitude of 3,800 feet, on the north bank of the Arkansas River, five miles from the town of West Las Animas. The climatic conditions are said to be excellent, and sufficient buildings are at the disposal of those in charge to provide adequate accommodations for the prospective patients.

No Dentists for the Naval Service.—The appropriation of $50,000 for the purpose of providing thirty dental surgeons for the Navy has not passed the House, in spite of the earnest efforts of those interested in the welfare of the service.

Meningitis in Salt Lake City.—During the past six weeks cerebrospinal meningitis has been epidemic in Salt Lake City, and over thirty deaths have occurred from this cause.

Cerebrospinal Meningitis in Belfast.—Because of the alarming mortality from cerebrospinal meningitis at Belfast, and the generally high death rate, owing to unsanitary conditions in many parts of that city, the Government has adopted the unusual course of appointing a naval commission to inquire into the situation.

International Congress on Infant Hygiene.—The second international congress of "Gouttes de Lait," an organization devoted to the protection of child life, will be held in Brussels Sep-

tember 12 to 16, 1907. The first congress was held in Paris two years ago, and a systematic movement having for its object the prevention of infantile mortality was organized. The work falls under three headings, viz. to give advice to mothers, to encourage breast feeding, and to distribute milk to those infants for whom breast feeding is either impossible or insufficient. The president is Dr. A. Devaux of Brussels, and the general secretary is Dr. Eugène Lust of Brussels. The subscription for members is twenty francs, and for associates ten francs. The treasurer is M. Sterckx, 3 Rue Beyaert, Brussels.

The Suit Against Dr. Doyen.—The Public Prosecutor in the First Tribunal of the Seine has presented his conclusions in the suit brought by Mr. Geo. Crocker of San Francisco to recover from Dr. Doyen $20,000 which the surgeon received in 1904 as the result of a contract for treating Mrs. Crocker for cancer. The opinion uttered was in Dr. Doyen's favor, and it was stated that Mr. Crocker's contention that at least a portion of the fee should be refunded was not well founded, because Dr. Doyen had ceased his visits only at Mr. Crocker's request, and not of his own volition. A decision is to be rendered shortly.

Aid for the Famine Sufferers in China.—Nearly $60,000 has been collected by the Red Cross organization for the aid of the victims of the famine in China. It is reported that smallpox has broken out in the camps of the refugees, and that the relief measures are wholly inadequate.

"The Journal of Inebriety" begins the fourth decade of its useful existence with a new department devoted to the physiological and psychological therapeutics of inebriety and drug addiction. To this end arrangements have been completed by which the *Archives of Physiological Therapy* has been consolidated with, and will hereafter be published as a part of *The Journal of Inebriety*. Henceforth, in addition to the various phases of this subject which the journal has presented, the therapeutic effects of hot air, radiant light baths, electricity, massage, psychotherapeutic measures, and other physiological means will occupy a prominent space.

Dr. Byron Robinson's Jubilee.—The *American Medical Compend* of Toledo devotes its issue for January to a celebration of the twenty-fifth anniversary of Dr. Byron Robinson's entrance into the profession of medicine. This well-known anatomist was graduated from Rush Medical School, Chicago, in 1882, and practised for a while in Grand Rapids, Wisconsin. After studying in Europe for several years, he was called to the chair of anatomy in the Toledo Medical College, which he occupied for two years. In 1891 he removed to Chicago, where he now resides, being professor of gynecology and abdominal surgery in the Illinois Medical College, attending gynecologist to the Woman's Hospital, and consulting surgeon to the Mary Thompson Hospital. Dr. Robinson has earned an enviable reputation as an anatomist, an original investigator, and a writer, and the story of his work is told in the *Compend* by more than a score of his pupils and admirers.

Dr. Le Roy Broun of this city, at a recent meeting of the governors of the Woman's Hospital in the State of New York, was elected surgeon to the hospital.

Dr. M. D. Lederman of this city has been appointed Attending Aurist and Laryngologist to the Lebanon Hospital.

The Ninth Harvey Society Lecture will be delivered by Prof. W. T. Councilman, Professor of Pathology, Harvard University, at the New York Academy of Medicine, on Saturday evening, February 23, at 8:30 P.M. Subject: "The Relation of Certain Leucocytes to Infectious Diseases."

American Anti-Tuberculosis League.—The next meeting of this organization is to be held at Atlantic City, N. J., June 1 to 4, 1907, under the presidency of Dr. George Brown of Atlanta, Ga. The chairman of the Reception and Entertainment Committee is Dr. Edward Guion, Atlantic City, N. J.

Saginaw (Mich.) General Hospital.—In connection with this hospital a nurses' home has been opened, with accommodations for thirty-six persons. The building, together with the furnishings, is the gift of Mr. and Mrs. Charles H. Davis of Saginaw, and is to be known as the Davis Nurses' Home. Miss Annie M. Coleman is superintendent of the hospital.

Brooklyn Home for Consumptives.—By the will of the late Mrs. Mary H. Pratt this institution is to receive the sum of $10,000.

Bequests to Hospitals.—St. Luke's Hospital and the Presbyterian Hospital of this city each are to receive $7,500 for the endowment of beds by the will of the late Mrs. Mary J. Johnson.

Traill County (N. D.) Medical Society.—At the recent annual meeting of this organization officers were elected as follows: *President*, Dr. McIntyre; *Vice-President*, Dr. Haagenson; *Secretary*, Dr. Anderson; *Treasurer*, Dr. Schanche.

Fifth District (S. D.) Medical Society.—At the meeting of this organization recently held in Sioux Falls, the following officers were elected: *President*, Dr. Hauge of Howard; *Vice-President*, Dr. Kaps of Winfred; *Secretary-Treasurer*, Dr. Frudenfeld of Madison; *Censor* for three years, Dr. Duff of Madison.

Hillsboro (N. H.) County Medical Society.—Officers as follows were elected at the annual meeting of this society, held at Nashua on February 7: *President*, Dr. George D. Lane of Manchester; *Vice-President*, Dr. A. S. Wallace of Nashua; *Secretary and Treasurer*, Dr. Ella Blaylock Atherton of Nashua.

Roosevelt Hospital Tax Decision.—The Supreme Court has decided in favor of Roosevelt Hospital against the city in the suit brought in its behalf to be relieved from $150,000 in taxes on property which it owns, but does not use for hospital purposes. The hospital has contended that its property was exempt from taxation under its charter granted in 1804.

In Memory of Pirogoff.—The twenty-fifth anniversary of the death of the Russian surgeon Pirogoff is to be commemorated by the founding of an invalid home for incapacitated physicians and a medical library.

Obituary Notes.—Dr. Adolph Kuhn of this city died on February 14 as the result of an attack of grip. He was born in Brooklyn in 1850 and was graduated from the Medical School of the University of New York in 1877. He served as interne in the Charity Hospital, and completed his medical education abroad. He made a specialty of diseases of the respiratory and circulatory systems, and held several hospital and dispensary positions. At the time of his death he was president of the West Side Taxpayers' Association.

Dr. William E. Kennedy of Muskegon, Mich., died on February 7, at the age of thirty-five years. After receiving a legal education, and being admitted

to the bar, he studied medicine, and was graduated from the medical department of the University of Michigan in the class of 1904. He had practised in Montague and Ravenna.

Dr. JOHN F. ENGLISH of Providence, R. I., died on February 9 of pneumonia, at the age of thirty-one years. He received his medical degree from the University of Vermont, and had practised for a time in his native city of Stafford City, Conn. He had been a resident of Providence for about a year and a half.

Dr. OMAR ROUTHIER of Lawrence, Mass., died on February 9 of pneumonia, at the age of forty-seven years. He was born in Cape Rouge near Quebec, and was graduated from the Montreal branch of the Laval University about fourteen years ago. He had practised in Lawrence since 1894.

Dr. HENRY A. GAFFNEY of Salem, Mass., died of heart disease on February 9. Dr. Gaffney was born in Charlottetown, P.E.I., in 1847, and, after graduating from St. Dunstan's College, received his medical degree from the Harvard Medical School in the class of 1870. Two years later he began practice in Salem, where he continued to reside until the time of his death. He was a fellow of the Royal College of Physicians of London, and had occupied numerous official positions.

Dr. CHARLES K. YANCEY, past assistant surgeon, U.S.N., died on February 10 in the Government Asylum for the Insane in Washington, D. C., at the age of fifty-nine years. He was born in Culpepper County, Va., and entered the naval service shortly after the close of the Civil War. His mind became deranged as the result of a period of duty in the tropics, and he had been an inmate of the Government Asylum for twenty-nine years.

Dr. WILLIAM H. DONNELLY of Worcester, Mass., died on February 8 as the result of a brain tumor, at the age of twenty-seven years. He was graduated from the Baltimore Medical College in 1905, and at the time of his death was house physician of the Providence Hospital in Holyoke.

Dr. JOSEPH MITCHELL of Lynn, Mass., died of apoplexy on February 7, at the age of fifty years. He was born in Oldtown, Me., and was a full-blooded Indian of the Penobscot tribe. He received his degree from the University of Ann Arbor, and was said to have been at one time a very successful practitioner.

Dr. L. S. CAMPBELL of Los Angeles, Cal., died on February 1, at the age of eighty-five years, as the result of a street car accident. He was born at Smyrna, Del., and received his professional degree from the Louisville College of Medicine in 1851. He first practised at Carmel, Ind., but in 1875 removed to Indianapolis. In 1901 he became a resident of Los Angeles.

Dr. JOHN B. STRACHN of Petersburg, Va., died on February 8, at the age of seventy-seven years. Dr. Strachn was a graduate of the Jefferson Medical College of Philadelphia, and had practised in Petersburg for about fifty years. He served through the Civil War as a surgeon in Rhodes's division, Stonewall Jackson's corps.

Dr. H. Z. GILL of Long Beach, Cal., died on February 6, at the age of seventy-six years. He was born in Buck's County, and was a graduate of Jefferson Medical College, Philadelphia.

Dr. JOHN BARKER of Woodbridge, Conn., died on February 16 of pleurisy, at the age of seventy-two years. He was graduated from the Yale Medical School with the class of 1860.

EIGHTH HARVEY SOCIETY LECTURE.

THE eighth regular lecture given this season under the auspices of the Harvey Society was delivered by Prof. Geo. S. Huntington, the well-known anatomist of Columbia University, at the Academy of Medicine, on Saturday, February 9. In introducing the speaker of the evening the presiding officer, Prof. Graham Lusk, spoke of the splendid anatomical school which had been built up by Prof. Huntington, and which was one of the very few schools in which highly important research work was systematically carried on. The subject of the evening's lecture would be "The Genetic Interpretation of Variations in the Genitourinary Tract."

The lecturer began by referring to the aims of the Harvey Society, and then said that the reason for choosing the topic he had was because it represented a field in which there had been real, rapid, and constant advances in recent years. He would endeavor to present the subject according to the following general scheme: (1) He would indicate briefly the more important facts in the development of the genitourinary system as it could be followed in the embryo. (2) Next he would point out the analogues of these phases as they were illustrated in the lower forms. (3) He would give illustrations of various anomalies as they were met with in the human subject.

The simplest type of a genitourinary system would, of course, be a perforation in the colon wall, so that the excretory products could find their way out, and the fertilizing cells have access to the generative cells. In the very earliest period of the life of the embryo there were two abdominal cords called the pronephron. These cords were straight tubes which, in the amphibia, served for both generative and urinary purposes. The speaker then went on to say that the original pronephron was very evanescent in vertebrates, lasting only a few weeks. It soon atrophied. Prof. Huntington next spoke of the development of the genital gland, and of the mesonephros. The latter persisted, so far as kidney function was concerned, in male and female amphibia. In the subsequent development of the mesonephros in male amphibia certain of the mesonephric tubules associated themselves with the sexual gland, converting the mesonephric duct into the vas deferens. In higher organisms certain structures were referable to the original mesonephric tubules, and were of interest as sometimes giving rise to the development of peculiar cysts and tumors.

The development of the duct of Müller was next touched upon. This duct usually developed as a tube parallel to the pronephric duct. It became the functional genital duct in the female type of higher forms. From it were developed the Fallopian tubes and uterus.

The speaker showed by means of diagrams how the early indifferent type could easily be developed into the higher amphibian type. In one case the Wolffian (or mesonephric) tubules connected with the genital gland—male, while in the other case these tubules were atrophied, and the Müllerian duct developed so as to be almost connected to the genital gland—female type. In either case this type could be developed still further, as in the mammalia, merely by the development of the permanent kidney as an outgrowth from the lower part of the mesonephric

duct. In this case, to be sure, the lower or urinary part of the Wolffian tubules atrophied.

The speaker then discussed the migration of the kidney and of the testes. The latter truly migrated; in the case of the former the migration was largely only apparent, due to unequal growth of tissues about the gland.

The room was then darkened and a magnificent series of lantern slides thrown on the screen. These showed preparations, made by Dr. Huntington, of a large number of animals, from the very low to the highest forms. Some of the slides were as follows:

Four pig embryos at different ages, showing in the youngest the enormous size of mesonephros. Lying behind this could be seen the permanent kidney. In the fully developed embryo very little was left of the mesonephros.

Iguana showed the condition brought about by retention of common mesonephroic duct opening into acloaca. It also showed two separate erectile organs, the analogues of the corpus spongiosum, but not fused into one structure.

A preparation of the python showed a similar condition.

In the turtle could be seen the fusion of the two erectile masses into one structure. The sexual duct, however, was merely a gutter along the margin of this, and not a true tube.

A preparation of the Virginia opossum showed the last remnant of the condition present in reptiles. In this animal there was a bilateral slit on the end of the penis.

The series continued through some of the higher mammals, and ended with preparations showing the carnivor types. This type was fairly common in the human subject, *e.g.* bifurcated kidney.

An interesting set of corrosion preparations of kidney anomalies was shown. Among these were double ureters, bifurcated ureters, etc.

Owing to the lateness of the hour the speaker was unable to take up the final part of the lecture, but invited all those interested to examine with him the series of preparations of human anomalies which had been collected for many years.

These were exquisitely mounted preparations, representing variations of all kinds. In some there was a persistence to a greater or less extent of structures originally present and developed beyond normal instead of atrophying. In others there was a failure of certain steps subsequent to the early development—as failure of certain structures to fuse, of certain septa to disappear, etc., etc. These anomalies were readily understood in the light of the foregoing developmental survey.

Tuberculosis of the Cecum.—Pauchet has been able to cure four cases of tuberculosis of the cecum, one by closed exclusion, another by exclusion treated secondarily by section, and two by resection followed by laterolateral anastomosis by the aid of a button. Tuberculosis in this region may show itself during the period of activity (ulcerative or caseous form) or after recovery, when it appears in the form of cicatrical lesions, hypertrophic or pseudoneoplastic conditions, or as a stenosis. The treatment suggested may be that of closed exclusion, which consists in isolating entirely or in part the large intestine; open exclusion in which a fistula is formed; or resection of the ileocecal segment with closure of the two extremities, and an ileocolic laterolateral anastomosis by the aid of a button. The incision practised is that of McBurney. The patients who have been operated upon have remained cured, one for six years, one for four years, and the last for four months. —*Revue de Chirurgie.*

Correspondence.

THE RADICAL CURE OF TRIGEMINAL NEURALGIA.

To the Editor of the Medical Record:

Sir:—So much needless suffering to a very unfortunate class of patients may be caused by the acceptance of such statements as are made in an article entitled the "Radical Cure of Trigeminal Neuralgia by Means of Peripheral Operations," by A. V. Moschcowitz, M.D., in your issue of February 16, that I venture to call the attention of your readers to the errors in that article.

(1) "We know nothing of the pathological anatomy of trigeminal neuralgia." This statement ignores the very complete and positive results published by Keen and Spiller in the *Amer. Jour. of Med. Sci.*, November, 1898, and subsequently confirmed by them, and by Thomas[1] of Paris in connection with his studies of neuralgia of the intercostal nerves—and also by Redlich[2] in his studies of tabes. The pathology of trigeminal neuralgia is known to be a degeneration with vacuolization and atrophy of the neurone bodies in the Gasserian ganglion, with secondary degeneration of their axones, and also a connective tissue inflammation in the ganglion, and also endarteritis in the small vessels within the ganglion. The same changes have been found in the spinal ganglia in intercostal neuralgia and in tabes.

(2) "All proof is lacking that the neuralgia originates in the Gasserian ganglion." There can be no better proof than the fact, of which I have personal experience in more than a dozen cases, that when operations upon the peripheral branches of the trigeminal nerve fail to relieve (as they always do fail to give permanent relief) an excision of the Gasserian ganglion or a division of the root of the fifth nerve between the ganglion and the pons always cures. I have never seen a relapse when the ganglion was completely and properly removed, and the published records of Hartley, who first did this operation in America, of Krause, who did it simultaneously in Germany, and of Keen, whose experience has been extraordinarily convincing in this line of work, amply confirm this conclusion.

These statements refute absolutely the other assertions of Dr. Moschcowitz, which therefore require no notice.

I have seen so many patients who have been operated upon in vain by various kinds of peripheral operations and recently by osmic acid injections into the nerve branches, and who have finally come to the radical operation after months of needless suffering, that I do not hesitate to recommend the operation for excision of the Gasserian ganglion, *provided I can select the surgeon to do it.* I have seen failures only in incompetent hands.

Dr. Moschcowitz claims that it is to the regeneration of the divided peripheral nerve that recurrence of pain is due. That may be true, but I have cases on my records where the pain has recurred after peripheral operation too soon to be due to regeneration; and other cases where it has recurred when a half-inch of the nerve has been exsected; and other cases in which pain has returned and at the radical operation no evidence of regeneration or union of the formerly divided peripheral branch has been found. Keen has similar records.

The cases cited by Dr. Moschcowitz are both too few in number and are reported far too soon to afford any convincing proof of his statements, but if his suggestions are followed patients will be only temporarily relieved, if at all.

M. Allen Starr, M.D.

AIR DISTENTION OF THE BLADDER.

To the Editor of the Medical Record:

Sir:—I hope you will pardon me for taking issue with you in regard to several of the inferences and conclusions given in the editorial on "Distention of the Bladder with Oxygen" (Medical Record, February 2). Taking them *seriatim:* It is asserted that Nitze attempted to use air in the bladder in connection with cystoscopic work, "but abandoned the practice because of the possibility of producing air embolism or of causing infection by germs carried into the viscus with the admitted air." Nitze did not abandon the use of air for the reasons named, but because (a) his cystoscope lamps were hot and would scorch the bladder wall if used with air; (b) the lenses of his cystoscope receiving a smear from the mucus of the urethra or bladder, would be put out of use. The claim of Lewin and Goldschmidt that the use of air in the bladder was dangerous because of the possibility of embolism was made later by several years

[1] Iconographie photographique de la Salpêtrière, 1902, Vol. XV.

[2] Redlich: Pathol. der Tabes, Jena, 1897

than the time of Nitze's attempted use of air; and the fallacy of the claims of Lewin and Goldschmidt has been demonstrated, during the last six or eight years, by the countless times in which it has been used without any such effect, and also by experimental demonstrations. Since practically all cystoscopes of the present day are supplied with lamps that are of low tension and without sufficient heat to cause discomfort even, the assertion that the injected oxygen does away with an objection to air on this score (that "the heat of the electric bulb of the cystoscope is also not found objectionable"), loses its apparent force.

While radiography for vesical calculi is interesting as a study, its value in the clinic does not compare with the more definite and satisfactory returns from cystoscopy in that condition; so that the quoted assertion of the authors of the use of oxygen, that it presents a distinct advantage in making radiographs "when the presence of calculi is suspected" is of questionable practical value. One thought suggested by the above is that if the conclusions of the authors are as much at variance with the actual conditions as their premises, their work promises little of value. However, this is to be determined by applying the oxygen to clinical uses.

Bransford Lewis, M.D.

St Louis, Mo

MEDICAL TREATMENT OF APPENDICITIS.

To the Editor of the Medical Record:

Sir:—Pfister's statistics on appendicitis treated with ice and opium, commented upon in the Medical Record of February 16, are in accordance with my own observations. Very many appendicitis patients will recover from single attacks, under ice and opium treatment—more in fact than will recover under unskilful surgical treatment. But are there not surgeons whose death rate in appendicitis is only one or two per cent., taking all classes of cases as they run, and refusing none? The fallacy in statistics like Pfister's lies in the fact that the report is incomplete. He does not tell us what happened to the patients in their subsequent attacks, or if they were where ice and opium treatment could be properly carried out by other physicians. He does not tell us how many of these patients suffered from gastrointestinal disorders of chronic character, due to peritoneal adhesions resulting from the infection. He does not tell us of the time wasted in bed by patients who would have been out promptly after nice surgical treatment. He does not tell us of the proportion of patients who may have post-operative ventral hernia, because of the kind of operation that may be required for complications in subsequent attacks—complications that would have been avoided by prompt and proper attention of the kind that is based upon sufficient data. I do not know how the German surgeons will accept Pfister's statistics, but in America they would be considered as unscientific and incomplete in character and mischievous in their influence. There are perhaps few surgical patients who are easier to save, or easier to lose, than appendicitis patients. Some time ago I published letters from ten consecutive appendicitis patients who had been operated upon, and who had had medical treatment in previous attacks. Every one of the patients stated that under surgical treatment they had suffered less than they did under medical treatment previously. Some of these patients had been treated by the ice and opium method. Pfister's statistics do not bring out points of this character.

Robert T. Morris, M.D.

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OUR LONDON LETTER

(From Our Special Correspondent.)

THE ORIGIN OF LIFE—TRAINING OF RECRUITS, DANGERS OF DRILL—CEREBROSPINAL MENINGITIS—OBITUARY.

London, February 1, 1907.

Those who take an interest in discussions on the Origin of Life may remember the part taken by Dr. Charlton Bastian in the early seventies, when he showed himself a stout controversialist and an experimenter. Since then his practical work as a clinical physician and teacher at University College and the National Hospital for Paralysis has brought him a great reputation, and his contributions on neurological subjects are highly esteemed. Probably you will agree with me that they are of more value than his speculations. He has, however, returned to his experimental investigations, and last week at the Medico-Chirurgical Society read a paper on the "*De Novo* Origin of Bacteria, Bacilli, Vibriones, Micrococci, Torulæ, and Moulds," in certain previously superheated saline solutions contained within hermetically sealed tubes. The solutions contained inorganical salts, and he said the best results were from two solutions—one having small quantities of sodium silicate, ammonium phosphate, and dilute phosphoric acid; the other, sodium silicate and liq. ferri pernit. With these solutions, he said, exposure to diffuse daylight at only 60° to 65° F. favored the appearance of microorganisms as much as darkness in an incubator at 95° F. The solutions were put in superheated tubes, sealed, and again heated to 239° F. and up to 266° F. for ten to twenty minutes. In all tubes after this a small deposit of silica or of iron silicate was thrown down. The tubes were then exposed to daylight or put in an incubator for periods of five weeks to four months. When opened he found in varying abundance one or more kinds of organisms, of which he showed photographs. No carbon was present in the solutions but its chemical ally silicon. Such solutions are nourishing media for organisms—can they engender the living units? was the question for the experimenter. After careful search Dr. Bastian said organisms were always found on or within the substance of the flakes of silica, while the fluid above was perfectly clear and remained so for months, though the organisms were swarming on the silica. Some were found in flakes taken from tubes from which all air had been expelled by boiling when they were hermetically sealed, so that no carbon could be present unless it had existed in the chemicals or distilled water. Even in tubes which did contain air this was always separated by a deep layer of the fluid itself from the deposit. As silicon replaces carbon in some organic chemicals, it was contended that these experiments give evidence that silicon may enter into the composition of protoplasm in place of carbon. As to the larger question of the origin of life, Dr. Bastian said that if the tubes were opened a few hours after heating no organisms were detected, but similar tubes, after longer exposure, contained them. They were always motionless, so had sprung up and multiplied in the sites where found. Dr. Bastian argued that they must have been engendered *de novo*, because, apart from spores of bacilli, no organisms could resist boiling for two or three minutes, and spores were killed by the same exposure to 239° F. The forms assumed he compared to crystals—regarding each as the resultant of the molecular constitution of their initial units on the particular media and surroundings in which they occurred. The lucidity of this explanation possibly your readers may appreciate.

Professor Starling lent a certain amount of support to Dr. Bastian's thesis, on the ground that inorganic material becomes organic in the body, and we call the change assimilation. Dextrorotatory sugars, he remarked, can be assimilated, but invert sugar cannot. But he could not deny that there was a great gulf between such assimilation and the production of new life. If it be maintained that higher forms of life are continuously evolved from lower forms, the process might not stop at the lowest, and it seemed natural to seek for a bridge to span the gulf that separates the living from the non-living. Even in the body the red blood cells were on the border line, and when killed by formalin gave reactions which were considered characteristic of living cells. In the fortuitous concourse of atoms it might be supposed that a substance capable of growth might occur, and, if it had stability enough, acquire a power of adaptation to environment indistinguishable from living protoplasm. Even then it would only be the pabulum for more highly organized bodies, and it could only survive under such conditions as Dr. Bastian's tubes provided. The practical question was whether the bodies found in these experiments were really alive. He did not admit that this was proved. A plate culture would be some evidence, but cultivation would have to be under the same conditions as those under which the organisms had been formed.

Dr. F. W. Goodall said he did not feel satisfied that the tubes had been perfectly sterilized, nor that the motionless bodies exhibited were actually alive. How could their life be recognized?

Dr. Bastian replied that his tubes were subjected to a very high temperature and, after being filled, exposed further to 266° F. for twenty minutes, which would certainly kill all organisms and spores. In the tubes opened in a few days nothing could be found, but in those examined later organisms swarmed in every drop. They not only increased in the tubes, but multiplied under suitable conditions after removal to a slide. Some were unlike any hitherto described.

At the Royal United Service Institution, on Wednesday, Lt.-Col. F. A. Davy, M.D., late of the Army Medical Corps, brought a grave indictment against the methods of training recruits. Surgeon-General T. J. Gallway, P.M.O., of the Aldershot Army Corps, presided, and an interesting discussion took place. Col. Davy regarded the setting-up drill of recruits as a main cause of diseases of the circulatory system and the invaliding of many soldiers. Mechanical obstruction and strain were imposed on the heart. There ought to be nothing in drill that would not benefit even a defective man, but the system of military drill in vogue

was injurious to the strongest, and was training with a blot in it. The measurement of the recruit's chest might be increased by it, but only at the expense of motility and of vital capacity. Sooner or later it became distressing—exhaustion after morning drill indicating danger. Col. Davy was sure that in the majority of men invalided for heart disease—excluding rheumatic cases—the early link in the pathological chain was forged on the drill ground. Before appearing at the hospital there would be a long period of discomfort, heart beating, dyspnea, etc., for which the young soldier blamed his recently-donned pack or valise, forgetting that before enlisting he could have carried it easily enough. Tight clothing was bad, but the attitude was worse. The result of keeping expiration in abeyance was a disturbance of the balance between pulmonary and systemic circulations. The chest swelling adopted by drill sergeants must be followed by injury, for it was in contravention of physical laws. The evil was greater because it was done in the name of good. It produced deserters as well as invalids. What was often called fine physique was really deformity. He held that this chest swelling was contributing largely to the waste of the army. The remedy was easy—merely to abstain from chest dilatation, from directing the forepart of the feet to bear the weight of the body and movements designed to "open the chest." Col. Pollock, at Hounslow, used no breathing exercises.

Col. Rolt, Inspector of Gymnasium, hinted that the author was not quite up to date, as the army council lately adopted a system based on the Swedish, which, he thought, Col Davy would approve. The drill book was to be altered accordingly.

Col. G. M. Fox said in his experience soldiers did not "blow themselves out" except at inspections. Deep inspirations and expirations kept up the motility of the chest.

Dr. Deane thought the position of "Attention!" was neither esthetic nor useful. The natural position of a man was erectness without rigidity. He thought the Army Gymnastic Staff should have charge of drilling, under the superintendence of the Army Medical Corps.

Maj. Moore said Col. Pollock's company were all picked men and superior to the ordinary recruits, both physically and intellectually, so his success proved nothing. He thought Col. Davy had pointed out the blot on the system. The root of the evil was hurrying the training too much.

General Sir J. Moody said he never knew men in the marines to suffer from the effects of setting-up drill.

Cerebrospinal meningitis is causing some deaths. At Glasgow the Health Office reports that thirty-three cases were notified during January, and that seventeen proved fatal. The disease seems making headway among children, and has been placed under those notifiable. At Leith two deaths have been registered, one on January 15, the other on January 29. One of these occurred in the Leith Hospital. The M.O.H. has had the houses of the patients disinfected and taken all precautions. The man who died on the 29th had been working in Leith Docks on a steamer which had arrived from America. Notification has not yet been made compulsory at Leith.

The death of Sir Michael Foster, which took place rather unexpectedly on Tuesday, while on a visit to London, deprives us of a leading physiologist closely identified with the profession. He was a University College student, whence he graduated B.A. and M.D. at the University of London. For five or six years he practised at Huntingdon, where he was born in 1836, his father being a surgeon in the town. In 1867 his college made him Demonstrator, and two years later Professor of Physiology. In 1870 he went to Cambridge as Prælector at Trinity College, where he became a Fellow. In 1883 the University gave him the professorship. Soon after entering Trinity he was elected F.R.S., and in 1881 he was appointed secretary in succession to Huxley, who became president. He was knighted in 1899, and the next year entered Parliament as representative of the London University. He rather disappointed his supporters there, though on some subjects he was listened to with close attention. He was elected as a Liberal Unionist, but when the Fiscal controversy arose he ranged himself with the Free Fooders, and after a time crossed the House to the Liberal side. At the last election he lost his seat.

Mr. C. J. Oldham, F.R.C.S., Surgeon to Brighton and Sussex Eye Hospital, died on January 24, aged fifty. He was a Guys student and served in the several resident posts at that hospital and then became clinical assistant at Moorfield's and Assistant Surgeon to the Central Ophthalmic Hospital. At the International Ophthalmological Congress, in London, in 1872, he read a paper on an improved refracting ophthalmoscope, and demonstrated its value. He was then settled at Hove, Brighton, where his skill as an oculist had secured him a large practice. Outside his profession his hobby was music and the collection of rare violins.

The late Dr. Savage, who was killed in the earthquake at Jamaica, had since his retirement made several trips to the West Indies. In a long and active career at Birmingham he had reaped abundant success and distinction. He was Surgeon to the Hospital for Women from its foundation, had been lecturer at Sydenham College and Queen's College. At the latter he held the Chair of Midwifery, and on it merging in the University of Birmingham he was made the first professor of the subject, his colleague at the Women's Hospital taking the professorship of Gynecology. Dr. Savage was also Consulting Surgeon to Hospitals at Wolverhampton and Kidderminster, and had been President of the British Gynecological Society. His Ingleby lectures on "Abdominal Section," in 1881, and his papers on "Uterine Myoma," and other points in the specialty, are worth notice, though his practical skill and success as a Surgeon in the department overshadow his literary contributions. He was M.D., S.L., A.M., 1862; F.R.C.S., 1860. Later he joined the College of Physicians. He was also F.R.S. Eden, and became a J.P. and a County Councillor for Warwickshire.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

CARCINOMA OF THE APPENDIX—A NEW HEART DRUG—CRIPPLES IN GERMANY—HAY FEVER—GOITER—INCREASED FEES FOR MEDICAL MEN—BIRTHDAYS OF BERGMANN AND WALDEYER.

BERLIN, January 10, 1907.

A PAPER on primary carcinoma of the appendix was read recently by Landau before the Medizinische Gesellschaft. In performing a hysterectomy for myoma of the uterus the appendix was found thickened at one point and it was accordingly removed. Microscopical investigation showed that a carcinoma simplex was present. The speaker said that he had been able to find records in the literature of only fifty-eight such cases, and that in a quarter of these the tumor was not diagnosticated before autopsy. In 50-60 per cent. of all cases the new growth originated in the tip of the appendix, and women were more frequently involved than men. The age of the patients varied from eight to eighty-one years, though most of them were between forty and fifty. The symptoms were the same as those of a simple appendicitis, though the pain had a tendency to be dull rather than acute. Only in six cases has surgical intervention been carried out on this account, the organ usually being extirpated because it was discovered to be diseased in the course of other operations.

A remedy which may possibly be found of use as a substitute for digitalis always merits the interest of physicians. Such a remedy, found in the *Acokanthera schimperi*, was described by Lewin in a paper read before the same society. In 1888 there was obtained from an arrow poison named onabai, a crystalline glucoside, which was called ouabain. Recently the speaker had been able to isolate from the leaves of the akocanthera an amorphous glucoside ouabain which had the same composition as the crystalline form, but possessed greater influence on the heart. The effect of ouabain was a hundred times stronger than that of digitalis, and a rhinoceros could be killed in twenty minutes by an amount equal in size to a bean. The glucoside slowed the pulse and increased the heart action, the systolic impulse being more powerful and causing a better filling of the vessels. In a dog weighing twelve kilograms the injection of 1 millogram of ouabain caused the blood pressure to rise from 153 to 213 mm of mercury.

A short time ago the first Berlin Orthopedic Hospital was opened. The building contains only ten beds, but it is expected that this number will soon be increased. In his opening address the director, Dr. Biesalski, pointed out the importance, from the economic standpoint, of a proper system of caring for cripples. In Germany there are about twenty institutions of this sort, though not all are under medical control. The statistics of the institution for crippled children in Munich show that during the past seventy five years 93 per cent of the children treated have been enabled to earn their own living. In Berlin the last enumeration of the crippled showed that there were 2,700. Assuming that the total for Germany is 100,000, it may be estimated that if proper measures were taken 90,000 persons now more or less dependent on outside aid could be made capable of earning their living.

A paper on pollen endotoxin was presented by Wolff before the Verein fur innere Medizin. He said that hay fever began a fortnight sooner than usual this year on account of the early spring. The serum treatment succeeded in mild cases, and in those of medium gravity, but was without success in very severe ones. The speaker further stated that the affection was much more widespread than was generally believed, because many cases of rhinitis were caused by pollen, and, therefore, diagnostic inoculations with pollen antitoxin were of importance, especially for army physicians. As prophylactic measures he recommend-

ed packing the nose with absorbent cotton or some other form of filter for the air entering the nostrils. As the conjunctivæ were often the starting point of the affection, the wearing of eye glasses surrounded by a padding of cotton was advisable.

Hildebrand, at a recent session of the Medizinische Gesellschaft, reported his observations on goiter and its treatment. He pointed out that it was not always the largest tumors that caused the greatest disturbances. Growths extending under the sternum and under the ribs could easily compress the lungs and large blood-vessels. The external application of iodine was not successful, and its internal use was effective only in recent cases of follicular goiter. In older persons operation was the only remedy. Injections of iodoform were not without danger, they did not entirely relieve the patient, and rendered succeeding operations more difficult. The operation was much facilitated by using local anesthesia, Kocher's method of skin dissection, and preliminary ligation of the blood-vessels. Performed in this way the mortality of the operation was .3 to .5 per cent. The prognosis of malignant disease of the thyroid gland was particularly bad, for thrombosis of the veins occurred early. Out of thirty cases the speaker had had only one remain free from recurrence for a year.

The medical societies have united in taking a step which the exigencies of modern life have rendered imperative. For half a century the honorarium of the physician has remained the same, although the expenses of living have increased greatly. The medical societies have, therefore, announced that with the beginning of this year fees for medical services would be increased.

The past months have shown that Berlin is not lacking in evidences of appreciation of its great medical men. On the occasion of Waldeyer's and Bergmann's seventieth birthdays a celebration was held which was participated in by the members of the University and a large number of physicians. The practitioners especially owe much of their satisfactory standing to Bergmann's efforts. His merits as a surgeon are well known, and I will say only that much of his most important work was done in the province of military medicine. In 1807 he founded the Berliner Rettungsgesellschaft, an organization intended to give first aid in cases of accident. He also established a bureau for the providing of adequate nursing and medical treatment for the poor in their homes. In 1899 he was elected a member of the Aerztekammer, and he rarely misses a session. It was through him that the present free courses for postgraduate study were organized, and the erection of the splendid new Kaiserin Frederich Haus was also largely due to his efforts.

OUR CONSTANTINOPLE LETTER.

(From Our Special Correspondent.)

THE RUSSIAN HOSPITAL AND ITS CHIEF, DR. VLADIMIR STCHÉPOTIEW.

CONSTANTINOPLE, January 8, 1907.

ONE of the most interesting and most admirably equipped charitable institutions of the Ottoman metropolis is undoubtedly the Russian hospital. Its chief, Dr. Vladimir Stchépotiew, has been kind enough to conduct me through all its various departments, wards, laboratories, surgical rooms, etc., showing and explaining things with that untiring sympathetic affability which is characteristic of almost every educated Russian gentleman. Dr. Stchépotiew is quite naturally very proud of his hospital, because it is, in all its present working order and efficiency, entirely his creation. During the sixteen years of his administration of it many important improvements have been accomplished, many innovations introduced, many modern essentials added. All has been done step by step with much judicious care and circumspection, with unabated energy and generous though wise expenditure of money, until the charitable institution has become, what it is now, an up-to-date model of a hospital establishment, with all the latest requirements of medical science.

Not without particular interest is the history of the origin of this establishment. The first foundations of a Russian hospital in Constantinople were created about 1869 by the then Russian Ambassador, General-Adjutant Count Ignatiew. He was the first to recognize early the necessity of an infirmary on the banks of the Bosphorus for the large numbers of people of Slavonic nationalities, such as the inhabitants of Macedonia, Albania, Montenegro, Bulgaria, Russia, etc., who continually pass through and flock to the magnificent metropolis on the ever-inexhaustible, mighty Thracian stream. In the mentioned year Count Ignatiew opened, with the sanction of the Russian Government, in Russia as well as among the Russian subjects resident in the Ottoman Empire, subscription lists to gather contributions for his hospital scheme. In the course of four years the free offerings amounted to 39,000 roubles (something about $15,000). In the beginning the Russian Ambassador experienced some difficulty in obtaining proper grounds for the building, as the greater part of land in Constantinople and in other parts of Turkey is so-called "vakouf" property, that is to say, it belongs to mosques and Mussulman religious institutions, is therefore sacred, and must not be sold to Europeans. The original piece of ground bought by Count Ignatiew happened to adjoin a "tekke" (Mahomedan monastery). The Turkish Government, in consequence of that, objected to the erection of a hospital on that place, and bought it up for 5,000 Turkish liras (about $20,000). Other grounds were bought, more appropriate and extensive, where the first buildings of the hospital were erected. Soon afterward, in 1873, the Emperor Alexander II sanctioned a grant for the Russian hospital to the amount of 130,000 francs. A committee was there and then appointed under the presidency of Count Ignatiew, the Ambassador, to establish rules and regulations concerning the administration and management of the hospital. The following points in these rules and regulations are of general interest. The hospital, which is dedicated to Saint Nicolaus, is to be under the direct patronage of the Russian Ambassador. The administration is entrusted to a committee consisting of the Russian Consul-General, the chief physician of the hospital (at present Dr. V. Stchépotiew), the doctor of the Embassy, and a secretary appointed by the Ambassador. The committee has to meet once a month. The hospital is open to everybody regardless of nationality. Preference, however, is given to Russian subjects and to Slavs. Everything concerning the medical management is under the direct supervision of the chief. . . . The present three-story building of massive stone was erected in 1875 by the means of Mr. Shabouroff, who some time previously gained from the Turks, through the assistance of the Russian Embassy, a very big lawsuit. The then living Princess Alexandra Petrowna took the hospital under her patronage and made a generous offering to it of all the necessary linen, crockery, and bed-covers. She also ordered that Russian sisters of charity should be sent to the hospital to attend to the patients. In 1876 an *ukase* was issued that certain taxes should be levied in aid of the Russian hospital from every commercial sailing vessel and steamer passing through the Bosphorus and from every passport of Russian subjects coming to Turkey. All the poor, however, are exempt from this tax. In 1889 the committee of the hospital found it necessary to create the post of a chief medical administrator, which should be free and independent, and in the following year Dr. Vladimir Stchépotiew, then working with Professor A. A. Ostroumoff in the university of Moscow, was called to fill this important post. He has held it now, as already mentioned, for sixteen years, with admirable skill and energy.

The buildings of the hospital proper, with all the adjoining constructions, which are quite numerous, occupy an excellent position in the most salubrious district of Constantinople called Pancaldi, on an elevation of 300 feet above the sea level. From the windows of the chief building a magnificent view unfolds before one's eyes. A broad, extensive, ever-green valley stretches down to the deep and pure current of the Bosphorus. Beyond are seen the famous Scutari cypress woods, the Marmora Sea, and further still, on the very horizon, the so-called Princess Islands, summer resorts of the well-to-do inhabitants of the Ottoman metropolis. Not far from the hospital is the quarter Nishan-Tash, where are the residences of the Grand Vizir, ministers of State, and dignitaries of Yildiz-Kiosk. The extensive grounds of the hospital include two gardens and twelve different buildings: the infirmary proper, the houses of the chief medical man and his assistant, an ambulatory, a house for the care-taker, a beautiful church, a house for the priest and his assistants, a post-mortem room, a separate building for servants, a laundry, a Turkish bath, and a separate house for venereal cases. There is also a spacious terrace which is joined to the principal building of the hospital by a covered glass gallery. On this terrace patients with chest troubles are able to promenade in suitable weather, breathe the fresh air from the Pontus, and enjoy a magnificent view of the scenery around. There is on it also a veranda which shelters from the cold north winds. Here spend a greater part of the day such patients as need much pure out-door air. The principal building is, as already mentioned, of stone and consists of three stories. In each story there runs in the middle from one end to the other a broad corridor well ventilated and with plenty of air and light. In the lower story there are a large dispensary and a laboratory. The second floor contains excellent operating rooms with all the modern requirements of surgical science, four large rooms for paying patients, where one receives the best

possible treatment for forty piasters daily (about $2); the reception room of Dr. Stchépotiew, apartments for the sisters of charity, and a bath room. In the third floor there are five chambers for paying patients, and the wards, with thirty-three beds for free patients. The kitchen is in a separate building. On every floor there is a large filter apparatus supplying, under pressure, quantities of pure drinking water. The heating is done with stoves more or less resembling those seen in Holland, with the only difference that they contain inside iron tubes. For more efficient ventilation the windows are provided with frames of the system of the Swedish authority, Dr. Chastaing. This system consists in two parallel panes inserted in the upper part of the window frame at a small distance one from another, and in a manner that the outer pane leaves below and the inner one leaves above an open space of two centimeters breadth. In this way the outer air has free communication with the inner without creating any draught. The hospital is provided with a thermo-syphon, which provides in each story a constant supply of hot water. All the rooms and corridors are oil painted.

The staff of the hospital consists of two medical men, the chief and his assistant, six sisters of charity, a general medical assistant, and a care-taker. There are also eleven servants. For difficult surgical operations the services of Dr. Cambouroglou Pasha, chief of the surgical department of the German hospital, are secured. From 1881 to 1887 the annual number of patients treated in the wards did not exceed 300. From 1893 to 1899 the number was over 400. For the last five years the average has been 350. The average annual number of patients received in the ambulatory was in the last few years over 11,000. All these patients were treated and supplied with the necessary drugs free of charge. The out-patient department of the Russian hospital is the most frequented. The numbers are constantly increasing, and reached last year to about 13,000. The greatest number of natives consist of Turks, Greeks, and Armenians. The hospital patients are mostly Russians, Bulgarians, Servians, and other Slavs, and many Jews. Some years ago a charitable fund was created for the purpose of helping the poor patients on their leaving the hospital after being cured. Contributions are received mostly from Russian subjects serving in Constantinople. At present the fund has a little over 2,200 roubles. The diseases treated are generally typhoid fever, pneumonia, articular rheumatism, and consumption. The yearly statistics show that, generally speaking, the following five classes of people form the largest contingent of those received into the hospital: Laborers, sailors, gardeners, servants, and monks. As already indicated, every credit is due to Dr. Vladimir Stchépotiew's energy and administrative wisdom and circumspection, as the perfect state of the Russian hospital, as it is seen and admired at present, is entirely his work. Mention should be made also of the valuable efforts of the Russian Consul-General, Mr. Panaffidine, whose wife is an American lady, who does all in his power to advance the prosperity of the hospital.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

APPROPRIATIONS FOR NEW HOSPITALS—SANITARY IMPROVEMENTS AT BILIBID PRISON—TEMPORARY NATURE OF WOODEN BUILDINGS—CHOLERA—A POSSIBLE EXPLANATION OF PERIODICAL OUTBREAKS—PERSONAL.

MANILA, P. I., December 31, 1906.

THE activity of the Bureau of Health in keeping before the public the inadequacy of the present hospital facilities in Manila and the great need for additional quarters for the care of the sick has at last received concrete recognition in a recent appropriation bill of the Philippine Commission. Fifty thousand dollars were appropriated for a new hospital at Bilibid Prison; ten thousand for the installation of a proper sewer system and toilet facilities, and ten thousand for the installation of sanitary beds, instead of the present miserable vermin-ridden bamboo bunks; and twenty-five thousand for the construction of an addition to the present San Lazaro Insane Hospital.

The hospital at Bilibid will consist of an administration building with two wings, one for the care of tuberculous prisoners and the other wing for general diseases. It is also the intention to send at least 1,000 prisoners to the penal settlement on the island of Palawan. With the improved hygienic conditions which will result from the above mentioned changes, it is thought that the morbidity and mortality among the prisoners will be materially decreased.

With the addition to the insane hospital at San Lazaro that institution will then be able to care for 350 insane, which will relieve, at least to a certain extent, the pressing appeals which are constantly being made on behalf of these unfortunates.

The material for the construction of the insane hospital is to be of reinforced concrete, which will make a permanent structure and one that will not suffer very much from deterioration. The experience which the Government has had since the American occupation in the construction of buildings has been sufficient to show that structures of Oregon pine, red wood, or other soft wood are most temporary in character, the destructive influences of a tropical climate causing their complete deterioration in a few years. The white ant is probably responsible for most of the damage, and is a pest which it is difficult to guard against, because it enters a building through small tunnels and never works in the open. Very often its presence is not detected until the building collapses, when it is found that nothing remains but a shell of wood, the entire core or pulp having been eaten out. Dry rot is another important factor in the early decay of wooden structures; so that, while a stone and cement structure costs more in the beginning, it is very much cheaper in the end. Many of the army posts throughout the island, which were constructed during the early days of American occupation, have been entirely destroyed by the white ant. There are also numerous other forms of animal borers that shorten the life of wooden structures.

Cholera seems to have almost entirely disappeared from the island of Luzon; in fact, there is very little remaining anywhere in the Philippines. For the week ended December 22, 1906, fifteen cases and six deaths were reported in the province of Capiz, on the island of Panay, and four cases with four deaths in Oriental Negroes. This would indicate that the epidemic is about to terminate. The disease has been reported at a number of places, but upon investigation it was found that the victims had partaken of large quantities of green rice. According to native physicians many deaths occur yearly in the Philippines from this cause. The fact that there has been no spread from these suspicious cases would seem to indicate that the diagnosis of rice poisoning was correct

Since Kline's announcement that plague organisms probably show different degrees of virulence, depending upon the condition of the envelope which surrounds the organism, considerable speculation has been indulged in, in the Philippine Islands, as to whether the periodical outbreaks of cholera, and, in some instances, its rapid disappearance, cannot be accounted for upon the same theory. It would seem possible that certain weather conditions and an environment favorable to changing the character of the envelope which might surround the cholera organism would probably account for the cholera which has been encountered in the Philippines during the last six months.

So far there has been no official report made by the committee appointed by the Governor-General for the purpose of investigating the responsibility for the deaths of the prisoners in Bilibid Prison, who were inoculated for cholera protection, and of which mention has been made from time to time. It is known, however, that of the twenty-four prisoners inoculated thirteen have succumbed, and that there are a number of others who are in a very precarious condition.

Dr. Jos. B. Girard, Colonel, Medical Department, U. S. Army, who has been Chief Surgeon, Philippines Division, for the past few years, has completed his tour of duty in the islands and returned to the United States on the Army transport which left December 15, 1906.

Dr. Charles B. Byrne, who has been Chief Surgeon of the Department of Luzon, was made Chief Surgeon, Philippine Division, on the departure of Col. Girard.

Dr. Wm. H. Cook, Contract Surgeon, U. S. Army, recently stationed at Camp Bean, Samar, and who was formerly a medical inspector of the Bureau of Health, has returned to the United States.

Dr. F. W. Dudley, Assistant Surgeon, St. Paul's Hospital, Manila, has returned to the Philippines after an extended visit to the United States.

Determining the Sex of the Fetus.—In regard to this Sheill says that "a still tongue makes a wise head," but gives the following as the result of his own observations. The rule followed was that if the fetal heart rate is 141 or less, the child will be a boy; if it is 147 or more, a girl; and if between these two limits the sex is doubtful. In 300 cases the prediction was correct in 56 per cent; omitting those cases in which the women were already in labor the percentage of correct predictions was 73; while counting only primiparas mistakes were made altogether in not more than one-tenth of the cases.—*Dublin Journal of Medical Science.*

Progress of Medical Science.

New York Medical Journal, February 9, 1907.

The Scranton Typhoid Epidemic.—J. M. Wainwright presents a preliminary communication on this subject. Up to January 31, a period of nearly two months of the epidemic, 1,121 cases had been reported, with a mortality of about 9 per cent. The epidemic is now on the decline, only four new daily cases having recently been reported. The direct source of the outbreak was an infected water supply, but what infected it has failed to come to light after a most rigid investigation. The outbreak was practically confined to persons using water from a particular reservoir, and to those in personal contact with such cases. The principal supplying stream of the reservoir receives a few miles above the sewage of a town of some eight hundred people. The city has had in past years comparatively little of the disease. The cutting out of the water supply from the infected reservoir from the general city water mains broke the force of the epidemic at once. The author details the special municipal and household regulations which were instituted. Nothing is stated concerning any peculiar clinical features of the outbreak. He pays a handsome tribute to the Mayor of the city, who seems to have been all that a municipal executive should be in such an emergency. We are told that "it is in a very large degree to his singleness of purpose, breadth of view, and ability for organization that scores of cases and many deaths have been prevented and only those who have worked with him will ever know the debt which his city owes him."

Etiological Factors of Invalidism Following Childbirth.—Some of these factors are reviewed by J. C. Applegate. Predisposing factors are lack of knowledge on the part of the laity as to the importance of hygienic measures and inattention on the part of the physician not especially interested in obstetrics as to the position of the child, pelvic mensuration, and the effect of pregnancy on the maternal organism. Factors during labor are the influence of posture on mechanism, the modifying effect on injuries to the birth canal by anesthesia, protection of the perineum during the birth of the shoulders as well as of the head, and instrumental delivery. Post partum factors are time for repair, method of repair, no repair at all, and the general management of this period. The paper is an elaboration of the above outlines. Concerning repair, the author follows the following rules: (a) Immediate repair when convinced from the primary examination that the lesion involves the perineum alone, or the tissues in immediate juxtaposition thereto, when the patient's condition will warrant it, excepting the complete variety. (b) When deep vaginal or cervical lacerations demand immediate repair to control hemorrhage, otherwise the cavities are packed with gauze and operation deferred. The second day rather than a later period is selected for the complete tear or when fistulæ are complications, at which time all lesions are repaired from above downward. The condition of the patient will rarely permit these operations at the end of labor, nor is the physician prepared for them. While this is not the best time for cervical repair, it is better than at the end of labor, also better than to subject a patient to the second operation during the puerperium.

Atypical Manifestations of Paludism.—Ten atypical cases are detailed by J. I. France of Portsmouth, Va. He concludes: First—That chill, fever, and sweating are not always the mode of onset of malarial infection. Secondly That the seat of pathological change or congenital defect is often the point of attack of plasmodial invasion. Thirdly—That periodicity is the one pathognomonic symptom of all forms of paludal infection. Fourthly—That women are oftener the victims of malarial infection than men. Fifthly—That quinine is the standard remedy for malaria. He also notes that tissues which have undergone pathological changes and those which are congenitally defective are more susceptible to the toxine, which is elaborated in the process of segmentation of the hematozoa. What the factors are which determine the variation in the mode of manifestation of this toxemia, so that in one patient it takes the form of a febrile reaction, in another a painful paroxysm, or a seizure of some sort in an organ previously crippled by disease or congenitally defective, are at present not fully determined, but the fact is fully attested by ample clinical observation.

Journal of the American Medical Association, February 16, 1907.

Late Phlebitis After Clean Abdominal Operations.—W. W. Grant says that he has been compelled by later observations and experience to modify his formerly expressed opinion that phlebitis after abdominal, rectal, or genitourinary operations is invariably due to infection. In his paper he considers especially that form of phlebitis culminating in the veins of the legs (usually the left leg), and occurring most frequently about two weeks after simple aseptic abdominal operations, without preceding fast pulse, fever, pain, or any other premonition. He refers to the statistics of Cordier and Haward and gives the account of a typical case occurring after operation for chronic appendicitis. He asks what was the etiology of this phlebitis, and gives a summary of the literature of the subject as well as the opinions obtained by correspondence with a number of prominent surgeons. These vary somewhat, nearly half of the answers admitting infection as a possible cause, the others rejecting it or being noncommittal. Grant gives his own opinion that it is probably not septic, and that the specific cause or causes are unknown. It is not correct, he thinks, to assume an infection without satisfactory evidence. The cause of the thrombus before the inflammation or of the phlebitis preceding the thrombus, is the vital point. It is impossible, Grant says, to reconcile the facts with the idea that the cause is the recumbent position or the simple ligature or injury of small veins, often in a distant field and on the opposite side of the body, though admitting that the infection need not come from the site of the operation. He believes that there is a general condition affecting the composition of the blood, that may, and often does, exist before operation, which is an essential factor in the cause of the thrombophlebitis in these cases. A careful scrutiny of the patient should be a preliminary and a careful examination of the blood should be made before and after operation. This, if thoroughly done on a fairly liberal scale, would, he thinks, give us interesting and useful information and throw some light on a puzzling subject.

Opsonic Treatment of Surgical Diseases.—A. P. Ohlmacher thinks that possibly Wright's comparatively simple theory of opsonins and its practical application has been rendered needlessly confusing to the average practitioner, and gives his own experience with the use of bacterial vaccines, preferably autogenous, in various surgical conditions. While not neglecting to take the opsonic index when practicable, he was compelled to rely largely on the clinical manifestations as a guide to the repetition and size of dose, always endeavoring, of course, to give the injections at the right time, when the positive phase is beginning to fall, and not in the negative phase. As Wright points out, the great causes of failure in previous tuberculin treatment was the giving of too large injections and too frequent repetition of the dose, causing a marked negative phase and keeping it up. Ohlmacher thinks that his results might have been even better than they were had he been able to make more systematic opsonic determinations, which often show a fall of resistance before the symptoms indicate it. He has had remarkable success in various types of staphylococcus infections; obstinate cases of acne and furunculosis, impetigo, palmar abscess, and in a very distressing case of what had been called psoriasis, but which he thinks was an extraordinary case of staphylococcic dermatitis, and which yielded rapidly to opsonic treatment with an autogenic culture of staphylococcus aureus. He had also satisfactory results with a case of very annoying bladder infection from the colon bacillus, similarly treated after other treatment had failed. A striking case was one of sacculated pneumococcus empyema, in which perfect recovery occurred in seven days after two injections following a small puncture. From what he has already seen, he is prepared to say that with proper artificial autoinoculation, we can obtain constitutional and local improvement in many subacute and chronic affections entirely beyond anything previously possible in medicine. He believes that we have in this method of bacterial inoculations therapeutic agents of a specificity and potency beyond anything heretofore employed in the treatment of disease, except, perhaps, the diphtheria antitoxin.

The Army Canteen.—C. E. Woodruff advocates the restoration of the Army canteen as a protection or counteraction against the grog shops that grow up around an Army post and entice the soldiers into excess. He maintains that while the soldiers are as temperate as any class of laboring men at the present time, and have the advantage of being less neurotic

as a rule, there are still many that will not be total abstainers, and for these, he says, it is better to have a regulated and orderly place, where they can obtain the milder intoxicants, such as beer and light wines, rather than to have them obtain them at disreputable places, run for profit, and that cannot be controlled. It is good ethics, he says, to protect the soldiers from the greater evil by permission, it may be, of a minimum of harm. The profits of the canteen, moreover, are not to the saloonkeeper, but are used for the benefit of the soldier himself. The discontinuance of the canteen has, therefore, been to the soldier's disadvantage on this account. He further argues that the moderate use of alcohol cannot be said to be necessarily harmful on scientific grounds, though that is not claiming that it is a necessary article of diet in the present stage of human evolution.

X-Ray Treatment of Cancer of the Breast.—George C. Johnston criticises some of the reports of failures in this method of treatment as being based on ignorance and insufficient experience. He insists on the value of what he calls antioperative radiation, and claims that during the past year there has been abundant evidence of the value of the ray in producing retrograde change in carcinoma, but advocates the use of the ray alone only in cases in which the condition or age of the patient is against preliminary operation. His conclusions are given as follows: 1. Results are better and more permanent, the earlier the treatment is instituted. 2. The value of postoperative radiation has become more and more apparent. 3. Mediastinal recurrence, while grave is not a death warrant. 4. Technique is not an accomplishment, but an absolute necessity. 5. No tube is too good to use for treatment. 6. Filters are a necessity in the treatment of cancer of the breast. 7. Treat no patient who you know can be cured surgically.

Mistakes in the Diagnosis of Pulmonary Tuberculosis.—H. L. Barnes gives an analysis of the histories of 165 patients with tuberculosis admitted at the Rhode Island State Sanatorium for Consumptives, with special reference to the question of early diagnosis and treatment. Only the cases with reliable and complete record were used. He found the presumable duration of the disease averaged 15.4 months, and that 40.9 per cent. of the patients delayed seeking medical advice or treatment, such delay averaging 7.9 months. Forty-six per cent. were incorrectly diagnosed, the resulting delay in correct diagnosis averaging 11.3 months. In 18.1 per cent. of patients the lungs were examined and pronounced sound; and in 18.7 per cent. the incorrect diagnosis was made without sputum examination, though sputum was available. In 2.4 per cent. the correct diagnosis was purposely withheld by the examining physician. Barnes regrets that this practice is still followed by some, and holds that it is not warranted by any valid considerations. The failure to diagnose tuberculosis after hemoptysis also is surprisingly common, occurring in 12.7 per cent. of the cases here analyzed. Inasmuch as the sanatorium does not receive the worst cases, it seems possible that those it does receive have been more wisely handled than the average of all tuberculous patients in the community, which gives figures an added significance. He says: "This optimistic and fatal waiting policy should be appreciated. A tuberculous history should be sought for in all lung diseases, and in atypical and doubtful cases of grippe, bronchitis, and malaria the diagnosis should promptly be made by tuberculin when other means fail."

The Lancet, February 2, 1907.

Hematuria from Sodium Salicylate.—J. D. Marshall's patient was a girl of ten years with articular rheumatism. Fifteen grains of the salicylate with double that quantity of sodium bicarbonate were given in chloroform water every four hours. This was continued for four days, when the child became delirious and vomited. The hallucinations were not unlike those of delirium tremens, but stopped immediately on withdrawal of the remedy. Some days later the salicylate was resumed in seven-grain doses three times daily. There was vomiting again in two days. Delirium was absent, but the urine contained blood enough to give it a deep red color. Previous to this time it had contained neither albumin nor casts. Symptoms cleared up again on discontinuance of the remedy. Hematuria from the usual doses of this salt is extremely uncommon, according to the literature on this point.

The Present Means of Combating the Sleeping Sickness.—A. Kinghorn and J. L. Todd thus summarize the general lines of prophylactic endeavor. Efforts to check the disease must be directed against the transmitting agent, the flies, either by destroying them or by preventing them from reaching and biting men. Then also we must attack the causative parasite, the trypanosome, by the treatment of persons already infected, and by isolating them so that they shall not serve as foci of infection for other individuals. Areas on which the deposition of the eggs of the fly (tsetse) is suspected should be burned over. Houses can be largely freed from flies by surrounding them with an area 300 yards on each side free from rank undergrowth or grass. Wire gauze or netting may be used for personal protection and prolonged stays in heavy vegetation near water should be avoided. The only drug for trypanosomiasis that has proven of any positive value is the preparation of arsenic known as atoxyl. The value of any drug is problematical, except after prolonged usage and careful observation of the later history of those to whom it is given. In spite of apparently successful treatment relapses are not uncommon, and a fatal result may follow just as surely as if the case had been untreated.

Causation and Treatment of Some Headaches.—W. Harris refers particularly to paroxysmal and periodic headaches and those dependent on some form of toxemia. Many periodic headaches are of the migraine form, probably referable to some temporary vasomotor disturbance. These are described in full in their varying clinical phases. Bromides are often of service during the intervals between the attacks. The actual headache is often best relieved if taken in hand sufficiently early by a full dose of butyl chloral hydrate. Nitroglycerine often brings immediate relief by reducing the blood pressure. The author next refers to periodic headaches, which may resemble true migraine somewhat closely and yet are less dependent upon an hereditary neurosis and paroxysmal vasomotor spasm than upon some peripheral cause which by its local irritant effects may set up reflexly a migrainous attack. These cases, pathologically speaking, would be strictly analogous to reflex epilepsy, such as convulsions dependent upon the peripheral irritation of worms, the irritation of a scar, etc. In many of these the removal of its peripheral cause may be followed by complete cure. The author considers the eyestrain theory as overworked and by no means entitled to all the credence it has received. Ocular headache, in which the pain is usually situated over one or both eyebrows, and is due to errors of refraction, especially astigmatism, is not uncommon. Every now and then the pain may be more periodic in some patients and may exhibit the course of symptoms familiar to us as migraine. In these cases we have to do with a reflex migraine the peripheral exciting cause of which is the visual defect and constant unequal strain upon the ciliary muscle, and these patients will probably get much relief from proper correcting glasses. Toxemic headaches arise from a multitude of causes, and their proper treatment presupposes the removal or abatement of the exciting causes. The author declares that the effect of our open air life has not received sufficient prominence in the treatment of many forms of toxemic headache. Persons who are subject to chronic headaches should cultivate the habit of keeping their windows widely open, and the hardening process thus slowly applied will not only render the individual far less susceptible to catching ordinary colds, but his tendency to frequent headaches will often completely disappear, and from a listless valetudinarian with always something wrong with him he will become brisk and healthy in mind and body.

On Opsonins and the Opsonic Index and Their Practical Value in the Treatment of Disease.—G. A. Crace-Calvert considers this question with special reference to pulmonary tuberculosis in sanatorium cases. In general the results are promising, but as yet not very decisive. The author notes that in these cases there is usually a mixed infection and that after or even while using tuberculin it may be necessary to give inoculations of a staphylococcic or pneumococcic vaccine before the patient will get well. In tuberculosis it is difficult to get a vaccine exactly corresponding to the organism causing the disease. Good effects noted are lessening of the disease activity, as shown by physical signs, and diminished sputa, improved appetite, and increased weight. In ten incipient cases the index has been below normal in four, normal or above in six. All these cases have done well regardless of their indices. In active cases with high fever the index varies from day to day. There is no apparent relation be-

tween the fluctuation of the index and that of the temperature. In the ordinary case with a fair amount of disease the index is usually about normal. In sanatorium "cures" more properly arrested cases (four old cases)—the author has found the index above normal in three and below in one, the latter having been well for six years, and possibly approximating to a normal person. The author considers this question of the index in a "cured" patient important because if it be more usually found low it seems as if the patient's resistance was not permanently affected by treatment, and that he therefore runs a risk of further infection, but before accepting this as a definite statement we want to know if the cases were truly arrested and not simply patched up temporarily, and also what their index was before they started treatment—a point that cannot be settled yet, as the method of estimating the opsonic index has not been in existence long enough to secure any results. The author considers that the opsonic theory is a most brilliant one and full of promise, but considers that its application must be greatly simplified before it can come into general use.

British Medical Journal, February 2, 1907.

The Temperature of Japanese Hot Baths.—L. Hill refers to the case of a Japanese man who could endure a bath of 114° F. for only a minute or two while totally immersed except the face. The bath was raised to this temperature from 103° in about five minutes. He came out from the bath feeling faint and asked to have the window opened. His rectal temperature had risen to 103° F. He said that his countrymen usually sit with the head and arms out of water. Under such conditions they may stand a considerably hotter temperature. They must habituate their skin to stand a high temperature, as the ordinary man habituates his tongue to hot drink. Certain hot baths at thermal springs are used particularly for syphilis. The baths range in temperature from 113° to 128° F. The intense derivation of blood to the skin induced by these baths must have a powerful effect and ought to be a most efficient way of increasing the supply of blood and its opsonin, and the activity of the phagocytes in cutaneous affections.

Repeated Abdominal Section for Perforation of Gastric Ulcers.—The patient of A. Cuff was a man of twenty-seven years who underwent two laparotomies for the perforation of two totally distinct ulcers, over four years intervening between the two attacks. In the first instance an anterior gastroenterostomy was done. Symptoms began to reappear after seven months, but over four years elapsed before a second operation was deemed necessary. His original symptoms began at the age of ten years, or thirteen years before his first laparotomy. The author declares that the onset of pain a few hours after the taking of food, when, the digestion of the meal nearing completion, the beginning relaxation of the pyloric sphincter allows the contents of the stomach to flow into the duodenum, and hence over any hyperesthetic spot in that organ is very suggestive of duodenal ulcer. An interesting fact related by the patient was that indigestible articles of food like pork pie delayed the onset of the pain, and this is in strict accordance with this theory, pork requiring four or five hours for its digestion, while mutton requires only two or three hours. This fact of the possibility of retarding the onset of the pain in cases of duodenal ulcer by the administration of indigestible food, or by eating during the digestion of a previous meal, has been noted previously. The same thing has been borne out experimentally by Cannon, who has shown in the course of his investigations on the movements of the stomach during digestion, by means of the *x*-rays, in cats, that if towards the completion of the digestion of a meal (the movement of which, owing to its admixture with a bismuth salt, was visible on the screen) a hard tablet or button made principally of bismuth was administered, its impact on the pyloric orifice immediately caused the sphincter to contract, and stopped the onward flow of chyme from the stomach to the duodenum for some little time.

Some Points on the Diagnosis and Treatment of Laryngeal Cancer.—F. Semon presents an elaborate paper on this subject. He says that if the vocal cord from which a suspected laryngeal growth springs shows at an early period of the disease a defect of mobility other than due to mechanical impaction of the growth in the glottis on phonation, this sign is almost pathognomonic for the malignant character of the tumor. The author claims that the removal, if possible, of a bit of the suspected growth for microscopical examination is perfectly justifiable, provided the patient's consent has been previously obtained, for immediate radical operation in case the verdict is in favor of malignancy. He still adheres to the opinion, frequently expressed in former publications, that in case of an early diagnosis a thyrotomy is preferable to a laryngectomy. In thirty-three cases for what seemed to be certain or very probable malignant disease of the larynx, in eight the diagnosis was shown either to have been at fault or remained doubtful. Twice the disease was tuberculous. Twice, the tumefaction seemed to be of the nature of an infective inflammation. In two the diagnosis remained doubtful between fibrosarcoma and a malignant growth. Three ceses ended fatally. Of twenty-five verified malignant cases one died and twenty-four recovered. In four recurrence took place. In extrinsic cases total laryngectomy will remain a cruel necessity until some specific shall have been discovered.

Berliner klinische Wochenschrift, January 28, 1907.

Catalytic Influence of Colloidal Metals on Hepatic Autolysis.—Ascoli and Izar report on experiments made in order to determine whether or not autolysis in the liver cells is modified by the presence of colloidal solutions of metals. They found that in the presence of such solutions the autolytic processes were very much accelerated and that this effect was produced no matter whether the fluid tested was acid or alkaline. Even very small amounts of the colloidal metals sufficed to evoke a pronounced increase in the autolytic process, and on using more of the solutions the action rapidly became more intense until a limit was reached, after which further augmentation was less effective. In order to determine whether colloidal solutions of different metals presented different properties in this respect, comparative tests were made with colloidal solutions of silver, gold, and platinum, but it was found that no easily demonstrable differences existed between the effects of the three metals named

Deutsche medizinische Wochenschrift, January 3 and 24, 1907.

Digestive Gastric Hypersecretion.—Boas says that recently this form of gastric neurosis has been found to be much commoner than has hitherto been supposed to be the case. He suggests that when its existence is suspected a dry test meal be administered in place of the customary Ewald test breakfast. For this purpose he proposes the sweet crackers ordinarily known as Albert biscuits; five of these are given, and whereas under normal conditions an hour later but little residue can be obtained from the stomach, if a hypersecretion exists, 100 to 200 c.c. of a mixture composed of a thin layer of débris and four or five times the amount of clear supernatent fluid may be expressed. Among the symptoms of the condition, which occurs most often in men, a pronounced degree of emaciation is prominent; this is probably dependent in the first place on the very notable waste of gastric juice, which may amount to two liters or more per day, and secondly, to the serious interference with starch digestion. Another troublesome symptom is obstinate constipation, and the patients also complain of disagreeable sensations about the stomach, feelings of pressure and distention, belching, and sometimes severe pain. Nausea and vomiting are rare and the appetite may or may not be impaired. While a definite conclusion regarding the nature of the affection is not yet possible, Boas is inclined to consider it as a form of nervous dyspepsia. The prognosis is not unfavorable and the therapeutic indications are especially to increase the inadequate body weight, to correct the deficiency in starch digestion, and to avoid all agencies that may give rise to an increase in the gastric secretion. This can best be effected by a diet consisting largely of albumin, fat, and sugar. Fluids need not be restricted, and in fact the use of alkaline beverages is recommended. Atropin has not been found particularly useful, but Boas recommends the administration of alkalis, particularly the citrate of sodium, of which he gives a teaspoonful four times a day.

The Mechanical Action on the Body of Lowering the Atmospheric Pressure.—Jacobi endeavors by means of a number of models to demonstrate the manner in which the circulation responds to changes in atmospheric pressure such as are observed on passing from low to high altitudes. He concludes that there is a considerable dilatation of the pulmonary vessels, the veins, and the capillaries, so that blood is more or less stored in these districts. In consequence of this the patient is, as it were, bled into his own vessels and the blood-forming organs respond by producing an increased number of red corpuscles, and in this way the author endeavors to account for the increased number of erythrocytes and the high hemoglobin percentage observed as a result of sojourn at high altitudes.

Book Reviews.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Twenty-first Session, held at Washington, D. C., May 15 and 16, 1906. Volume XXI. Philadelphia: Printed for the Association, 1906.

IT is hardly necessary to attempt to point out the great interest and value of the series of papers that are here presented in collected form. So many contributions of importance are included among the fifty odd that were read before the last meeting of the Association of American Physicians, that it is difficult to make any selections for especial mention; but attention may be directed to the discussions of the subjects of blood pressure, pentosuria, the serum treatment of exophthalmic goiter, various blood diseases, and arteriosclerosis. The volume comprises a record of contemporaneous medical work of much significance, and embodies the opinions of many of the best known physicians in the country on problems of the deepest import.

KOSMETISCHE HAUTLEIDEN. Von Dr. S. JESSNER, Konigsberg i. Pr. Würzburg: A. Stubers Verlag (Curt Kabitzsch), 1907.

UNDER this title Jessner describes the treatment of such affections of the skin and its appendages as may be considered more particularly from the cosmetic standpoint. Accordingly, the little volume of 124 pages is distinctly practical in its subject matter, and may safely be recommended to all readers of German as an attractively written treatise on a subject on which the author is well qualified to speak with authority.

DES HAARSCHWUNDS URSACHEN UND BEHANDLUNG. Von Dr. S. JESSNER. Konigsberg i. Pr. Fünfte Auflage. Würzburg: A. Stubers Verlag (Curt Kabitzsch), 1907.

THIS is a brochure of fifty odd pages, containing the views of the well-known author on the causes and treatment of alopecia. Seven varieties of the affection are dwelt upon, and numerous prescriptions for local applications are given.

OBSTETRICS FOR NURSES. By JOSEPH B. DELEE, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, etc., Chicago. Second Edition, Revised and Illustrated. Philadelphia and London: W. B. Saunders and Company, 1906.

ALTHOUGH published but a comparatively short time, Prof. DeLee's book has won considerable favor. It conveys an excellent idea of the subject to the nurse, and may also be regarded as a helpful book to medical students about to undertake their practical work in midwifery; for, as the writer states in his preface, many of the duties of the nurse devolve upon the latter in their early years of practise. The book is divided in the usual manner into several parts, in which are considered the anatomy and physiology of the whole reproductive cycle, the conduct of pregnancy, labor, and the puerperium, and the pathology of pregnancy. There is no one part which can be picked out for particular comment; the subject is presented in clear, concise manner, and well illustrated by photographs which are of uniform excellence. The introduction constitutes an important part of the work, for it calls attention to the importance and value of proper obstetric nursing, a fact which it is difficult to get nurses in training to appreciate.

TEXT-BOOK OF COMPARATIVE GENERAL PATHOLOGY, for Practitioners and Students of Veterinary Medicine. By Prof. Dr. TH. KITT of Munich. Authorized Translation by Dr. W. C. CADBURY, Assistant Demonstrator of Pathology in the University of Pennsylvania. Edited with Notes and Additional Illustrations by Dr. A. J. SMITH, Professor of Pathology in the University of Pennsylvania. Chicago: W. T. Keener and Company, 1906.

THE need of a book such as the one here translated is evident, for the impressions gained from a work on pathology, which is framed primarily on the conditions found in the human body, are necessarily inaccurate and incomplete. The fundamental processes of disease are the same, no matter in what type of animal they occur, but the variations of the same type of lesions in different species may be sufficiently marked as to make a description based upon the changes met in any given animal confusing and inadequate. An extract from the preface will best explain another feature of the book. The latter reflects the tendency of modern pathological teaching to direct the thoughts of the reader along lines of pathological physiology, to make the student reason for himself from given anatomical data and appearances as to the necessary functional faults and failures. A book of this kind also possesses worth for the student of human medicine, for comparative pathology bears an intimate relation to the latter, and there is great need that experimentalists should be in the best possible position to appreciate the reactions peculiar to these experimental animals. The translation is good, though literal, but the illustrations are hardly on a par with those met with in most American text-books.

DIE TUBERKULOSE DER MENSCHLICHEN GELENKE SOWIE DER BRUSTWAND UND DES SCHADELS. Nach eigenen Beobachtungen und Wissenschaftlichen Untersuchungen. Von Prof. Dr. FRANZ KÖNIG, Berlin. Mit 90 Textfiguren. Berlin: Aug. Hirschwald, 1906.

THIS book is dedicated to v. Bergmann on the occasion of his 70th birthday by one of the foremost German specialists in bone diseases. It is divided into two parts, the first of which is concerned with a description of the pathological anatomy of joint tuberculosis, the knee joint being used as a basis for the presentation of the subject. The various forms of tuberculous arthritis and their clinical course are related in detail, and in conclusion the treatment is discussed, the author inclining to the idea that this must be mainly operative. He is not inclined to look with favor on the mode of treatment developed by Bier, and has frequently observed the formation of abscesses in such cases, and has also been compelled to resect joints which were treated in this manner by others.

In the special part of the book he takes up the discussion of tuberculous disease in the joints of the leg, the arm, the thorax, and the skull, in its pathological, clinical, and therapeutic aspects, and presents numerous statistical studies from his extensive clinical material. Although the book includes less than two hundred pages, it contains a wealth of material which will serve as an excellent manual for the student and a work of reference to the practitioner. For the latter it is of particular value as a means of aiding diagnosis and presenting the indications for operation. The radical treatment is usually favored at the expense of the conservative, but, considering the excellent results which have been attained by many with the latter, the writer's contention will probably not find acceptance by any means universal.

EXPERIMENTAL PSYCHOLOGY. A Manual of Laboratory Practice. By EDWARD BRADFORD TITCHENER. Volume II. Quantitative Experiments; Part II. Instructor's Manual. New York: The Macmillan Company, 1905.

THIS volume consists of a lengthy introduction on the rise and progress of quantitative psychology, and chapters on preliminary experiments, on the metric methods, on the reaction experiment, on the psychology of time, and on the range of quantitative psychology. As indicated in the title, it is a laboratory manual, and is intended for those engaged in teaching the subject.

THE TREATMENT OF DISEASES OF THE DIGESTIVE SYSTEM. By ROBERT SAUNDBY, M.D., M.Sc., LL.D., F.R.C.P., Professor of Medicine in the University of Birmingham; Senior Physician to the General Hospital; Consulting Physician to the Eye Hospital and to the West Bromwich Hospital. Philadelphia: J. B. Lippincott Company, 1906.

THIS book of 120 pages is based on the author's personal experience in treating diseases of the digestive tract. While the volume deals with the subjects under discussion in a pleasant and satisfactory manner, it contains little or nothing that cannot be found in any book on either Practice or Therapeutics.

THE DISEASES OF WOMEN. A Handbook for Students and Practitioners. By J. BLAND SUTTON, F.R.C.S. Eng., Surgeon to the Middlesex Hospital, and Senior Surgeon to the Chelsea Hospital for Women, and ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin., Surgeon to the Chelsea Hospital for Women, and Gynecologist to the Tottenham Hospital. Fifth Edition, with 129 Illustrations. London and New York: Rebman Company, 1906.

THE new editions of this well-known text-book appear with regularity and rapidity. The present volume is but little larger than its immediate predecessor; the new matter introduced deals with chorionepithelioma, extrauterine pregnancy, and tumors of the ovary, including an entirely new section on metastatic cancer of that organ. The authors have been unusually successful in their endeavor to compress all the established facts of gynecology within the compass of one volume of moderate size, and they have fully justified the statement made in the preface, viz., "We still believe that when surgical authors are able to restrain their vanity, and refrain from publishing notes of successful cases in text-books, the established facts of the art can be presented in a very convenient compass." Nothing of importance is omitted; there are numerous illustrations, all of a high order of merit, and the paper and press work are excellent. The arrangement of the subject matter differs from that adopted in most books, and the operative procedures are placed together, occupying the last eight chapters of the book. All of these features are to be commended, and as a handbook for the student or practitioner this volume will be particularly acceptable.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

206th Regular Meeting, Held December 7, 1906.

THE PRESIDENT, DR. T. MITCHELL PRUDDEN, IN THE CHAIR.

DR. W. GILMAN THOMPSON presented a case of muscular atrophy involving the muscles of the arms and shoulders, with marked tremor, but no sensory disturbances.

Dr. M. ALLEN STARR regarded the case as one of amyotrophic lateral sclerosis. He stated that in this disease the progress of the atrophy and paralysis was more rapid than in progressive muscular atrophy, and there was more constant and violent fibrillary twitching of the muscles. The entire arm was affected simultaneously, whereas in progressive muscular atrophy the atrophy ascended the arm and there was exaggeration of the knee jerks, indicating an affection of the lateral columns of the cord, as well as the affection of the anterior horn.

Dr. CHARLES L. DANA thought the case was one of amyotrophy of the Aran-Duchenne type.

A Case of Epithelioma of the Eyelid Treated with Radium.—Presented by Dr. ROBERT ABBE. The patient was a man forty-three years old, with an epithelial carcinoma of the lower eyelid extending from the inner canthus to nearly the outer canthus, only a quarter inch of mucous membrane remaining free. It measured one and one-eighth inches in length, and presented a solid growth a half inch in thickness and the same in depth, and involved the entire structure of the lid. Dr. Abbe showed colored plaster casts of the growth as it was before radium treatment was begun in June, 1906, and stated that a microscopic examination had revealed true carcinoma. Five applications of the strongest radium tube were made, of one hour each, and in two weeks improvement began. Progressive retrogression had followed, until now a small remnant only remained at the inner end. To this, after a five-months' interval, half-hour applications of radium had again been made, which it was hoped would be enough to complete the cure. Dr. Abbe said he had had six cases of epithelioma of the eyelid, all either cured or being cured, and it seemed to him to be a specific to be entirely relied upon in this type of disease. He also showed casts of the case of sarcoma of the eyelid exhibited at a meeting of the Society two years ago, which had remained entirely healed.

Neuralgia and Neuritis of the Arms and Legs.—By Dr. CHARLES L. DANA. (See page 297.)

Dr. EDWARD G. JANEWAY drew attention to the two types of what was considered lumbago. One was situated in the muscles of the back; the other was dependent upon disturbance of the lumbosacral joint. This was apt to be produced by standing bent forward for some time, especially in a cold place. Physicians, as a rule, took this for ordinary lumbago. It was apt to occur in those with gouty or rheumatic tendencies. The speaker said that in his experience the neuralgia of persons with angina pectoris was more apt to involve the nerves distributed to the little or ring finger than appeared to have been the experience of Dr. Dana. He alluded also to a case where there was intense pain in the right arm of a patient who died a week later, and in whom calcification and thrombosis of the right coronary artery and rupture of the interventricular septum was found.

Dr. BEVERLEY ROBINSON said he had found a special massage roller very useful in a case somewhat similar to those of cervical neuralgia described by Dr. Dana. The roller consisted essentially of a series of wooden balls about one inch in diameter, strung along a properly covered iron wire. At either end of the roller were handles similar to those of a pulley apparatus used by athletes. For cases of brachial neuritis, as well as for cases of this disease located elsewhere, he had found a compound of menthol, salicylate of methyl, and lanolin at times beneficial. This was rubbed gently into the skin and covered with a layer of absorbent cotton and a light gauze bandage. The first effect of the application was cooling, but in a few moments an agreeable and marked warmth followed locally. The ointment must not be used over an abraded surface, or it would occasion severe irritation.

Dr. V. P. GIBNEY said that one of the causes of neuralgia of the spine, especially the lower portion, was a displacement or a sprain of the sacroiliac joint. He had found the small tip of the Paquelin cautery a most efficient remedy in brachial neuralgia, and, contrary to expectation, the use of the cautery—small touches, not strokes—did not leave any scars. Numerous points touched faded out into a rich brown color, and gave to the shoulder, arm, or forearm the appearance of one exposed to the sun. For the neuralgia induced by piano playing, the treatment had, in his hands, been productive of most gratifying results.

Dr. ABBE said he would speak only of the phase of brachial plexus neuralgia referred to by Dr. Dana as sometimes hysterical. Ten years ago he reported some cases in which he had operated six and eight years previously for intractable neuralgia of the arm where previous stretching of the nerves followed by resection and finally amputation, had failed to relieve. He had then made an intradural resection of the posterior roots of the brachial plexus as they emerged from the cord (*Boston Medical and Surgical Journal*, October 1, 1896). Temporary relief seemed to be afforded, but these patients were still living, and had, to a moderate degree, the same evidences of pain. In all there had been a consensus of opinion that there was a considerable hysterical element that masked the value of pain as a symptom of disease or an index of the utility of operating by this method. Nevertheless, Dr. Abbe said, he would not hesitate to resort to this novel and beautiful method with some hope in a suitably defined case.

A Case of Ophthalmoplegic Migraine of Intermittent, Recurrent Type of Hereditary Origin.—Dr. M. ALLEN STARR reported this case. The patient was a young man whose mother had suffered from migraine and who had been subject to attacks of sick headache since the age of twelve. In connection with each attack of migraine for the past five or six years, the patient had a total third nerve paralysis on the left side lasting about five or six days, and disappearing either as the headache passed off, or perhaps lasting a few days longer than the headache. When he was first seen he had a typical third nerve paralysis, ptosis, immobility of the eyeball, with external strabismus and dilatation of the pupil. At the end of a week this condition had entirely passed off. Such an intermittent paralysis of the third nerve, Dr. Starr said, had been described by various writers, but it was a very rare condition, and was probably, in a majority of cases, due to an attack of migraine.

Dr. CHARLES STEDMAN BULL said he had seen two cases of ophthalmoplegic migraine, one in a man and the other in a woman. In both the left eye was affected. In both the attacks were irregular in their appearance, varying in frequency from three weeks to two months, and in duration from four days to one week. In every attack the first symptom was severe pain in the supraorbital and nasal branches, followed by sudden paralysis of all the branches of the third nerve, including those to the sphincter iridis and ciliary muscle. The secondary divergent squint was marked, and there was some puffiness of the upper lid. All treatment proved futile in both cases, though the neuralgia could be controlled by hypodermic injections of morphine. The attacks ceased as suddenly as they began, the pain first yielding, and then the ptosis began to disappear, the last symptom to disappear being the mydriasis.

Three Cases of Ureteral Calculus Detected by X-Ray and Successfully Removed by Operation.—Dr. ABBE showed three large calculi removed from the ureters of patients during the past year, after perfect Roentgen radiographs had located the position of each, which was exactly

opposite the third lumbar transverse process. The history of pain in each varied from two to eight years, and left no question but that they had been in the ureter during that time. A channel had been furrowed down the side of the two larger ones, explaining the absence of hydronephrosis. In one case there had been but one attack of hematuria, in another none, and in the third not even the centrifuge deposit of several urine specimens showed blood on the microscopic slides. This, the speaker said, was a surprise to him, as he had rather learned to look upon the detection of blood corpuscles in centrifuge specimens after pain as almost inevitable. Dr. Abbe said the method of operation in these cases was worthy of record. In each he had used his method of muscle separation, without cutting, with perfect satisfaction. This gave a strong scar, with no chance of hernia. After separating the three muscle layers, the finger quickly raised the peritoneum from the psoas muscle, and, the perureteral fat being exposed by tearing through its cellular sheath, the finger instantly detected the calculus in the ureter. It was removed through a longitudinal cut, which was sewn up by fine catgut. Another long piece of fine catgut was then caught into the psoas muscle, near the repaired ureter, and both ends passed up through a small rubber tube which was run down to the muscle, and there held by tying the outer ends over a pin transfixing the outer end of the tube. This was to be kept *in situ* to anticipate any need of drainage for two days, and the outer wound closed layer by layer around it. On the second day the tube was withdrawn, and on the following the catgut also. The patients all made a quick and perfect recovery.

Dr. Edward G. Janeway said that his experience did not warrant the certainty Dr. Abbe had in the radiograph. He had in mind the case of a priest who came to him from Pennsylvania with the clinical evidence of renal calculus, and that diagnosis was apparently correct. The patient then consulted surgeons, who had radiographs taken several times with negative results. In consequence of this, one surgeon, after a week's observation in the hospital, declined to operate. Another surgeon later operated, notwithstanding the failure of the *x*-ray diagnosis, and removed a large calculus.

Dr. George L. Peabody asked whether the attempt to get an *x*-ray photograph of a calculus was not sometimes unsuccessful, and expressed the opinion that in his own experience it had failed to aid in the diagnosis in a kidney in which surgery had subsequently demonstrated its presence.

Dr. Beverley Robinson said he noticed that in one of Dr. Abbe's cases there was no hematuria; in another, hematuria was noticed for the first time only three weeks before operation. These facts were interesting, because we were accustomed to regard hematuria as usually present when a stone existed in either the ureter or the kidney. Too much importance should not be attributed to *x*-ray findings in the matter of ureteral stone. Sometimes a shadow was found, and operation failed to reveal a stone; again, there was no shadow in the picture, and subsequently an operation might prove the presence of stone.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held January 10, 1907.

Dr. Godfrey R. Pisek in the Chair.

Case of Diabetes Insipidus.—Dr. Eli Long presented a boy, eleven years old, a son of a tuberculous parent, whose disease began with or followed an attack of measles eight years ago. He drank large amounts of water during the day and a couple of quarts during the night. He would not eat his breakfast without drinking two or more glasses of water. If water was refused him he would climb up and put his mouth under the faucet. His twenty-four hours' urine measured fourteen pints, or seven quarts, and often it was eight or nine quarts. The amount of urine excreted amounted to one-third his body weight. The specific gravity of the urine was from 1001 to 1002, and there was no sugar. There was some edema of the optic nerve on one side and a choroiditis on the other, probably syphilitic in origin. The mother had one miscarriage following his birth, and the father died of tuberculosis. The cough, bloody sputum, glandular enlargement all pointed to syphilis, or tuberculosis, or to both.

Case of Diabetes Mellitus.—Dr. Eli Long presented a girl, ten years old, who had a polyuria resulting from a fall. Three weeks ago, while skating, she fell and struck the back of her head. She since had lost much flesh, had wet the bed—a thing she had not done in five or six years. Her thirst had greatly increased, and she passed large amounts of urine daily. An ordinary chamber was filled during the night only. The specimen contained so much glucose that the chemist thought that there had been some error made, and asked for another specimen. A further and complete report would be made later.

Dr. Schwarz said that he had a case of a boy of twelve years under observation, who presented features of interest. The father died of cerebral hemorrhage, and he had always been very nervous. The mother had always been well. The child was exclusively breast-fed up to fifteen months of age. Even at this time the mother noticed that he would crave water; after taking two or three ounces of water he would then take the breast. There was a great deal of polyuria. When the child was three years old, the mother had to go out working, but could get no one to care for the boy, because he drank so much and wet the floors. He had a light attack of scarlet fever when five years old, and an attack of measles when seven years old. His general health had been good. His sight was good and he excelled at sports. The boy was first seen in August, 1905, when he weighed 66 pounds. He then passed 10,400 c.c. of urine in 24 hours. He passed 39 ounces at a time, and 344 ounces in 24 hours. On March 3 he passed 11,800 c.c. On a salt-free diet he passed 8,000 c.c. The urine had a specific gravity of 1,0025, and there was no albumin or casts, and the urea amounted to 310 grams in 24 hours. Hemoglobin was 85 per cent., red cells 4,800,000, and white cells 8,000. The question would arise in this case whether there was present simply a polyuria, or a polydipsia, or whether the condition was due to cerebral syphilis, trauma, or heredity.

Dr. Henry Koplik called attention to two cases he had seen with supposed diabetes insipidus; both ended up with cerebral growths.

Dr. Sara Welt-Kakels reported two cases of interest. One was a little girl, nine years old, who fell, and she believed her diabetes insipidus to be due to this injury. She passed from four to five quarts of urine daily. After having been under treatment for ten months, with great improvement, she one day came to the dispensary, and she could not open her eyes. Every branch of the motor oculi were paralyzed, and she had been taken ill with some meningeal trouble. The other case was a boy, six years old, who weighed thirty-six pounds, and who passed water in large amounts, the smallest quantity passed in twenty-four hours being 8,000 c.c. Both these children took so much fluid that there was little opportunity for taking nutritious food.

Dr. H. W. Berg said that many of these cases of so-called diabetes insipidus were due to causes other than cerebral or disease of the renal parenchyma. In one case that was supposed to be typical, the removal of a vesical calculus cured the condition. In another case the removal of an enlarged prostate cured the polyuria. Many of these cases of diabetes insipidus were due to peripheral irritation, and the general practitioner should be cautioned against looking upon it as an entity.

Two Cases of Visceral Syphilis in Children.—Dr. SARA WELT-KAKELS presented these cases.

The first case was presented to the Section two years ago. (See MEDICAL RECORD, Vol. LXVII., page 355). At present the hemoglobin (Dare's hemoglobinometer) was 64 per cent., red cells 4,460,000, and white cells, 13,200. The differential count showed the polynuclears 61 per cent., small lymphocytes 28 per cent., large lymphocytes 10 per cent., eosinophiles 1 per cent. The color index was 0.71. The child had been placed on intramuscular injections and had made considerable improvement.

The second case was that of a boy over three years old, whose parents were healthy, and with no luetic history. The present illness began five months ago, when he lost his appetite, had some fever, cough, and profuse perspiration, disturbances of digestion, profuse diarrhea, was losing flesh, etc. When first examined the child was very cachectic, moaning and crying when touched, especially when the abdomen was palpated. The skin and mucosæ were pale. The superficial lymphatics were somewhat enlarged. The rectal temperature was from 101° to 103°. The abdomen was moderately protuberant and the superficial veins markedly distended. There was no ascites. The liver occupied the greater part of the abdominal space, its surface was hard and uneven, with rounded and thickened border. The left lobe did not participate in the great increase in size of the liver. The surface of the spleen was even and hard, and the lower border projected about two fingers below the free border of the ribs. There was diarrhea, and the stools contained fibers of meat and undigested vegetable matter. The red cells numbered 3,580,000, the white cells 26,600, hemoglobin 46 per cent., color index 0.69. The differential count showed polynuclears to be 51.5 per cent., large mononuclears 37.5 per cent., the small mononuclears 2 per cent., eosinophiles 3 per cent., and no mast cells. Intramuscular injections of mercury produced the most marked improvement, so much so that the mother regarded the child as a healthy one. Intramuscular injections of bichloride of mercury were given three times a week.

A Case of Apyretic Pneumonia.—Dr. A. L. GOODMAN reported this case. The patient was a girl eight years old, who, while attending to her regular school duties, was troubled with a short dry cough of a very persistent character. The mother took the temperature, and found it normal. On the third day from the commencement of the cough, Dr. Goodman saw the patient. The temperature during the three days varied from 99.2° to 99.7° F., and the mother's thermometer corresponded with his. The patient had a frequent, short, dry, cough. The throat examination was negative. The respirations were 24, and painless. The left side of the chest on percussion was normal, and the breathing sounds were somewhat exaggerated. The right side of the chest, almost from the base to the apex, was dull; the breathing sounds were distinctly bronchial in character, with very few friction sounds. The vocal fremitus was markedly increased. There was no pain, the child's only discomfort being the persistent cough, which disturbed her rest day and night. The temperature and respirations were noted every three hours. The respirations varied between 24 and 28. The pulse rate ranged from 88 to 100. The treatment consisted in mild stimulation and rest, plenty of air, and the usual other hygienic and dietetic procedures adopted in acute lobar pneumonia. The physical signs diminished day by day, and on the eighth day the temperature registered 98.6°, and after that remained normal. On the twelfth day all the physical signs of consolidation were gone and the cough also disappeared. There was no history of syphilis or tuberculosis in the family.

Enlargement of the Epitrochlear Glands in Infants.—Dr. ALFRED F. HESS read this paper. He said that the data of which he made use were gathered in the course of examination of dispensary patients of two years of age and under, who were treated for various ailments, chiefly for errors in diet. They numbered 225. He was surprised to find how few babies had no superficial glandular enlargements, there being found but six among the 225 cases; of these, four were well nourished and two poorly so. Considering certain facts, it seemed to him that they should not continue to attribute all these lymphatic enlargements to minute lesions of the skin, for instance of the scalp, but must regard them as frequently physiological to infancy. Among the 197 cases in which posterior cervical glands were searched for, they were found 173 times. These enlargements he believed to be due to lesions of the scalp or pharynx, to be partly of congenital origin, and to a small degree to systemic infection. The glands next in order were the inguinal, and they were enlarged in 119 cases out of 147 examined. Circumcision appeared to play no part. In infants, as well as in older children, the submaxillary and anterior cervical were frequently palpable. Enlargement of the axillary gland was of a common occurrence. Of all the superficial glands, enlargements of the epitrochlear was the most exceptional. Besides the 225 cases referred to, he also examined 75 more for the presence of epitrochlear glands. Of these 300 cases numerous infants were found to have one enlarged epitrochlear gland, but no importance was attached to this unless this was large. Minute bilateral glands were found to be very common, and were found in twenty-six cases. Large bilateral glands were found, however, in only fifteen of the 300, and six of these patients had syphilis, two of them being only seven weeks old. One had an enlargement to the size of a marble. Of the remaining nine cases, three were probably syphilitic; one had a large liver and spleen, and the mother gave a history of two miscarriages; the mother of the second had had three miscarriages, and eight children died in infancy; the third child had snuffles since birth. Of the six remaining cases with large epitrochlear glands, two had tuberculosis with general glandular involvement, and one had furunculosis of long duration. He was unable to state the cause of the enlargement in the other three cases. Possibly syphilis might play a rôle in these also. However, the fact that bilateral enlargement occurred so rarely in infants, and proved of syphilitic origin in the majority of cases was certainly a striking fact. These figures could not be applied to older children. Since he had paid particular attention to the epitrochlear glands he had been given an opportunity of examining fifteen cases of hereditary syphilis in infants. Seven of these had large bilateral epitrochlear glands, in four they were small, in three they were not palpable. Dr. Hess wished especially to emphasize the fact that all symptoms of syphilis might disappear under the mercurial treatment, but the epitrochlear glands might persist as the sole objective symptom of the disease. Therefore, in some cases only a routine examination for these glands would reveal, or even suggest a previous infection. The presence of an enlarged spleen, associated with large bilateral epitrochlear glands, occurring in an infant, was good evidence of syphilis. In summing up his estimation of the value of epitrochlear glandular enlargement, he stated that its importance was not as an early sign of hereditary syphilis, that its absence by no means cast doubt upon the diagnosis, but that its presence might serve for a long period as the sole landmark of previous infection.

A Clinical Study of Congenital Syphilis.—Dr. W. B. JENNINGS read this paper. He said that when one considered the annual infant mortality of New York City in children, one year old or under, was more than 16,500, and out of that number only 78 reported deaths from specific disease, one would naturally conclude that the latter disease was not a common one or particularly fatal. But his experience taught that this was not so. During the year 1905 there were reported to the Health Department 169 abortions, 3,903 "congenital debility," premature birth, preternatural births, together with malformations and marasmus under three months of age, and 6,352 still-births. Considering these cases, he thought it was reasonable to suppose that in a large per cent. death was due to specific disease. Dr. Jennings had a series of 65 cases of specific disease,

all under one year of age, all seen from time to time during the past three years. There were 33 males and 32 females. A positive family history of syphilis was obtained in 25 cases, the greater number giving a paternal infection. From a table given, it was shown that the greatest number of cases in this series were only one month old or under, the second and third months of age being the next most frequent. This corresponded to the observations of Miller of Moscow, and Holt of this country. As a rule, if pemphigus was not present at birth, it would appear within forty-eight hours, if it appeared at all. Pemphigus appeared in 5 per cent. of his cases, and all had bullæ on body and head, as well as the hands and feet. Snuffles was one of the most common symptoms, and persisted for a long time. The skin eruptions might be described as syphilitic dermatitis, not unlike erythema intertrigo, except that there was a marked desquamation. It was most commonly seen around the genitals and buttocks, and inner sides of the thighs; it often extended over the abdomen, as well as the extremities. Macules, papules, superficial ulcers, and condylomata were the forms of eruption most frequently met with. Ulcers and fissures of the lower lip and mucous patches in the mouth were also present. The hair was affected in but a few cases. One case had an apparent paralysis of the soft palate, together with a laryngitis. In only one case was any joint affected. One or two cases of dactylitis were seen. Fully 40 per cent. of the cases were well nourished. In children over six months old there was often a delayed dentition. Marasmus was present in about 6 per cent. of the cases. Rachitis was present in two or three cases, and in one case, a child of nine years, a diagnosis of gumma of the liver was made. The glands enlarged were, in order of frequency, the inguinal, cervical, axillary, and epithrochlear. Porrot's nodes were not observed in one case. The prognosis was unfavorable if the child was without treatment; they all responded rapidly to treatment, mercurial inunctions. Gray powder given internally was of value; if it caused diarrhea Dover's powder was added. The black wash was used for the snuffles.

Dr. Henry Koplik emphasized the importance of not placing much value on enlargement of the lymph nodes, unless accompanied by certain symptoms. If one met with an extensive eruption apparently syphilitic, enlargement of the lymph nodes was quite significant. Dr. Koplik said he would not make a diagnosis of syphilis merely on the enlargement of the epitrochlears. After years of study he believed that *per se* enlargement of the lymph nodes was of little diagnostic value when unaccompanied by other clinical symptoms.

Dr. H. W. Berg said that Dr. Fessenden Otis, as far back as 1881, would never allow a clinic to pass in which he showed syphilitic patients without calling attention to the fact that the epitrochlear glands were enlarged in syphilis, and he ascribed so much importance to such enlargements in the diagnosis of syphilis that he went to the other extreme and considered such enlargements as almost pathognomonic of syphilis, in which, of course, he was wrong. Enlargement of the epitrochlears meant the suspicion of syphilis.

Dr. A. Rose said that in December, 1900, Hochsinger described an affection which he named hereditary syphilitic phalangitis, the first ever given. Within twenty-five years he had collected fifty-five cases. The reason there were so few on record was, first, omission of exact examination, and, secondly, difficulty of recognizing the symptoms in some instances. This phalangitis was more frequently found on the fingers than the toes. Hochsinger preferred the name phalangitis to that of dactylitis because the disease was exclusively an osteitis. It was a typical and characteristic manifestation of hereditary syphilis, and began at the proximal phalanges. Hochsinger found, by means of the Roentgen rays that the osteitis began at the borders of the bone and cartilage, not only in the phalanges, but in the metatarsal or metacarpal bones when they were simultaneously affected in phalangitis hereditosyphilitica. The characteristics were: the predominance of the affection of the proximal phalanges, the absence of suppuration or perforation outward, inclination to spontaneous restitution and the subacute course of the disease, the absence of pain during its development. The proximal end of the proximal phalanx where the osteitis began became enlarged, giving the finger a bottle-shaped appearance, the fingers becoming broader and longer. The soft parts did not participate, only the skin being stretched became thinner, was shiny and rose colored. The affection was multiple, but not symmetric. The joints remained intact. Hereditary syphilis affecting the fingers after the first year of life, as a rule, did not show the same characteristics; here caries might set in, as also arthritis and participation of the soft parts. Hereditary syphilitic phalangitis in infants was one of the best accessible forms of hereditary syphilis to therapy. Local treatment was not required. General antisyphilitic means would accomplish complete and permanent cure within six to ten weeks.

Dr. Schwarz said that what Dr. Jennings had stated regarding pemphigus was equally true of pemphigus neonatorum, and in this latter form the fluid removed from the blisters would show eosinophile cells which were not present in the other form.

Dr. Sidney V. Haas said that after investigating the importance of enlargement of lymph nodes in babies at the Vanderbilt Clinic, he had given up in despair, finding them to be the regular thing, and of no particular diagnostic value.

Dr. Henry W. Hale, Jr., said that the treatment depended somewhat on the time of the infection. The more recent the infection, the more severe were the cases, and they required intramuscular injections, not responding so well under the ordinary methods.

Dr. Henry Heiman recalled some cases where the ordinary method of treatment failed, and which required intramuscular injections. The more recent the infection, the more severe the symptoms, and the more energetic treatment was then required.

Dr. Charles N. Dowd said that the cases he saw were late ones, and in the older children the bone lesions predominated, particularly those of the tibia. Joint lesions were occasionally seen. Dr. Dowd said he had been looking for years for a case of enlarged cervical glands due to syphilis, so large as to require surgical interference. He had failed to find but one case.

Dr. Henry W. Frauenthal said that these glands might have been syphilitic, but that it was the tubercular infection which caused their breakdown.

Dr. Dowd thought that Dr. Frauenthal was correct, and he was not sure that the case he referred to was not one of tuberculous lymph nodes in a syphilitic child.

Dr. B. Lapowski said that in 90 per cent. of the cases injecting the liver of a syphilitic into an ape would inoculate that ape. When certain spirochetes were found the diagnosis was positive. He never relied upon intramuscular injections of mercury in the treatment of syphilis; he never failed if treatment was carried out by inunctions properly given.

Dr. Hess, closing the discussion, said that enlargement of the epitrochlears, to be of any value, should be bilateral. Again they should not be too small. The cases Dr. Otis showed in 1881 were cases of acquired syphilis, and not congenital, to which his paper referred.

Dr. Jennings closed the discussion.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held January 24, 1907.

Dr. Howard C. Taylor in the Chair.

An Unusual Specimen of Tubal Gestation. Dr. H. Grad presented this specimen, which showed very nicely the amnion and chorion. Ectopic gestation was not diagnosed at the time. She was seen two weeks after a sup-

posed abortion, and a retroverted uterus was found. When the patient was placed under ether, lifting the uterus into position revealed this mass in the pelvis. The abdomen was opened and the unruptured ovum was found in the pelvis and among blood clots.

Specimen of Cyst of the Vagina.—Dr. H. GRAD presented this rare specimen. He had not time to determine just what variety of cyst it was. He would attend to this and report on it later. In all probability the cyst was due to occlusion of the duct of one of the vaginal glands.

Vaginal Hysterectomy for Septic Peritonitis Following an Artificial Abortion.—Dr. ABRAM BROTHERS reported the case of a woman, aged 33, the mother of two children, who skipped her usual menstrual period by two weeks. She visited a midwife, who introduced a catheter into the uterus. This was associated with much pain, and was followed by uterine bleeding and fever. The family physician was called, and she was found to have a temperature of 104° F., and he at once proceeded to curette her and wash out the uterine cavity. This was followed by a drop in the temperature to 101°, with a pulse of 90. Dr. Brothers saw her at this time, and found an area of local peritonitis behind the uterus, for which he ordered rest, ice, and opiates. The prognosis seemed to be favorable. After the lapse of 36 hours he was called in great haste at night to meet the family physician, who was greatly alarmed at her condition. In spite of large and continued doses of opium and the constant supervision of a trained nurse, the peritonitis rapidly spread and the woman was evidently suffering intense pain, which kept her continually moaning and shrieking. The temperature and pulse became markedly increased and the abdomen greatly distended, and was the seat of exquisite tenderness. The woman was hurried to the Beth Israel Hospital and was operated on at 2 o'clock in the morning. On opening the posterior cul-de-sac a little accumulation of pus escaped. Under the impression that the uterus had been perforated by the catheter, which was under the circumstances in an infected condition, he did a rapid vaginal hysterectomy with clamps, draining the peritoneal cavity with gauze. The temperature at once dropped and the patient went on to complete recovery. No perforation of the uterus was discovered.

Laparotomy for Infected Ectopic Gestation.—Dr. ABRAM BROTHERS reported the case of a woman who gave the history of irregular bleedings, cramps, and sensations of faintness. A local examination revealed an enlarged uterus, but apparently nothing more. A curettage without anesthesia was ordered and performed by the house surgeon, who neglected to have the scrapings examined. Several days later she complained of slight pain in the right iliac region, and the chart showed a low grade of temperature. Examination revealed a small mass in the right pelvis, which was diagnosed as a parametritis. Nothing was felt in Douglas' cul-de-sac. At the end of two weeks, in spite of ice and rest, the mass increased in proportions rather rapidly, and, suspecting a purulent process, operation was advised. She was anxious to go home, as her general condition was not bad. The presence of a low grade of temperature, with accelerated pulse, induced them to insist on her remaining, and finally, three weeks after the curettage, she was induced to submit to operation. Laparotomy with exsection of the umbilicus was done. No free blood was present in the peritoneal cavity. The right-sided mass was glued to the omentum and anterior abdominal wall. During the manipulation to isolate the tumor there was a sudden gush of pus of chocolate color. The tumor was shelled out of its adhesions and removed. Within the peritoneal cavity it seemed to have the diameter of an ordinary sized baseball. The abdomen was closed to the lower end of the incision, where a small drain was left. Recovery was uneventful. On splitting open the tumor a small amniotic sac was opened, and within it a tiny embryo was discovered.

Dr. HOWARD C. TAYLOR recalled a case similar to the one reported by Dr. Grad, in which he curetted for a supposed miscarriage. After three weeks he opened the abdomen and the fetus was found. The woman had been bleeding slowly and lost much blood, and was very anæmic, but at no time did she develop an hematocele.

Dr. HERMAN J. BOLDT confessed that ten years ago he knew more about the diagnosis of ectopic gestation than he knew to-day. It had occurred to him many times that a patient presented herself with the typical symptoms of ectopic pregnancy, and he would open the abdomen only to find a suppurating tumor. Especially in pus cases was one liable to trip up on in diagnosis. He recalled one case that Dr. Brothers had seen, and which he subsequently saw two or three times, with the impression that the slight atypical bleeding that was present was caused by a postpuerperal endometritis following an abortion. One morning he was called, and made a diagnosis of ectopic, and the patient was subsequently operated on for ruptured tubal gestation. Dr. Boldt said that there were cases where it was absolutely impossible to make a diagnosis. In those cases where one suspected a tubal gestation he advised operating at once, and not waiting.

Dr. GEORGE H. BALLERAY, discussing Dr. Brothers's case, said that in his opinion it was a difficult matter to say when to do an hysterectomy in cases of septic uteri, especially when following an abortion. It was a very difficult matter to formulate any rules for these cases.

Dr. HERMAN J. BOLDT said that it was absolutely impossible to formulate any rules. But where there were evidences of a septic peritonitis, or a general sepsis going on post-puerperal, and where he knew the interior of the uterus to be free from débris, and nothing was to be seen that caused the septic condition, with the patient not getting better in a short time, running temperature of 103°, 104°, or 105°, even if there were no positive evidences from the blood examination that usually meant enlarged and relaxed uterus, in other words, the source of infection in the uterus, the quicker that uterus came out the better. The matter, though, almost always must be left to individual judgment.

Four Specimens of Myofibromata Uteri.—Dr. HERMAN J. BOLDT presented these specimens. The interesting clinical feature of the first tumor was that upon examination it was so soft that several physicians made the diagnosis of an ovarian cyst, although there were irregularities in the menstrual flow, this occurring at intervals of from eight days to three weeks, but only of from three to four days' duration. A steady increase in size of the abdomen had been observed for the past five years. The pathological features of interest were that the center of the tumor showed evidences of degeneration, although not indicative of malignancy. The degenerative change caused the softened condition of the neoplasm. The ovary contained a hematoma, and the ovarian stroma showed fibroid degeneration. The endometrium was fairly normal. The tube walls were atrophic, but their mucosa was normal.

The chief clinical symptom giving rise to the indication for operation in the second case was the existence of constant pain in the lower abdomen for the past four weeks. In addition there were present symptoms of myocarditis. On microscopical examination of the tumor there was slight increased proliferation of the blood-vessels about the periphery, but few blood-vessels in the center of the tumor. Both tubes and ovaries were enlarged, thickened, congested, covered with adhesions and matted matter together. The tubes were thrown into nodes, particularly on the left side, as thick as a lead pencil, and forming a pipe-bowl shape, with the ovaries at the distal extremities. The ovaries were dilated into pus sacs; the broad ligaments were thickened, congested, and board like. It was evident that the chief symptoms were caused by the ovarian abscesses.

The pathological features presented by the third speci-

men were that the interior of the uterus was much enlarged and lined by a thick succulent mucous membrane. The endometritis fungosa caused the atypical bleeding. In some areas the blood-vessels in the mucosa were numerous and much thickened. The blood-vessels in the uterine wall, however, were normal.

The clinical features of the fourth specimen were that the tumor was wedged tightly into the pelvis because of its intraligamentous development on the left side. Pathologically, the tumor was beginning to show degenerative changes in some parts, there being edema present around these areas. The nuclei of the cells did not take the stain, and these and some of the cells were disintegrated. The glandular elements in the mucosa were increased.

Limitations of the Surgical Treatment of Uterine Fibroids.—Dr. Henry C. Coe read this paper. He said that few subjects had been more discussed than that of the surgical treatment of uterine fibroids. His text was furnished by no less than six patients with uterine fibroids, who came to his office within the last fortnight, all of whom had been advised to undergo a radical operation, but Dr. Coe advised against operation. In every instance the so-called tumor was not larger than a small orange, and caused no symptoms, such as pain, pressure, menorrhagia, and was, from his point of view, simply of clinical interest. And yet, these women had been advised to have their uteri removed, even though they were in the prime of life. He wished to call attention to one fact, that confidence on the part of the operator had led to too radical views in dealing with uterine fibroids. He stated that the mere presence of a fibroid was *not* an indication for operation. Excluding cases of fibroids in which the indications, pain, pressure, profuse hemorrhage, steady increase in the size of the neoplasm, evidences of degeneration, complications (local and general), etc., were so clear that the majority of operators would advise operations, he said that he would consider only the class of cases in which there were small interstitial growths, with few if any symptoms, not affecting the general health; in short, these cases which caused the patient no discomfort or disquietude until she had been indiscreetly told that she had a "tumor" He earnestly desired to throw his influence in favor of a higher type of practical gynecology, of a mutual confidence, not only between the specialist and the general practitioner, but between the doctor and his patient He asked why the mere presence of a small uterine fibroid impelled the examiner to inform the patient hitherto in blissful ignorance, but also to advise operation? He found that most of his patients, whom he passed as not requiring even medical treatment, were told that the "tumor would grow," that "it would become malignant," that "it would give trouble at or after the menopause," or the argument had been advanced that the patient had a neoplasm, ergo, it must be removed. It not infrequently happened that he could find no tumor, simply a large hyperplastic or asymmetrical uterus. It behooved the general practitioner to be *sure* that the patient had a tumor before he informed her of this fact, or advised an operation, for once the fatal words had escaped his lips, all the specialists whom she consulted afterwards could not convince her to the contrary. He asked what was the clinical history of the case, and had she any symptoms referable to the increased weight of the uterus, vesical or rectal irritation, displacement of the uterus, interference with the normal function of the pelvic organs? Dr. Coe had been watching many patients from ten to fifteen years with small fibroids, who had never complained of such disturbances. He said he was far from commending the ultra conservative views of those who believed that a patient should be tided over the period of menorrhagia preceding the climacteric under the mistaken idea that the tumor would "disappear" after that time. He did not remember a case in which the fibroid had entirely disappeared after either a natural or artificial menopause, though he had seen it diminish in size and all troublesome symptoms vanish. The whole question of the treatment of uterine fibroids turned on the question of the proper recognition of the variety, the size and sypmtoms caused by the tumor. It was a reproach to their diagnostic and clinical experience if they jumped at the conclusion that surgical treatment was indicated simply because they happened to discover a tumor.

Dr. Herman J. Boldt said that the section was to be congratulated on having had presented to it such an admirable paper on conservatism, and he wished to indorse all except one statement, namely, the question of curettage in cases of myomata. With that exception he endorsed all Dr. Coe had said. He saw no use in removing a uterus, or even operating, when there was simply a fibroid present, especially when it was of small size. If there was an ovarian tumor present, that was a different thing.

Dr. Egbert H. Grandin said that he was entirely in agreement with the statements made by Dr. Coe. He believed that every man with any surgical experience would agree that the mere fact that there was a tumor present was not sufficient justification for its removal. All knew that there was a certain period of a woman's existence when a small fibroid might never become anything more, but they should be able to differentiate surgically their cases. Dr. Grandin said he had used the various methods of treating fibroids. He had been an advocate, and a consistent one, too, of the use of electricity in the treatment of uterine fibroids. He admitted that he had used all kinds of methods, and simply because those who taught him did not know better themselves. Having divested himself of the obsolete methods he had now reached a definite conclusion, as follows: Any fibroid that gave rise to symptoms was a surgical fibroid; if it did not give rise to symptoms, why should any woman then come to him to find out what the matter was? The smaller the fibroid, the less operating, the less strain upon the kidneys and heart, the less size of incision, the greater chance for recovery, the less chance of having an anemic heart, which was associated with increased growth of the fibroid, and, therefore, more hemorrhage. The only class of fibroids that Dr. Grandin feared was the big hemorrhagic ones with the anemic heart, and the tendency to death from so-called shock, etc. The mortality rate from small fibroids which gave no symptoms should be nil; from the large hemorrhagic fibroids it was often 10 per cent. That was his experience. If one let a post-operative fibroid case, hemorrhagic in type, out of bed in three days, there was danger of pulmonary embolism. Whenever a woman had a fibroid which gave rise to symptoms, that fibroid was bound to grow. With regard to the route, any fibroid which could be made to enter the pelvis should be removed by the vaginal route, if one was sure there was no disease of the appendages or of the appendix. Any tumor which could not be made to enter the superior strait above the brim, or where there was a coexistence of tubal or appendical disease, the only route was the one above.

Dr. George H. Balleray said that he decidedly favored conservatism in these cases, and he even went further than Dr. Coe The only indications for the removal of these fibroids were pain, hemorrhage, and rapidly increasing growth of the tumor. Kelly, in his book, had emphasized the fact that the mere presence of a tumor did not indicate the performance of an operation. The conscientious practitioner should show before operating that the tumor was a menace to life or incompatible with the woman's comfort. Fibroids that were not causing symptoms should not be removed. He said he could not plead too strongly for condemnation of this surgery. Such cases as Dr. Coe referred to should not be operated on. Dr. Coe said the statement that tumors or myomata of the uterus would disappear after the menopause was nonsense. But Dr. Balleray had seen such cases that caused such hemorrhage that the patient was tamponed and placed in bed. After a while the tumor ceased growing, and the tumor later disappeared during a retrograde metamorphosis. For that reason he believed that if a woman could safely be carried past the

menopause it should be done. He had known of cases where, after the menopause, the tumors disappeared. He, therefore, condemned what he called unnecessary operating. There might be in some cases a reasonable doubt as to what should be done, and then two men might differ.

Dr. MALCOLM MCLEAN wished to endorse all that Dr. Coe had stated. Certain of these growths were as harmless as a wart on the hand, and no one had any right to remove them when no symptoms were referable to them. Dr. Coe would operate upon those cases if they presented symptoms. If a woman had a small interstitial fibroid she should not consult a surgeon who was willing to mutilate her. He wished to emphasize one point in distinguishing between those cases that should be operated upon and those which should not be. He told his patients that he wanted to see them every three months. When they returned he made careful examination; if he found the tumor was growing, he had them return at a shorter interval; then if he found they still continued to grow, he warned them that an operation was going to come. With regard to malignancy, in all his experience he had seen but one fibroid which apparently degenerated into sarcoma or malignant disease.

Dr. Coe closed the discussion.

Some Further Notes on the Use of Rubber Bags for Dilating the Parturient Cervix.—Dr. RALPH POMEROY showed these bags.

Drs. POLAK and MCLEAN discussed them.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

ELEMENTS OF PRACTICAL MEDICINE. By ALFRED H. CARTER, M.D., M.Sc. Ninth Edition. 12mo, 614 pages, muslin. H. K. Lewis, London.

THE BACTERIOLOGICAL EXAMINATION OF WATER SUPPLIES. By WILLIAM G. SAVAGE, B.Sc., M.D. (London), D.P.H. 8vo, 207 pages, illustrated, muslin. H. K. Lewis, London.

A MANUAL OF PATHOLOGY. By GUTHRIE MCCONNELL, M.D. 8vo, 523 pages, illustrated, flexible leather. W. B Saunders Co., Philadelphia. Price, $2.50.

A MANUAL OF NORMAL HISTOLOGY AND ORGANOGRAPHY. By CHARLES HILL, Ph.D., M.D. 12mo, 462 pages, illustrated, flexible leather. W. B. Saunders Co., Philadelphia. Price, $2.00.

ATLAS AND TEXT-BOOK OF DENTISTRY, INCLUDING DISEASES OF THE MOUTH. By GUSTAV PREISWERK, M.D., Ph.D., 12mo, 343 pages, illustrated, muslin. W. B. Saunders Co., Philadelphia. Price, $3.50.

MATERIA MEDICA FOR NURSES. By EMILY A. M. STONEY. Third edition, thoroughly revised, 8vo, 300 pages, muslin. W. B. Saunders Co., Philadelphia. Price, $1.50.

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Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 16, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	356	191
Diphtheria	282	52
Measles	248	6
Scarlet Fever	263	21
Smallpox	12	—
Varicella	91	—
Typhoid Fever	42	12
Whooping Cough	52	6
Cerebrospinal Meningitis	13	13
Malarial Fever	...	..
Totals	1349	301

Pyloric Stenosis Consecutive to the Absorption of Caustics.—Quénu reports the following case: A woman forty-six years old swallowed a concentrated solution of hydrochloric acid. She was taken with acute pain and vomiting. Alimentation became impossible. She became emaciated and entered the hospital six weeks after the accident. Nutrient enemata kept her alive. Quénu determined to practice gastroenterostomy. Chloroform was administered after an injection of serum had been given. The pulse stopped. An incision was made in the diaphragm in order that the heart might be massaged, but the patient succumbed. Autopsy did not reveal severe gastric lesions, but there was a marked stenosis of the pylorus through which a probe could sarcely be passed. This stenosis developed very rapidly, as only six weeks had passed since the time of the accident. In the region of the pylorus the mucosa had disappeared.—*Gazette des Hôpitaux Civils et Militaires.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 15, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Connecticut, Stamford	Jan. 1–31	1	..
Georgia, Augusta	Jan. 29–Feb. 5	2	..
Illinois, Galesburg	Jan. 26–Feb. 9	26	..
Indiana, Indianapolis	Jan. 27–Feb. 3	3	..
La Fayette	Feb. 4–11	6	..
South Bend	Jan. 26–Feb. 9	5	..
Iowa, Clinton	Jan. 27–Feb. 3	1	..
Kansas, Kansas City	Feb. 2–9	1	..
Louisiana, New Orleans	Jan. 28–Feb. 4	3	2 Imp't'd
Michigan, Detroit	Feb. 2–9	2	..
Kalamazoo	Jan. 26–Feb. 2	2	..
Missouri, St. Joseph	Jan. 26–Feb. 2	30	..
St Louis	Jan. 26–Feb. 11	3	.
New York, New York	Jan. 26–Feb. 9	3	1
South Dakota, Sioux Falls	Jan. 26–Feb. 2	2	..
Texas, Houston	Jan. 12–Feb. 2	11	..
Washington, Spokane	Jan 19–Feb. 2	11	..
Wisconsin, La Crosse	Feb. 2–9	1	..
Milwaukee	Jan. 19–Feb. 9	14	..

SMALLPOX—FOREIGN

Africa, Cape Town	Dec. 15–22	1	..
Brazil, Pernambuco	Dec. 15–31	..	48
Rio de Janeiro	Dec. 30–Jan. 6	1	..
Canada, Sherbrooke	Feb. 9	4	..
China, Hongkong	Dec. 1–22	4	3
Shanghai	Dec. 23–30	1	..
France, Paris	Jan. 12–19	14	1
Great Britain, Hull	Jan. 12–19	2	..
India, Madras	Dec. 15–21	..	2
Netherlands, Rotterdam	Jan. 19–26	5	..
Russia, St. Petersburg	Dec. 27–Jan. 12	6	3
Spain, Seville	Dec. 1–31	..	40

YELLOW FEVER.

Africa, Senegal and Niger	Nov. 1–30	35	26
Mexico, Vera Cruz	Feb. 8	1	Imported

CHOLERA.

India, Bombay	Jan. 1–8	..	4
Rangoon	Dec. 22–29	..	23

PLAGUE.

Brazil, Pernambuco	Dec. 15–31	..	1
Rio de Janeiro	Dec. 30–Jan. 6	20	5
India, Bombay	Jan. 1–8	..	26
Rangoon	Dec. 22–29	..	23
Peru, Callao	Jan. 5–12	2	1
Chiclayo	Jan. 1	5	3
Mollendo	Jan. 1	..	1
Paita, City and vicinity	Jan. 1	6	1
San Pedro and Pacasmaye	Jan. 1	10	4
Trujillo	Jan. 1	14	5

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Original Articles.

INFLUENZA IN ITS RELATION TO DISEASES OF THE NERVOUS SYSTEM.*

By JOSEPH COLLINS, M.D.,

NEW YORK.

PROFESSOR OF NERVOUS AND MENTAL DISEASES AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, VISITING PHYSICIAN TO THE CITY HOSPITAL; NEUROLOGIST TO MONTEFIORE HOME, CONSULTING NEUROLOGIST TO THE HOSPITAL FOR RUPTURED AND CRIPPLED, AND TO THE MANHATTAN STATE HOSPITAL, WEST.

The bacillus of influenza and the poison engendered by its active existence in the body, have a peculiar capacity to disorder the functions of the nervous system, and to cause pathological changes in its central and peripheral portions. The truth of this has been especially recognized since 1890, *i.e.* since the occurrence of the last epidemic of influenza in this country and in Europe. To convey an idea of the literature that has been created setting forth the nervous sequelæ of influenza, it may be stated that the references alone to the subject take up five closely printed pages of nonpareil type of the Index Medicus. There is scarcely a disease, functional or organic, of the brain, cord, or peripheral nervous system, that has not had its causation attributed to influenza, and I may add, in many instances, quite improperly. One does not attribute acromegaly to an occasional inebriation, especially if the symptoms do not develop for some time after the indulgence. No more should conditions of absolutely unknown causation, such as paralysis agitans, or of fairly well-known origin, such as exophthalmic goiter, be attributed to an attack of influenza, out of which apparently flowed no symptoms whatsoever save those of the infection, and which terminated in recovery.

The period during which influenza has been studied scientifically corresponds to that of my special interest in nervous and mental diseases. When it first prevailed I was in active general practice, but soon after that began to see nervous disorders in one of the large clinics of this city. Since that time, and particularly during the past ten years, I have had opportunity to study nervous diseases, which has permitted me to gather the records of upward of ten thousand patients, personally examined. It is largely upon a study of these records that the statements and conclusions embodied in this paper are based. In order to make the statement as emphatic as possible, I shall say in this connection that this experience teaches me not to share the view of those who maintain that influenza is a common or important cause of nervous or mental disease, either functional or organic; common, I mean, in contrast with such causes as syphilis and alcohol. I do not wish to be understood as underestimating the disastrous effects that follow successful attack on the nervous system by the bacillus of Pfeiffer. They are often very severe, and that they do occasionally occur everyone admits. That which I wish to show is that they occur infrequently.

As an example of the indiscriminate accusation of influenza as a cause of death without the production of definite disease, statements from the literature like the following, which, by the way, is not unique, may be quoted: Dr. E. A. Cobleigh[1] of Chattanooga says: "Some patients (after influenza), wholly without regard to age or previous vigor, were too feeble for any movement or exercise beyond the minimum of vitality required to stay alive. This one element of debility was profound, and the sole cause for uneasiness. Instead of recovering within ten days or a fortnight, most of these sufferers lingered for weeks, sometimes even for months, and not a few dwindled on for a year or two, to die of sheer exhaustion at last." One of the most impressive and rare complications that he recalled ever having seen, consisted in extreme clonic, spasmodic seizures, particularly involving the heart, the diaphragm, and the muscles of respiration, with no mental disturbance except the most pitiable fear of impending death. Nor do I in any way subscribe to the following sentiments expressed editorially in the Medical Record, August 13, 1904: "If an individual, through the sins and misfortunes of his fathers, inherits a predisposition to any disease, an attack of influenza will in most instances develop this disease. This statement is especially true of affections of the nervous system, and renders, in these times, influenza a malady greatly to be dreaded. Considered from almost all points of view, influenza is perhaps the most deadly disease to which the modern individual is subject. When it does not kill, it either cripples or leaves the victim of its onslaught a worse man physically and mentally than he was before the attack." Surely, there is no justification for such animadversion, else I should have been brought face to face, professionally and socially, with many of these wrecks! Why see red and blue so vividly when the real causes of nervous and mental diseases, syphilis, alcohol, and narcotics, take their iniquitous way almost unmolested?

I can scarcely hope to do more in the fifteen minutes allotted me, than barely to outline the relationship of influenza to diseases of the nervous system. Statistics will appear in the published article, and recitation of cases would not enhance the value of my remarks.

In a general way, it may be said that influenza causes chronic disease only by causing disorder of the nervous system and of the special senses. The best evidence of the truth of this statement is the fact that influenza, a well-defined disease of the latter middle ages and a ravage of the nineteenth century, was entirely forgotten and had practically lost its place in medical literature, until the epidemic of 1890, when disorders of the nervous system had become diagnosticable, and neurology the most important integral part of general medicine.

The bacillus of influenza may and does cause

* Read at a meeting of the New York Academy of Medicine, February 7, 1907.

meningitis, encephalitis, myelitis, and possibly neuritis. The toxins produced by the pathogenic activity of the influenza bacillus are adequate exciting causes of neurasthenia and psychasthenia, of neuritis and neuralgia, of various forms of insanity, of independent nervous symptoms, such as insomnia, vertigo, headache; and they may be contributory to the causation of any disease that afflicts the human being. This practically constitutes the accusation against influenza from the neurologist's standpoint. But I repeat neither the bacillus of Pfeiffer nor its toxins, *i.e.* influenza (if what is called influenza is the equivalent of the existence in the system of these two things), is a common cause of nervous disease. I take for granted that it may be assumed that much that is called grippe by the patient and physician is not influenza in the strict sense.

The most serious diseases of the nervous system caused by the bacillus of Pfeiffer are inflammations of the central nervous system and its covering—encephalitis, myelitis, and meningitis—all extremely rare and extremely serious complications of influenza. There is very little in the clinical manifestations of these various diseases that permits the physician to distinguish them from those caused by other organisms. Since the utilization of spinal puncture and examination of the spinal fluid as a routine diagnostic measure, many cases of influenzal meningitis have been recognized. Before that time the bacillus of Pfeiffer had been found in the exudate of certain cases of meningitis.[2] In many cases it occurs accompanied by other organisms. Recently J. S. C. Douglass[3] has reported a case of influenzal meningitis occurring in a female patient ten months old, whose cerebrospinal fluid obtained during life by a lumbar puncture, showed many bacilli situated both intra and extracellularly, of the shape and size of Pfeiffer's organism. After death a similar bacillus was found in the meningeal exudate. This case, taken in conjunction with those reported by Nuthall and Hunter,[4] Judson Bury,[5] Thomesca and Gracoski,[6] and Mya,[7] adequately proves that meningitis may result from this bacillus. Whether or not influenzal inflammation of the meninges is ever a primary infection, I mean infection by the bacillus, is not known. One can infer that the infection is a primary one in the absence of symptoms pointing to involvement of the nasopharynx, the adjoining sinuses, of the middle ear, and of the respiratory system.

So far as I know, there is nothing in the clinical manifestations of meningitis, cerebral or spinal, which permits one to say whether or not it is due to the bacillus of influenza. It may be presumed to be of such origin when it occurs in the wake of influenza at a time when influenza is present, or when it is sequential to disease of any of the cavities about the head caused by influenza, but it can be positively so characterized only when the bacillus of Pfeiffer is found in the cerebrospinal fluid. Here it should be said that it has frequently been pointed out that, although the cerebrospinal fluid at the first puncture does not contain the bacilli, often a second or third tapping may reveal them. Cases of well-marked meningitis that end in recovery always excite a suspicion in the mind of the physician who sees the common terminal results of meningitis on the post-mortem table, that possibly the case was an example of what the French call pseudomeningitis, or meningisme, a condition which may be best described negatively as one due not to the activity of the pathogenic organism directly, but to its toxins, and in which after death there is found only hyperemia and possibly increase of serum. While I have seen cases of meningitis apparently typical and fully developed in every way, occurring in the wake of influenza with catarrhal manifestations in the mucous membrane, terminate in recovery, I have never seen such a case in which the bacillus of Pfeiffer alone was found.

Influenzal meningitis occurs, as all other forms, more frequently in children than in adults. In twelve cases reported by Ghon,[8] with post-mortem examination, there were eight children and four adults.

Acute nonpurulent encephalitis, meaning, as a rule, hemorrhagic focal inflammation of the cortex (often of symmetrical areas in each hemisphere), is a disease that has received recognition only during the past few years. Its causation, its clinical display, and its terminations, are now fairly well understood. That the bacillus of influenza causes it, there is no doubt. That it has been and is still often diagnosticated as meningitis, is a fact. That its chief symptoms are headache, vertigo, irritableness, and stupidity, quickly leading to delirium and unconsciousness, with comparatively slight constitutional manifestations, and often unaccompanied by signs of cortical irritation or destruction (spasms, aphasia, or paralysis), all writers are agreed. Particular symptoms indicative of the exact location of the focus of inflammation occur only when a highly specialized area of the brain, such as the Rolandic area, the speech area, the cuneus, etc., is the seat of the disease. That the life of individuals that have even severe attacks of this disease is often spared, and that many such cases are later labeled cases of infantile cerebral palsy, organic epilepsy, sclerosis of the brain, hydrocephalus, idiocy, etc. (and that, therefore, it may be truthfully said that such diseases or conditions have a genetic relationship to influenza), can easily be demonstrated. Although the occurrence of this disease in the wake of influenza is good evidence that influenza is responsible for it, and although this evidence is corroborated by finding the bacillus in the tissues of cases that have terminated fatally, it is more difficult even than in meningitis to say that such and such a case is due to the influenza bacillus. That such is the case may be suspected and inferred from its association. The cerebrospinal fluid may reveal the organism, but I do not find any case recorded in which it was found during life.

Acute hemorrhagic encephalitis is a diagnosis that was made fourteen times in my clinic last year. During this period 1,532 patients sought relief from disorder of the nervous system. One may or may not gather from this an idea of its frequency. I believe it to be of more frequent occurrence than is commonly supposed. I have had no experience that leads me to share the belief of some writers, that a disseminated encephalitis (which later in life becomes the anatomical basis of chronic organic chorea, or disseminated sclerosis) is a sequence of influenza, although a few such cases are recorded. The gray matter within the brain may likewise be attacked by the bacillus of influenza or its toxins, and the clinical picture of polioencephalitis superior and inferior (Oppenheim-Uhthoff) result.

Naturally, the cerebellum may be involved as well as the cerebrum and the brain ganglia. What the symptoms of such involvement are will depend upon so many factors (part of the cerebellum involved, intensity and extent of the lesion, etc.), that it is difficult to particularize them. A case reported by Guttman,[9] under the title of "Brain Paralysis After Influenza," may, however, be taken as an excellent example of influenzal cerebellar encephalitis, al-

though there are many symptoms, such as the beginning ones, that tend to indicate that there was a widespread infection. Four weeks after the beginning of the influenza, the patient complained of weakness of the right leg, tenderness of the calf muscles, and later of pain and weakness of the right arm. Two months later both legs were weak, and his gait was unsteady. At this time he complained mostly of vertigo and of headache. Shortly afterward the right eye went into a state of convergent strabismus, and examination showed that it could not be moved out of that position. The right facial nerve was weaker than the left; there was intention tremor of the right hand, and the tendon-jerks were much exaggerated. The patient recovered completely after six months. The ocular palsy and nystagmus, the tremor of the hands and feet, the exaggerated reflexes and ankle-clonus, all point to its being an inflammation of the cerebellum.

The occurrence of myelitis after influenza was soon recognized after the epidemic of 1890. The published histories of many patients show that such myelitis displays itself in one of three forms: as a transverse or as a punctate disseminated lesion, and as an acute systemic involvement, the motor tracts being particularly involved, to constitute a clinical syndrome resembling that of acute ascending paralysis, or Landry's paralysis. In exceptional instances the symptoms display themselves in a way that indicates that the morbid process is a meningomyelitis. The feature of influenzal myelitis that calls for comment, and the one that sets it apart from other varieties of myelitis, is its termination, which, in not a few instances, has been in complete recovery. There are many such cases on record. Personally, I have seen but one. In this case the only sign at the present time that the cord did not entirely regain its normal state, now five years after the occurrence of the disorder, is liveliness of the knee-jerks. In other instances the termination is in partial recovery, the clinical condition remaining corresponding to that of lateral or combined sclerosis. Cases have been recorded to show that in some instances following upon grippe the spinal cord becomes diseased in what may be called a subacute way, the clinical accompaniments being those of subacute spastic paralysis, or acute spasticity and spinal paralysis, such as the case reported by Henschen,[10] in which a man thirty-four years old had the typical symptoms of this condition, which terminated in recovery. A similar case has been recorded by Koster.[11]

That influenza exerts a profound poisonous effect upon the nervous system, which effect is continuing after the disorder itself has disappeared so far as any evidence of its active existence can be made out, was known long before the bacillus of influenza was discovered by Pfeiffer. The poison which the activity of the bacillus produces is capable of bringing on inflammatory or degenerative processes, at least in the peripheral nerves and in the muscles, to produce neuralgia, myalgia, and multiple neuritis, and this I have spoken of in another part of this paper. They are not more striking, however, than individual symptoms, particularly insomnia and headache, which follow in the wake of grippe. Of all the sequelæ of grippe, I know of none which is more distressing and more persistent than these. It has been suggested that they are dependent upon cerebral hyperemia, or on change in the meninges, such as meningeal and cortical edema, but this seems to me an utterly unnecessary hypothesis, and a much less likely one than that which attributes them to alteration of blood-pressure in response to the action of the toxins upon the blood vessels. Naturally, as we know not how sleep is caused, we cannot very well know how it is disordered, even though we may be able to give full enumerations of the things that disorder it. That it is disordered after influenza is very well known, and that to relieve it very often requires a therapy directed against circulatory disturbances, evidences of impaired metabolism and nutrition, and toxemic conditions, as well as the utilization of hypnotics. In other words, tonic baths, massage, sweat baths, eliminants acting through the intestinal and renal tracts, as well as veronal. What is here said in reference to the post-influenzal insomnia applies with almost equal force to the treatment of post-influenzal headache.

One of the most remarkable associations of the clinical symptoms which influenza produces, is that of bulbar paralysis of the asthenic variety. It may be permitted me to say that there is a form of bulbar paralysis which has certain typical clinical characteristics, in which after death no lesion of the oblongata has been found, and to which the name asthenic bulbar paralysis has been given. This condition has been noted to occur after grippe, but whether the influenza is a contributory cause or an active exciting cause, cannot be said. In a case reported by Pitres,[12] the case seems to be a general asthenia more than a bulbar asthenia.

Disorders of the nervous system that in my experience stand most frequently in causative relation to influenza, are those dependent not upon the direct action of the bacillus of influenza upon the nervous system, but upon the activity of toxins produced by the pathogenic activity in these germs. These are neurasthenia and psychasthenia, neuralgia and neuritis, and diseases and disorders of the nervous system attending and depending upon arteriosclerosis.

That after grippe many individuals are enfeebled mentally and physically, out of keeping with what has seemed to be comparatively a simple preceding febrile disorder, there can be no doubt. Just how much depression, apprehension, inattentiveness, insomnia, and impaired physical vigor one must have before he is entitled to label the individual neurasthenic or psychasthenic, no one can say. Nor does it aid us in the successful recognition or treatment of such condition so to label it. It is probably far better for both patient and physician if such cases that terminate in recovery under appropriate treatment at the end of a few weeks are not thus labeled. No one thinks of designating similar conditions following typhoid fever, rheumatic fever, and lung fever, as neurasthenic and psychasthenic, and probably because in such instances the severity of the preceding disease seems to be adequate for such entailment as exists, but the fact that the phenomena of grippe are often so slight in their severity and brief in their existence, makes it seem incredible that such preceding effects may be the result, but one only has to recall the gravity and innocuousness of the infection of anterior poliomyelitis and compare it with the sequelæ to have a parallel. Occasionally, but not very often, it is my belief, there develops after influenza (perhaps oftener than after any other disease caused by a germ whose tendency it is to find its most favorable development in some mucous membrane) mental, nervous, and visceral symptoms, which are properly designated psychasthenia and neurasthenia. The one most characteristic feature of these cases is that they are hypochondriacal. The anxiety type, the obsessional type, the self-accusatory type, and other well-known forms, are rarely displayed. In these severer forms the profound bodily weakness manifested in great

fatiguability and symptoms indicative of collapse on comparatively slight effort, are sometimes noted. They bespeak, as do the severer forms of neurasthenia and psychasthenia, either a profound intoxication of the system or an extremely vulnerable cerebrospinal organism. In these cases, as in the psychoses, the intensity of the symptoms of these nervous disorders does not seem to be proportionate or in any way connected with the intensity of the phenomena caused by the infection itself. In other words, a very mild attack of grippe is sometimes followed by a profound attack of nervous prostration, but then this is not unlike that which experience has taught us is common for other post-infectious involvement of the nervous system, for instance, after diphtheria.

Many cases of post-influenzal hysteria have been recorded, but what is said regarding the relationship of insanity to influenza holds good as well for hysteria. Hysteria does not occur after influenza, save in individuals who have a psychopathic or neuropathic foundation. In such individuals, hysteria may develop or other pathological mental states may follow, depending upon conditions which are imperceptive to the average mind, upon conditions that indeed are considered far too inadequate and entirely too trifling, but the pathogenesis of the hysteria in these cases is the pathogenesis of hysteria in general.

Post-influenzal neuritis, either of a single nerve or of many nerves, is a well-recognized condition. Influenzal multiple neuritis is fairly uncommon, *i.e.* compared with alcoholic, rheumatic, and gouty neuritis. Any of the nerves of the body may be involved apparently. Henschen has reported a case of bulbar neuritis, in which the symptoms were quite typical of this variety of bulbar palsy. That the spinal ganglia are sometimes the seat of an inflammatory or degenerative condition growing out of grippe, is testified to by the numerous cases of herpes zoster to be found in the literature. That brachial and sciatic and generalized multiple neuritis occurs, there is no dearth of testimony. The motor nerves seem to have a greater susceptibility to the action of the toxins produced by the Pfeiffer bacillus than the sensory nerves, but the same holds true for almost every variety of infectious neuritis, of polyneuritis, unless it be that rheumatism is the exception to this rule. Still, we are not at all sure that neuritis follows so frequently in the wake of that form of rheumatic fever which is due to a diplococcus rheumaticus, as it does in the wake of disorders called rheumatic which are dependent upon deficiencies of metabolism, and neuritis dependent upon alcohol, which are predominantly sensory and sensori-motor in their manifestations. The one point that has been impressed upon me in connection with the neuritides of influenza is that their duration is much briefer than apparently similar conditions dependent upon other causes. For instance, I have seen a patient with extensive multiple neuritis, causing quadriplegia, recover within six months. A similar condition, due to alcohol, would pursue a favorable course if it recovered in twice that time. This fact, and likewise a less important one, viz., that the atrophy attending post-grippal neuritis is in some instances not very profound, suggests that the lesion is oftentimes a perineuritis rather than a parenchymatous process.

To the neuralgias following grippe, I shall have little to say, first, because there is nothing specific about them, and second, because post-toxemic neuralgias are extremely uncommon. They are much more liable to occur in individuals who are in impaired health and when overtaken with grippe, and in women, particularly those who are afflicted with constipation and indigestion. In certain cases of trifacial neuralgia it is probable that the influenza infection has been the exciting cause of degenerative changes in the cells of the Gasserian ganglion, and in this way is to be looked upon as an important contributory cause. The duration of the ordinary neuralgias, whether occipital, facial, brachial, or crural, is usually brief, though now and then we encounter an example that is most rebellious to treatment. In such cases there is likely to be an underlying condition of ill-health that accounts for it.

One of the most interesting phases of this question, *i.e.* the relation of disease and disorder of the nervous system to influenza, is reached when we attempt to discuss the relationship of diseases of fairly well-defined cause on the one hand, and of absolutely unknown cause on the other hand, to influenza. Such diseases as tabes, syphilitic spinal paralysis, and the various forms of cerebral apoplexy, on the one hand, and disseminated sclerosis, amyotrophic lateral sclerosis, paralysis agitans, asthenic bulbar paralysis, etc., on the other hand. Those who have given serious study to the question of the cause of tabes may differ as to whether or not syphilis is the *sine qua non* of that disease. But it can scarcely be maintained by anyone that influenza is an adequate cause of tabes. The literature shows that such allegation has often been made, and the same may be said of the other diseases that have been enumerated. One of the typical cases of that form of myelitis or meningomyelitis which has been spoken of as Erb's type of syphilitic spinal paralysis, that I have ever seen, developed in a young man a few weeks after a comparatively severe attack of grippe. It may well be that in this case the individual, coping with as much poison as he could take care of, viz., the syphilis, had his nutrition, or the circulation, of his spinal cord so depreciated that the pale spirochete produced the typical pathological reaction there. But in this case the disease had its origin in syphilis, and would have developed probably in a similar way after any devitalizing experience.

I have recently watched the development of a profound generalized arterial sclerosis, and finally cerebral thrombosis, in a young man of thirty-six, the victim of Hanot's cirrhosis. Apparently the arterial sclerosis had developed within a period of five months, the time corresponding to the duration of the jaundice. At least, it may be said that the diagnostic features of the disease have developed within that time. That which the cholemia (to give it a name) has accomplished in the vascular system, for this man is comparable to that which the toxins of influenza do for a few, and just as the Hanot's cirrhosis has been the cause of cerebral apoplexy in the case that I mention, so is influenza the cause of some chronic nervous disorders, by mediating changes in the arterial system.

The relationship of psychoses to influenza has an enormous literature all its own: still, it is possible to summarize a knowledge of the subject in a few lines. There is no specific influenza-psychosis, and no form of insanity that is particularly likely to be called into existence by influenza. Individuals who are liable to develop insanity, *i.e.* those who are laden hereditarily and those who are debilitated by alcohol and syphilis, are more likely to develop a psychosis if they have influenza than if they have not. In this way influenza may be said to stand in relationship to manic-depressive insanity, general paresis, confusional states, and possibly even dementia precox. It is undeniable that psychoses

sometimes develop after influenza in individuals who have neither hereditary nor neuropathic taint, but so likewise does insanity, not preceded by influenza. Psychoses develop both during the prodromal stage, the febrile stage, and after the influenza has ceased to exist as a disease, causing general symptoms, *i.e.* in the stage of convalescence. It seems legitimate to believe that the psychosis immediately preceding and during the active stage of influenza is dependent upon the action of the toxins upon the cerebral cortex, and in these instances the psychosis is apt to be of the nature of acute delirium. There are cases on record in which this acute delirium has been very profound, and terminated fatally within a few days, and in such instances there can be no doubt but that the action of the toxins upon the brain is to produce an acute hemorrhagic inflammatory condition. In the cases that develop after convalescence of the disease the mental condition is probably the expression of the effects of the toxins upon the cortical nutrition, and likewise upon the nutrition of the entire system, and are to be looked upon as a combination of causation and intoxication.

It has been pointed out by many that there is no relationship between the severity of the attack of influenza and the insanity which accompanies or follows it. Oftentimes the most severe mental disorder may occur soon after or apparently in connection with a light attack of influenza.

In conclusion, I say again, that experience teaches me that the baneful effects of the pathogenic activity of the Pfeiffer bacillus upon the nervous system have been overestimated, and that in reality influenzal and post-influenzal neuroses and psychoses are not very common. Finally, I trust that this statement may not be considered as a denial of their occurrence.

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37 WEST FIFTY-FOURTH STREET.

THE RELATION OF THE TONSIL TO INFECTION AND INFECTIOUS DISEASES.*

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THE tonsils may be described as two elongated, almond-shaped masses of lymphoid tissue situated one on each side of the fauces between the anterior and posterior pillars. They present on their outer surfaces eight to twelve orifices which lead down to blind pockets or crypts. If the tonsil of a rabbit, which consists of a single mass of lymphoid tissue, be taken as a type, the human tonsil is composed of eight or twelve such masses bound together so that the mucous membrane covering each mass forms the lining of the spaces between them, which are the tonsillar crypts. This arrangement of reduplication increases enormously the surface of the tonsil. The embryonic formation of the crypts is very interesting. The tonsil is at the border line of the epiblast, which forms the lining of the mouth, and the hypoblast, which forms the alimentary canal. Reterer, in his "Evolution of the Tonsil," shows that the epiblast folds into the hypoblast and the epithelial cells become more and more flattened from pressure. Some of them undergo degeneration and, being thrown off, leave the spaces which are the crypts. The tonsil afterwards becomes infiltrated with mesodermic cells. The mucous membrane in common with that of the mouth consists superficially of flattened epithelial cells. Beneath the flattened epithelium the cells become more rounded

FIG. 1.—Diagram showing the encroachment of the lymph follicles on the mucous membrane at the bases of the crypts.

and then polyhedral, resting upon a single layer of columnar cells. Underneath the epithelium is a delicate endotheloid basement membrane. The mucosa beneath the basement membrane consists of interlacing bands of connective tissue which, though very fine in the normal tonsil, becomes immensely hypertrophied in chronic disease. Bands of connective tissue extend from the mucosa into the interior of the tonsil and form the framework for the adenoid tissue proper. This consists of masses of lymph corpuscles grouped into follicles surrounded by lymph spaces. The follicles, 10 to 12 of which surround each crypt, encroach on the mucous membrane at their bases. The lymph corpuscles are small round cells, each having a distinct special nucleus surrounded by a mass of protoplasm. The unexposed portion of the tonsil has a firm connective tissue sheath and the vessels enter through it at the base. The blood supply of the tonsil is very large and is derived from the dorsalis linguæ, the ascending palatine and tonsillar, the ascending pharyngeal and descending palatine arteries. The principal vessels enter the base, branch, and follow the connective tissue framework. Their capillaries anastomose in an aborescent manner about each follicle; branches are also sent to the papillæ of the mucous membrane. Superficially the tonsil is covered with an enormous network of lymphatic vessels which anastomose with the surrounding lymphatics of the palate and tongue. In the deeper portion they have been shown by Reterer to commence in the perifollicular spaces by a system of

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closed canals and leave by the efferent vessels at the base. The tonsil is abundantly supplied with racemose mucous glands which communicate with the crypts and exposed surface of the tonsil. The nerves are derived from the fifth and glossopharyngeal, their minute distribution is not definitely settled, but they probably terminate in the lymph follicles. The lymph follicles of the tonsil are very similar in structure to the malpighian corpuscles of the spleen; however, the arrangement of the blood supply is different. In the spleen the lymph cells are grouped around the terminal capillaries in masses, while in the tonsil the masses of lymph cells are surrounded by the blood-vessels. The tonsillar arrangement, I should think, would favor the more ready escape of leucocytes from the vessels, which fact we will see is of great importance in the function of the tonsil. New lymph cells result through the multiplication and division of lymph corpuscles

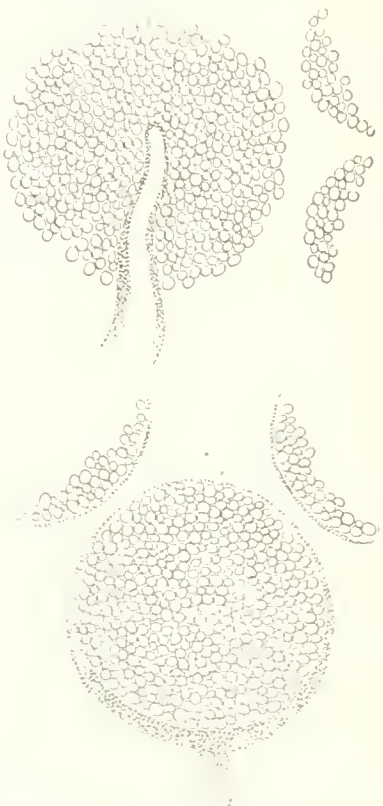

FIG. 2.—Diagram showing the arrangement of the blood supply of the malpighian corpuscle of the spleen (A), and the lymph follicle of the tonsil (B).

and likewise of the so-called fixed connective tissue cells, as has been demonstrated with certainty, especially in inflammation. They are continually entering the lymph spaces to be taken up by the blood-vessels or to be carried away from the tonsil by the efferent lymph channels. Some of them, especially from the follicles near the surface, enter the crypts. During inflammation of the tonsil the number entering the crypts is enormously multiplied. Just as there is an entering of lymph corpuscles into the blood-vessels to become leucocytes, so is there a wandering from the blood-vessels of leucocytes which enter the tissue of the tonsil whose loose structure facilitates their movements. Many of them also find their way into the crypts, especially during inflammation.

The cavity of the mouth is very much exposed to microbes which enter with the food and external air. Miller has recognized in man more than thirty species. Several, such as leptothrix and spirochete, are constantly present; with them are also frequently found pneumococci, staphylococci, and streptococci, whose pathogenic powers are well known. Virulent diphtheria bacilli are also found in the throats of a certain number of quite healthy persons. The Massachusetts Associated Boards of Health found that the Klebs-Löffler bacillus was present in the throats of from 1 to 2 per cent. of all healthy persons and in 8 to 50 per cent. of those who had been exposed to diphtheria in families. In spite of these facts many persons, though exposed, escape infectious diseases, and wounds of the mouth heal very rapidly. Operations, even though done without aseptic precautions, are usually not followed by infective complications. How does the mouth defend itself against so many microorganisms? Sanarelli came to the conclusion, after extensive researches, that saliva had an antiseptic power and destroyed the microorganisms. Hugenschmidt, working in the laboratory of Metchnikoff, reaches conclusions quite at variance with Sanarelli. In his experiments, the microorganisms grew rapidly in saliva. It has, however, a mechanical effect similar to the lacrymal secretion, and washes the microorganisms from the pharyngeal cavity into the stomach. It has another indirect action, that of effecting a positive chemotaxis on the leucocytes, which fact has been proved by introducing capillary tubes containing saliva into the peritoneum of guinea pigs; leucocytes attracted by the saliva entered and digested the microorganisms in it. The flattened epithelial cells covering the buccopharyngeal cavity constitute an important protective factor. The cells are being constantly renewed. Desquamation, taking place especially during mastication, carries away innumerable germs which are on their surface and in the interstices. There is a partial renewal of the epithelial lining after every meal. The mouth, in common with the rest of the digestive system, is furnished with a defensive apparatus against microorganisms in the shape of lymphoid tissue, viz., the lymph follicles at the base of the tongue and the tonsils. Some years ago Stöhr demonstrated that the tonsils are traversed by enormous numbers of leucocytes, which migrate into the cavity of the mouth. This continual and normal condition is called Stöhr's phenomenon. When a particle of mucus is removed from the surface of the tonsil of a person in good health, we always find that it contains leucocytes, the neutrophile cells especially being filled with organisms of all kinds.

Formerly inflammation was looked upon by pathologists as always of a destructive and harmful nature. Recent bacteriological research has demonstrated, on the contrary, that it is of a protective character, being Nature's means of limiting the advance of noxious microorganisms. It is to Metchnikoff, who in 1883 issued his work on the comparative pathology of inflammation, that we owe our present knowledge of the protective reactions of the human organism. Virchow had advocated the nutritional theory, namely, that there was an increased flow of nutritive substances to the inflamed part, as well as an abnormal proliferation of local cells; in fact, that inflammation began from the moment nutritional derangement occurred. This derangement consists of an absorption or modification of large quantities of nutrient substances. In this way the cells receive a large amount of nourishment at the expense of the blood. Virchow regarded the characteristic phenomena of inflammation not as a salutary means of reaction, but as a process dangerous to the organism. Samuel and Cohnheim held that inflammation consisted in

a molecular lesion of the vascular walls of the blood-vessels, which lost their power of retaining the blood corpuscles, allowing them to issue to the places of least resistance. Metchnikoff shows that, from the point of view of comparative pathology, inflammation is essentially reactive in nature. The organism, threatened by some injurious agency, protects itself by the means at its disposal. The lowest organisms struggle against morbid agents instead of submitting passively to their attacks. The essential factor in inflammatory reaction is an endeavor on the part of the protoplasm to digest the harmful object. In the lowest forms of life the whole organism takes part in the digestion, but from the sponges up the digestion of the morbid agents is confined to the cells of the mesoderm. The phagocytic action is slow in the lower scale of life, for the cells have to depend entirely upon their ameboid movements to reach the injurious body; but as soon as, in the course of evolution, a vascular system makes its appearance, the phagocytic reaction becomes more rapid. By means of the circulatory apparatus, the organism can send the defensive cells to the threatened point in large numbers. When the circulation is partially carried on by a lacunar system, there is nothing to intercept the movements of the cells toward the seat of the injury; but if the cells are inclosed in blood-vessels, they must pass through the vascular walls by diapedesis. In man the principal cells, which have phagocytic action, circulate in the blood. They are the neutrophile cells which Metchnikoff calls the microphages and the large mononuclear cells which he designates as the macrophages. They are able to digest by intracellular ferments called cytases. In cases of natural immunity the cytases rid the body of microorganisms without the cooperation on the part of other soluble ferments; in acquired immunity there are other substances called fixatives, which, though not bactericidal, render the microorganisms more susceptible to the action of the cytases. The cytases are allied to the proteolytic disastases in that they adhere to the cells which produce them; the fixatives, however, though undoubtedly of cellular origin, pass readily into the fluids which bathe them. No less important in phagocytic reaction are some of the fixed tissue cells, for instance, the endothelial cells of the blood-vessels which, by their sensibility and contractile properties, allow the phagocytes to escape through the vessel walls. Another form of sensibility which must be mentioned is that of the nervous system, which aids the cells and the vascular system in their efforts at resistance. The action of the macrophages and microphages is well seen in the case of an immunized horse inoculated with streptococcus serum. In the local edema caused at the site of inoculation, the phagocytosis may be observed. In this case the macrophages or mononuclear cells first appear and devour the cocci; in many cases the cocci multiply rapidly within the macrophages, and, having overcome them, escape in large numbers from their bodies. Later the microphages or neutrophile cells come to the rescue of the macrophages and commence to englobe and digest the cocci until in a few days there are none left.

I do not wish to go too deeply into the different varieties of tonsillar inflammation, but I will point out certain facts which determine the character of the inflammation and give some examples. An inflammation of a mucous membrane may be catarrhal, croupous, or diphtheritic. We must also consider the irritant and its virulence, the amount and character of the tissue involved, and its power of resistance. The peculiar anatomy of the tonsil determines its appearance when there is much reaction on the part of the organism. In the disease called mycosis we have a fungus-like growth on the tonsil produced by an irritant, namely, the leptothrix, which is able to induce no inflammatory reaction to speak of, there being simply a multiplication of the bacillus on the soil where it has chosen to locate. The streptococcus, on the other hand, if sufficiently virulent, is able to produce a violent inflammatory reaction in the tonsil. It also has the power to cause the tissue cells to release a fibrin ferment, which accounts for the formation of the pseudomembrane. A virulent Klebs-Löffler bacillus overwhelms and destroys the cells and so rapidly permeates the tissue that necrosis is produced. This accounts for the adherence of the membrane. In all forms of infection, with a few exceptions, there is a reaction on the part of the tonsil which is usually described as acute follicular, or better, lacunar tonsillitis. Professor Fraenkel describes the clinical picture as follows: "The tonsils and adjacent tissues are red and swollen. The tonsils particularly project prominently into the mouth and on the surface, which is more uneven than it usually is; there are points of white, which a little observation shows to be rounded drop-like projections of a viscid whitish substance. After the patient swallows, the whitish points disappear for a time or show only slightly and not so numerous as before; but if you watch the tonsils for a few minutes they appear again and grow gradually larger. When they are removed by the act of swallowing, you can see that they were situated on the so-called crypts of the tonsils, the little infoldings of the superficial mucous membrane of the tonsil that occur all over the organ." A microscopic examination shows that the exudation consists of fine fibrillæ, interlaced and containing in their meshes epithelial cells, leucocytes, red blood-cells, lymph corpuscles, and bacteria, many of these last being within the cells.

What has taken place in the tonsil? Under the stimulation of a morbific agent phagocytosis has commenced. There are always normally a large number of leucocytes wandering toward the periphery of the tonsil and escaping through the crypts. As we have said before, these, if examined, will be found to be phagocytes, often containing bacteria. As a result of increased phagocytosis the microphages and macrophages are attracted to the tonsil in large numbers and wander out more plentifully. The result is the approach to the surface of the mucous membrane of large numbers of cells. This does not mean the exposed surface of the tonsil; for, as we have shown, the mucous membrane lines the crypts entirely, so that the major portion of the mucous membrane of the tonsil is within the crypts. This, together with the fact that the adenoid tissue encroaches on the mucous membrane at the bottom of the crypts, is the reason why the exudation is first formed there and, accumulating, is continually filling up the crypts and escaping from their orifices. Bosworth, in his work on the diseases of the nose and throat, misses the point entirely when he says that he knows of no reason why the catarrhal inflammation should be confined to the crypts and offers the suggestion that, because the secretion is friable and non-adherent, it is washed from the surface of the rest of the tonsil. The fact is that the exudation is formed in the crypts, and it is the exit of the leucocytes carrying with them the bacteria that have

found their way into the tonsil, together with the cast off epithelium and other débris, that constitutes the distinctive feature of the disease. The red and swollen appearance of the tonsil is due to the increased blood supply.

What is the fate of pathogenic germs that may happen to find lodgment on the tonsil? They may be washed off by the saliva. They may be carried away by the desquamation of the epithelial cells. If they should attempt to enter the crypts they may be mechanically washed out by the mucous secretion and the lymphocytes, or be devoured by the phagocytes which are continually passing out of the crypts. If the bacteria are present in sufficient quantities to call forth further defensive action, phagocytosis occurs, the lymphocytes in the follicles rapidly multiply by mitosis, there is an increased blood supply, the endothelial cells of the capillaries contract and allow the microphages and macrophages to escape, and these englobe the threatening bacteria and digest them. The microphages are the phagocytes that attack most bacteria, though some, such as tuberculosis, are digested by the macrophages. The macrophages are in the main the scavengers. They consume dead blood cells and the microphages which have been overcome in the struggle. The dead and living cells, the bacteria, the mucus, and the fibrin released from the cells compose the exudation. The crypts act as sewers or drains by which the exuded matter is removed from the body. It is quite probable that the lymph corpuscles of the tonsils furnish fixatives which are of the utmost importance in its defense against toxins. Delazenne of the Pasteur Institute has proved conclusively that enterokynase, the digestive fixative discovered by Pawlow, is a product of the Peyer's patches of the intestine, and we know how similar in structure Peyer's patches are to the tonsil. Chemotaxis must be considered. It is the name given to the phenomenon exhibited by certain cells of moving towards (positive) or moving away from (negative) certain other cells or substances. When negative chemotaxis occurs, the phagocytes refuse to be attracted to the bacteria. Just what causes this is not yet understood, but virulence has a great deal to do with it. If the virulence of the bacteria is very great, the phagocytes seem to give up without a struggle and allow infection to occur. This condition is often seen in infectious diseases. It has been explained by the theory that phagocytosis is a struggle for existence on the part of the cells, and not a means to accomplish an end, so the results are by no means perfect. If the leucocytes are unable to destroy the bacteria and they gain entrance into the body, or if enough of their toxins gets into the blood by absorption, we have the characteristic symptoms of the disease.

In considering the relation of the tonsil to infectious diseases, diphtheria is the most important disease to be considered. There is no better example of the phagocytic action in the tonsil than is shown in this disease. Cases have become so numerous in which the process of diphtheria has extended no further than to produce a lacunar tonsillitis that we have given them the name of bacteriological diphtheria, for a diagnosis would not have been made but for the finding of the Klebs-Löffler bacillus. Diphtheria also gives us an example of negative chemotaxis. In 1888 Roux and Yersin isolated the soluble toxin of diphtheria. If the bacteria are very virulent and this soluble poison is produced in large quantities, negative chemotaxis is produced and the phagocytes refuse to act. In diphtheria we have an example of the specific action of the bacteria. They produce necrosis of the epithelium, and the membrane, which is composed of a fibrous reticulum, in the meshes of which are found lymphatic cells, red blood corpuscles, and degenerated epithelium cells, becomes adherent. It is a fact that there is no adherence to the surface where the epithelium is intact. The action of antitoxin in conferring immunity opens a most interesting subject. That the antitoxin unites with the toxin in the blood to render it innocuous, as claimed by Erlich, is not incompatible with the theory of Metchnikoff that it stimulates the phagocytes to increased activity. In artificially acquired immunity the blood serum undoubtedly has antitoxic action, but Metchnikoff has conclusively proved it never has bactericidal action unless phagolysis occurs and the cytases are released from the phagocytes. The controversies between the biological and the chemical schools on the subject of immunity are far from being settled, but up to the present time Metchnikoff has most successfully defended his position. In scarlet fever we have many examples of phagocytic action in the tonsil. Children exposed to scarlet fever develop tonsillitis, and nurses and parents also have tonsillitis, but no scarlet fever. The relation between tonsillitis and rheumatism is of great importance. Rheumatism is so frequently preceded by tonsillitis that it seems to me to be a question if there is a specific germ for rheumatism. The soluble poisons or toxins of several different bacteria may, on account of faulty elimination, be deposited in the joint membranes and cause the arthritis. German observers have caused the symptoms of rheumatism in rabbits by inoculating them with the exudation of tonsillitis, but that does not prove that it is specific. Regarding rheumatism, Kiefer has pointed out an interesting fact in the treatment of tonsillitis. In a series of 120 cases 60 were treated in the ordinary way and 60 were treated by the local application of acetic salicylate. The first 60 were followed by 9 cases of articular rheumatism, while the second 60 were not followed by a single case of rheumatism. He observed 2,275 cases of tonsillitis. Of his cases of rheumatism 21.3 per cent. could be traced to a previous tonsillitis. The other infectious diseases in which lacunar tonsillitis, or, as it might be called, phagocytosis in the tonsil, occurs are numerous. I have often seen it in measles. It occurs in erysipelas, smallpox, plague, etc., but it will be necessary to discuss other examples to bring out the point of the paper. Phagocytosis occurs when any morbid agent excites a positive chemotaxis in the tonsil.

I have so far considered only the infections. Phagocytosis in the tonsil is also caused by inorganic and organic particles. Weavers, file-cutters, needle-grinders, and those working at similar trades, are especially liable to tonsillitis. Whether the inorganic and vegetable particles are the primary causes, or whether they injure the tissue and lay it open to infection, is a question. Wright, in a very interesting paper, has shown that colored dust passes into the interior of the tonsil when the microbes do not. He attributes this to a positive chemotaxis of the cells for the dust particles and a negative for the microbes. Dr. Wright does not use the word chemotaxis correctly, as I understand it. If there were a negative chemotaxis, as he says, the bacteria would be unopposed by the phagocytes and they would enter and set up systemic infection. As I look at it, there was, in the case he cited, no chemotaxis at all, but the microbes were not present in sufficient quantities or were not sufficiently virulent to attract the phagocytes or to overcome the

normal desquamation of the epithelium and the phagocytes that normally issue from the tonsil.

The function of the tonsil has been discussed by many authors and it has been assigned a rôle as insignificant as shaping the bolus of food. Most writers seem to consider its function in health of little moment and that it is of no importance except when diseased. The fact that the tonsil may be frequently diseased and by hypertrophy become a menace to the body, is not an argument against its acting in a defensive rôle. Defensive power lies primarily in the cells, especially those derived from the mesoderm. Cells often defend themselves at the expense of the tissue and organs, and organs and tissue at the expense of the body as a whole. Sclerosis is primarily an endeavor on the part of Nature to defend itself against irritants and often causes destruction of the body; for example, endarteritis and the various scleroses of the kidney, liver, etc. The phagocytes undoubtedly take part in the formation of connective tissue. They surely do in formation of granulation tissue. Metchnikoff has shown that the vascular loops in new tissue are projected by the phagocytic action of the endothelial cells of the vessel walls. It is quite probable that some of the phagocytes become connective-tissue cells.

The tonsil is frequently spoken of as a port of entry of infection, but we must not forget two facts: First, that a generalized infection may determine the appearance of a secondary tonsillitis, whatever may have been the port of entry of the infection. It is quite possible, and indeed must often happen, that the disease, whatever the port of entry, lowers the resistance of the tonsil, and allows the germs of that disease or other pathogenic germs to get a foothold. The second fact is that the systemic infection takes place either in spite of the lacunar tonsillitis, in which case the tonsil attempts to resist infection, but is overcome, or when negative chemotaxis occurs and the phagocytes give up without a struggle. It is very probable that the tonsil is more bactericidal in its defensive action than it is antitoxic. This would account for the large number of cases of rheumatism, muscular rheumatism, and albuminuria, as pointed out by Adler, which, I think, are due to the faulty elimination of soluble poisons; it would also account for the headache, pains in the back and limbs, and other systemic symptoms of poisoning in every case of tonsillitis.

I believe the tonsil is so well defended that it seldom is the port of entry, as claimed by so many authors. This would seem to be borne out by the fact that, although the crypts are always teeming with pathogenic bacteria, general systemic infection is comparatively rare. Furthermore, as Adler has pointed out, systemic infection is more apt to follow insignificant anginas and an extensive inflammatory reaction seems to prohibit general infection. The tonsil must be continually exposed to the germs of tuberculosis, yet primary tuberculosis of the tonsil is rare. In a certain proportion of sections of the tonsil we find tubercles, but this is only the evidence of the defensive action in localizing the disease. Metchnikoff, who has made an extensive study of tuberculous inflammation, has shown that the giant cells which assist in walling off the bacilli, are aggregations of macrophages which have coalesced. In diphtheria we seldom have a grave infection unless the membrane extends beyond the tonsil, which would show that the tonsil was at least better adapted to resist infection than the surrounding tissue.

Finally it is possible to have a chancre of the tonsil and a chancre of the lip five days later, which I think is convincing proof that there is a defensive action in the tonsil preventing the primary immunization of syphilis.

I have endeavored in this paper to show:

That the tonsil is anatomically admirably arranged to resist infection.

That it is continually exposed to the action of pathogenic germs.

That when we have an inflammation of the tonsil it is caused by a pathogenic germ which is endeavoring to enter, and the inflammation itself is essentially a defensive reaction.

That when the resistance of the body is lowered from any cause, or the germs are virulent enough to overcome the other means of defense, which the tonsil has in common with the rest of the oral mucous membranes, or if the tonsil is wounded, a positive chemotaxis having been produced, there is a lacunar tonsillitis.

That when a negative chemotaxis is produced, either on account of the virulence of the infection or from some other unknown cause, there is a general systemic infection without a tonsillitis.

That when we do have a systemic infection it is either in spite of the defensive reaction or on account of negative chemotaxis.

That finally the relation of the tonsil to infection and infectious diseases is one of protection, and the disease we call lacunar tonsillitis is an example of phagocytosis and is a defensive reaction.

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Cerebrospinal Meningitis.—Menschig has found the following useful, reporting four recoveries out of five cases:

R Pilocarpinæ hydrochlor. ..... 0.03 =0.04
Aquæ 200.0

Solve. S. A teaspoonful every one to three hours till sweating occurs. The above is intended for children under ten years of age.—*Medizinische Klinik.*

A NEW STREPTOTHRIX PATHOGENIC FOR CATTLE.

(STREPTOTHRIX OF BOVINE PNEUMONIA.)

By MAJOR CHARLES F. KIEFFER,

SURGEON UNITED STATES ARMY, PORT D. A. RUSSELL, WYOMING; ON DETACHED SERVICE WITH ARMY OF CUBAN PACIFICATION AT SANTIAGO DE CUBA, CUBA.

THE morphology and classification of the streptothrices is still far from being settled. As a class they stand between the moulds and the bacilli, but the border line varieties are by no means sharply located. For instance, it seems almost necessary to class some stems of the *B. tuberculosis* as streptothrices.

It is, therefore, important that all facts bearing on the streptothrices, whether in man or animals, should be reported and sufficient data collected for a definite classification of these organisms.

Broadly speaking, the pathogenic streptothrices, both in man and animals, cause two classes of lesions. The first and most important are the granulomata, the pseudotuberculous, and the pseudomycotic lesions. Second, the inflammatory processes going on to abscess formation and frequently to pyemic states. A large proportion of the organisms are both acid and alcohol fast; some are not. The list of severe, and in large part fatal, cases in man is growing rapidly. Ashton and Norris have collected the clinical data of twenty-six cases. Mayer reports ten cases and I have seen, in my own practice, two cases. I am convinced that many more cases would be discovered if a laboratory technique more suitable for staining the organisms were employed. I believe it would be a good laboratory procedure in all examinations of sputa to make two series of studies of the specimens. In the first one, using the ordinary technique preferred by the individual worker for demonstrating *B. tuberculosis*. In the second, employ the same stain, but omit the acid decolorization. This procedure has been followed in my laboratory for some time and gives most interesting bases for comparison.

The present report concerns a hitherto undescribed streptothrix. The organism was demonstrated in and isolated from the organs of two cows. In a small herd of milch cattle, fourteen head, three cows sickened and died within the space of a week. Four days later a fourth cow became sick and was examined by veterinarians. Being unable to make a diagnosis they brought the organs to me for bacteriological examination. A few days later a fifth cow died after being noticeably sick only four days. The organs of this animal were also delivered to me.

A careful post-mortem examination of the first carcase was made by Veterinary Surgeon Sproule, Artillery Corps U. S. Army. The only epidemic cattle diseases observed in that vicinity during the year (1904) had been hemorrhagic septicemia and symptomatic anthrax. During the post-mortem examination particular search was made for evidence of the latter disease. For this reason the carcase was skinned, but no subcutaneous hemorrhages or nodules of any kind were found. The spleen was apparently normal. It was of the usual size and consistence, and there was no capsular inflammation or thickening. The liver was normal in appearance and size. Both lungs were markedly congested and contained numerous fairly large consolidated areas. These areas on section were found to be engorged with blood and exuded a grayish purulent fluid. The heart was considerably hypertrophied. The right auricle contained a finely laminated pinkish white and gray clot, the size and shape of a tennis ball. The center of the clot was broken down and extremely fetid. Dr. Sproule states that the clot was just as fetid when removed from the animal two hours after death.

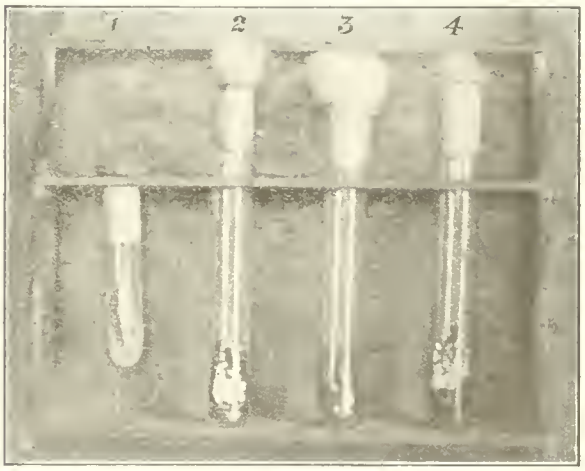

FIG. 1.—Culture of streptothrix: 1, blood serum; 2, glycerin-agar; 3, plain agar; 4, glucose agar.

FIG. 2.—Smear preparation from the lung of cow No. 5; showing beading, irregular staining and two cones; stain, carbol-fuchsin. × 1,100.

Smears made from the liver showed nothing. Smears from the consolidated areas in the lungs showed numerous streptothrix forms, which will be described later on. The same organism was observed in the broken down material from the auricular clot, combined with a short bacillus and numerous cocci.

Inoculations were made on agar, serum, and bouillon tubes from the lungs, heart, heart clot, liver, and spleen. The tubes inoculated from the heart and liver remained sterile. On all of the others a fine growth was observed in twenty-four hours. This growth was found to be the same streptothrix which had been observed in the smears from the organs. In the tubes inoculated from the spleen it was present in pure culture. In the tubes from the lung and heart there was a mixture with various cocci.

Three days later a fifth cow died after being noticeably sick three or four days. Post-mortem examination three hours after death by Dr. Sproule showed the following: There were no subcutaneous

hemorrhages or nodules. Both lungs were actively inflamed. They were filled with consolidated patches and there were numerous smaller areas of hemorrhage. The appearance coincided very closely to those seen in the lungs of the first cow examined, excepting that there was a much greater proportion of the lungs involved and there was also a greater degree of engorgement. The heart was enlarged to at least twice the usual size. The pericardium was much inflamed and thickened, the parietal layer being at least half an inch thick. The inner surface of the entire pericardial sack was covered with a thick, shaggy, grayish-yellow exudate. The sack contained six quarts of pus. This pus was greenish gray in color, peculiarly oily and greasy looking, and was extremely fetid. In it were found eight ounces of flabby yellow clot. On the visceral layer the exudate was not quite so thick as on the parietal layer; it was slightly adherent, but could be peeled off with little difficulty. The heart contained both white and red clots. The liver was slightly enlarged. The spleen was normal in size and texture. The kidneys were normal in appearance.

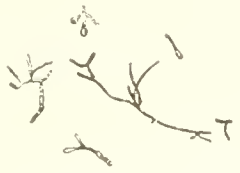

FIG. 3.—Streptothrix culture on nutrient agar, 10 days' old, stain, carbol-fuchsin. × 1,000.

Smears made from the lungs and pericardial exudate showed a streptothrix identical in appearance with that observed in the first case. Inoculations were made on agar, blood serum, and bouillon. A growth of the streptothrix was obtained from the lungs pure, from the spleen pure, and from the pericardium and pus mixed.

The herd was quarantined and a rigorous cleansing and disinfection of the stables and outhouses carried out. No further cases developed.

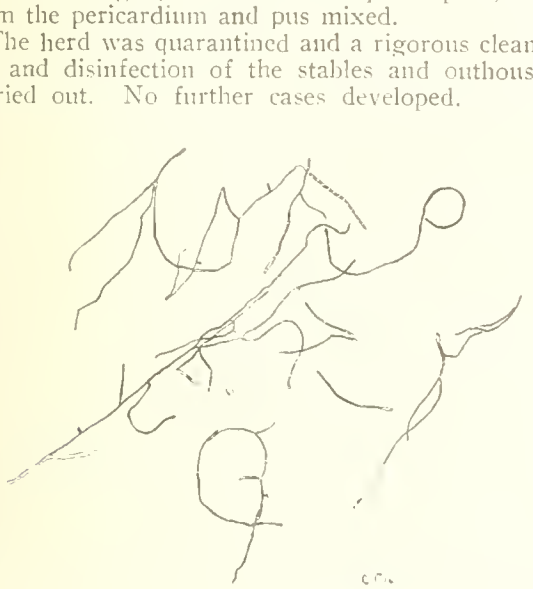

FIG. 4.—Streptothrix culture glycerin-agar, 24 hours old; stain, carbol-fuchsin. × 1,000.

The streptothrix grows on all of the ordinary culture media, but best of all on five per cent. glycerin-agar. On this medium the growth is very free. Numerous round, glue-like colonies develop, and in the course of 24 hours are about 1-32 inch in size. In 24 hours more the colonies grow very much larger and show a faint powdery white surface. In the next 24 hours the colonies become densely white and always show concentric rings. In the first 24 hours the appearance of the growth is like that of many of the ordinary pathogenic organisms and not at all like that of many streptothrix cultures. The colonies are lentil-shaped, tough and tenacious. They do not break up under the loop, but the whole colony comes bodily away from the culture medium. At the end of the first 24 hours a clear coffee-brown discoloration of the culture medium is observed around the colonies. This discoloration spreads and in a few days involves the bulk of the culture material. After two days the cultures give off a strong mouldy odor.

FIG. 5.—Streptothrix culture on nutrient agar, 24 hours old; stain Gram. × 1,000.

On neutral nutrient agar the organism presents the same cultural characteristics as on glycerin-agar, excepting that the growth is only about half as rapid. The same brownish discoloration of the medium occurs.

On glucose-agar the growth is about intermediate between the previous two. Otherwise the appearances are identical.

On blood serum small round colonies develop at the end of 24 hours. These colonies slowly increase in size and are surrounded by a zone of brown discoloration in the medium 1-8 inch wide. As the growth becomes older the colonies become grayish yellow and wrinkled.

On gelatin no satisfactory study of the growth was made, because the organism will not grow at all, or only with exceeding slowness, at any temperature in which the gelatin will remain solid. Transplantation of an entire colony is followed by a very slow increase in the size of the colony and scant formation of the brown stain without any evidence of liquefaction.

On potato the growth is very rapid. In 24 hours small gray colonies develop with faint discoloration. In 48 hours the growth is very copious, the colonies powdery gray and wrinkled, and the whole surface of the potato a deep, muddy chocolate color.

If a small colony is inoculated on bouillon in 24 hours, numerous minute colonies form without turbidity or any change in the medium. These colonies settle at the bottom of the tube, and when shaken up float in the liquid like small thistle downs settling very slowly to the bottom. In the next three days the colonies increase in size up to 3-16 inch. There is no discoloration or other change in the bouillon.

In litmus milk the blue color is discharged in 24 hours and in 48 hours the fluid becomes distinctly red.

The streptothrix does not form indol, nitrites, or gas.

On all of the media it grows at a temperature between 35° and 40° C., with its optimum at about 37° C. Above 40° C. the growth is very scant,

while no growth can be observed in transplanted colonies kept at the room temperature for two weeks.

It is aërobic. While growing freely on the surface of all the media, growth is exceedingly scanty in stabs below a depth of 1-4 inch. At a depth of 1-2 inch it will not grow at all. It shows no growth in anaërobic cultures nor in an atmosphere of hydrogen.

On all solid materials the organism seems to grow more freely on media of increased spissitude. Thus it will grow more freely on agar which has been prepared some weeks, so that slight shrinkage of the medium from the tube has taken place, than it will on the same medium freshly prepared.

In hanging drop there is neither motility nor molecular motion.

The streptothrix stains very freely with all of the ordinary aniline dyes. It is not acid fast. Decolorization is rapid and complete, with dilute mineral acids as well as with Gabbett's acid methylene blue. It is not decolorized by alcohol. It is brilliantly stained by Gram. Neisser's method shows no polar bodies. Special technique (Loeffler and Van Ermengem) fails to show any flagella.

In the original smears from the lungs a few cones were seen which seemed to be attached to the terminals of some of the branching filaments. I am not entirely satisfied as to the character of these bodies and not at all certain that they are part of the organism. The appearance of two of the most distinct cones is shown in Fig. 2. In old grown out cultures there were some appearances resembling these bodies. In such cultures the filaments were much shorter, with pronounced clubbing of their ends (Fig. 3). Fig. 4 gives a very good idea of the appearance of the organism grown on glycerin-agar. Most of the filaments are uniformly stained, but a few joints and branches are shown which have taken the stain very faintly. There is no tendency to form coccus-like chains, and little segmentation is observed in the branches. Fig. 5 shows the microscopical appearance of a culture of the same age as the preceding, on plain nutrient agar. It will be remembered that on this medium the growth was not so profuse as on glycerin-agar. In this form the tendency to the formation of coccus-like chains is quite marked.

Inoculation experiments were undertaken on all of the smaller laboratory animals, but with negative results. I sent some cultures of this organism to Professor Warthin for study. He informed me that inoculations in his laboratory on the smaller animals were also without result. I think it is quite likely that inoculations on the bovines might give a positive result, but I have had neither the opportunity nor facilities for developing any such research.

I have proposed to name this organism Streptothrix of Bovine Pneumonia (*Streptothrix pneumoniæ bovis*). A fairly complete working bibliography of the subject of pathogenic streptothricosis is appended.

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THE PRESERVATION OF HEARING.*

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The object of this paper is to call attention to the advantages of periodical aural examinations, and the benefits which would accrue to the patient through the easy correction of aural defects which, untreated, would later become serious or incurable, impairing the hearing and menacing the well-being, and perhaps even the sanity and life of the individual.

Otology can treat of no subject of more vital importance than the preservation of hearing, yet we never hear it mentioned. It comprises the whole field of otopathology, which it attacks with the most effective weapon, prophylaxis. The general practitioners, when they comprised the whole of the profession, with the exception of the eye and ear men, spoke slightingly of our specialty, perhaps because of their own unfortunate experiences in this field. They held that diseases of the ear were of two classes: First, those that would get well without treatment; and second, those that would not get well with any treatment. Since that time the surgical achievements of the otologist have rendered this ancient view ridiculous. Why, then, does there still linger deep in the minds of many outside of this specialty the opinion that the treatment of deafness is unsatisfactory, if nothing worse?

There is a very simple explanation of this feeling on the part of these benighted aliens. We must admit that most cases of chronic extreme deafness offer little encouragement for the restoration of perfect hearing. Such cases wrongfully detract from the fair fame and glory of otology. The otologist is expected to have a control over vital forces not even dreamed of by other practitioners. Why should he be expected to restore lost organs and tissues, or even to rejuvenate those which have undergone complete degenerative metamorphoses? Yet this is the fact in case of loss of hearing from suppurating ulceration or from calcification of the drum membrane and ankylosis of the ossicles. A general surgeon is not expected to restore a limb which has sloughed away, or an ophthalmologist to give sight to an eye darkened by neglected corneal ulcers. Why is the hearing mechanism so often allowed to suffer such vital losses? Is it not because nature has given man very many times the amount of perception of sound in normal hearing needed in dense civilized communities? A young person may lose 99 per cent. of his hearing before he is conscious of impairment. This deficiency may include the total loss of the hearing in one ear. He may, and in fact often does, allow a still further loss before he attempts to improve the condition.

A case in point came under my observation recently. A man, twenty-three years of age, came to me to be treated for a "running ear," which prevented his obtaining satisfactory life insurance. He was totally deaf in this ear and had in the other only 1-14400 of normal hearing, yet he claimed to suffer no inconvenience on account of deafness; in fact, did not consider himself deaf. The hearing distance of his good ear for a watch was four inches. The normal distance for this watch was forty feet at his age, making the index of his hearing 1-120, which when squared to show the amount of hearing gives 1-14400 or 69-10000 of one per cent., a rather small proportionate amount.

Why will an intelligent person allow the loss of such a large part of what is perhaps the most important of all the senses—hearing? It is because his attention is not called to the fact. Sound perception is largely quantitative. The diminution of sound perception may not be noted until a very large part has been lost. As long as the requisite quantity for ordinary use is preserved, the individual remains oblivious to the deterioration. The conditions are reversed in the eye where the perception is largely qualitative rather than quantitive. The volume of light is of little importance, whereas the definition or quality is everything. The least deterioration becomes apparent by indistinctness and blurring of objects. Defective ears require louder sound because the sound-conducting mechanism is clogged. Brighter lights are no advantage to defective eyes because the accommodation or translucent media are defective. Their refractive not their conductive properties are at fault.

The layman has not yet learned to practise the same economy of his ears as he does of his teeth, for example. He does not go at regular intervals to the otologist, as he would to the dentist, in order that commencing defects may be corrected before they become serious. Nor does he go to the otologist as he does to the ophthalmologist as soon as any deterioration has taken place. A slight deterioration in sight is immediately perceived, whereas, as we have previously stated, a great loss of hearing may be brought about entirely unbeknown to the individual.

This scheme of prophylaxis would apply to all ear diseases and defects not congenital, among them those originating in the pharynx, the nose, the tuba auditiva, external auditory meatus, the ear complications of general diseases, nervous conditions, and trauma. We thus include the stubborn forms of deafness due to chronic middle ear catarrh, absolute deafness of labyrinthine, or nervous origin, as well as those inflammations of the tympanomastoid region which threaten entire loss of hearing and even life itself. At greater length we may catalogue them as inflammations of the pharynx, obstructions, adenoids, and tonsils; inflammation of the nose and irregularities, hypertrophies, and obstructions; obstructions and inflammation of the tuba auditiva; inflammation of the middle ear and faulty nutrition and atrophy; deficiency in the nerve function of hearing, inflammation of the external canal, obstruction by foreign bodies, cerumen, etc., and new growths, and especially the common insidious disturbances of the acoustic balance.

Inflammations of the pharynx involving the nasopharynx, extend to the Eustachian tube and cause impairment of its functions, drainage, and ventilation. The slight chronic pharyngitis that is often found in mouth breathers, gouty or syphilitic people brings about insidious changes along the tube and middle ear. Gross obstructions to respiration, hypertrophied adenoids and tonsils, bring about the

*Read before the Harvard Medical Society of New York, December 22, 1906.

same conditions. Smaller ones may be large enough if conveniently placed to cover the mouth of the tubes or press against them. A very small amount of adenoid tissue in the fossæ of Rosenmuller can seriously impede the action of the tubes. Irregularities and impediments to the flow of air and the blood, and lymph circulation of the nasal fossæ can cause disturbances of the Eustachian tube and its connecting cavities.

The changes which affect the hearing most insidiously are of two kinds: those chiefly inflammatory, and those chiefly due to defective ventilation. The final results in either case are much the same. The inflammation first causes congestion and increase of the connective tissue elements, then contraction, anemia, faulty nutrition, atrophy, and degeneration. The choking of the Eustachian tube causes the same results without intervention of inflammation direct through the congestion and stagnation of blood and lymph. Defect in the manumetric balance of the tympanum directly affects the drum membrane. When there is negative pressure the membrane is sucked inwards flexing the ossicular chain. When there is increased pressure in the tympanum, the membrane is pushed outward, extending the ossicular chain. Either of these positions is detrimental to the best sound transmission, and when continued long the effect is lasting. Overextension has a detrimental effect on the elastic fibers of the membrane and the ligaments of the ossicular articulations, which yield in time to the overstretching. All these changes affect the acoustic balance directly, and render it less capable of transmiting the sonorous vibrations. This pathological cycle when once started tends to progress rather than cease spontaneously, and the structural alterations have no tendency to repair without surgical aid. The atrophy, when once well under way, goes through all the series of changes consequent to faulty nutrition, involves the drum and its contents, and even spreads to the labyrinth.

Decrease of sound perception is the most delicate measure of general nervous exhaustion. It may indicate the commencing of nervous changes which later will destroy the hearing or affect the nervous system very seriously. Inflammations of the external canal are often remarkable for the great amount of pain a comparatively trivial affection may cause. The drum membrane is sometimes affected. Occasionally the canal is entirely closed, cutting off the hearing. Foreign bodies and impacted cerumen act in much the same way. New growths sometimes close the canal and cut off hearing permanently, as well as threaten life when malignant. Some of the benign osteomata are easily controlled if they are observed in time. Impairment of the acoustic balance is especially prone to come on unobserved, whatever its causes, and the hearing is seriously affected before the patient notes any change. Clogging of the Eustachian tube is a long step on the road to deafness. It is also the chief determining factor in mastoiditis. When there is suppuration of the middle ear and an open Eustachian tube, convalescence takes place before the mastoid inflammation reaches any importance. When the tube is clogged, the suppuration is likely to persist in the mastoid antrum and cells.

Early observation will detect these insidious conditions, which cause over 95 per cent. of deafness, and judicious treatment cure them before serious impairment has taken place. We suggest that the otologist should be consulted once a year, after every cold, and when anything unfavorable is noticed in the ear, which is often the case in general nervous affections, exhaustion and general diseases, as well as when there are any alarming ear symptoms.

ACUTE EDEMA OF THE PHARYNX, WITH REPORT OF A CASE REQUIRING RAPID TRACHEOTOMY.

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In the following case while it could not be definitely established that there was no laryngeal edema the condition was primarily and essentially an affection of the pharynx. There is no anatomic reason why complete asphyxiation could not occur from an acute edema of the pharynx without any involvement of the larynx or its aperture. Semon and Williams in classifying acute septic inflammations of the pharynx give as one class "acute edematous tonsillitis, uvulitis, pharyngitis, epiglotiditis, arytenoiditis, and cellulitis of the neck." As these authors have pointed out, it is impossible to draw any definite line between the purely local and the more complicated cases or between the edematous and the suppurative forms, all being different stages or degrees of reaction to infection.

That the more severe symptoms of an edematous nature may be present without the severe suppuration following is shown in this case. No doubt it is to the benignity of the infection, the edematous stage being past, that the patient owes his life. Why

Hard rubber vaginal tip used, two-thirds exact size. At subsequent removal the end was cut smooth and polished. Sterilization by boiling before reintroduction has caused the tube to straighten from the original angle.

this should have been of such a severe character at one time and later so mild is hard to understand.

At twelve o'clock at night I was called to see a patient whom I had never treated before, and, being told that he was choking to death, went prepared to deal with an attack of asthma. Upon my arrival in the sick room I found the patient sitting in a chair with much cyanosis, tongue protruding, saliva escaping, and laboring at each breath. Patient was a man weighing 250 pounds, having a very large neck, and an accumulation of fat constituting a double chin. His history was hurriedly given me as follows: One hour before my arrival his throat had been lanced for the eleventh time in the course of a tonsillitis with which he had been suffering for ten days. Thinking I had to deal with a post pharyngeal abscess, I quickly introduced my finger into the pharynx. To my surprise I found the structure so swollen and the opening so tight as to make the introduction of my finger difficult. On the left side was a wound in which I could easily bury a finger. This I cleansed of blood and mucus. Noting the very feeble pulse I gave hypodermatically 1-30 gr. of strychnine sulphate. I then emptied into the patient's throat one-half dram of suprarenalin, all that I had with me, and dispatched the only other man in the house to the nearest drug store for more. Thinking I might intubate past the swollen pharynx, I asked for a tube of some kind and finally a vaginal tip to a hard rubber syringe was handed me. This was elbowed almost at a right angle.

I soon found it impossible to intubate, as anything long enough to reach the larynx, in the swollen condition of the soft palate, could not be turned in the space present. The syringe tip was laid aside after a few attempts. The patient's neck was surrounded with cloths wrung out of ice water. To my surprise the breathing became more difficult. While I was preparing a local anesthetic in order to do a tracheotomy, the patient ceased to breathe and became unconscious, making an anesthetic unnecessary.

All had fled but one woman, and while she kept his head from falling in my way I performed a low tracheotomy, fearing to enter higher on account of the edema, the extent of which I did not know. As the only light was that afforded by an overhead gas jet, the operation was for the most part done by the sense of touch. Kneeling in front of the patient, who was in a sitting posture, I incised the skin and deep fascia in the median line two inches above the sternal notch. Introducing my finger I worked my way bluntly to the trachea. Feeling the tracheal rings I introduced my knife, edge upward, along my finger. The trachea was then stabbed and cut slightly upward. The knife being withdrawn a closed hemostat was introduced to the trachea, was opened, and was pulled out after the manner of treating an abscess. This enlarged the wound sufficiently for the introduction of a tube. This method, while not elegant, was sure and safe. The intense carotid pulsations on both sides of the guiding finger served as a warning that blunt dissection was to be preferred to cutting. Very little blood was lost.

Sticking a silver female catheter, which I found in my pocket case, into the wound, while my woman assistant held it in place, I performed artificial respiration. After some time we were rewarded by a deep inspiration. This, however, was followed by a convulsion which made it a very precarious matter to have such a small instrument in the wound, the neck being so thick that only a short bit was protruding for a hold. Casting about for something else to use in the wound, I took the hard rubber vaginal syringe tip with which I had tried to intubate and quickly whittling the end inserted it. The elbowed shape fitted perfectly and left enough for the threaded end to be tied securely with tape. In one-half hour the patient asked to be put to bed; and, breathing entirely through the tube, soon slept the first sleep for several nights.

The patient progressed to an uninterrupted recovery. No sloughing nor suppuration occurred except some pus, which came from the surface of the incisions. These had evidently been made into a solid tonsil and later infected. Urine examination next day showed nothing abnormal.

The previous history of this case is interesting as leading up to a condition so nearly fatal. He had suffered with a simple tonsillitis ten days. Three or four days previous to my visit the family physician incised the left tonsil and repeated this at each visit until the last incision was the eleventh. At no time did any escape of pus follow the incision. Hydrogen peroxide and a proprietary antiseptic wash had been used with the salicylates internally. In the emergency coal oil had been swallowed to relieve the edema until the patient could not swallow. While the nature of the emergency prevented a thorough examination, fortunately attempts to relieve the edema gave all the information that could be gleaned from palpation. Upon introducing my fingers into the throat four distinct points of pressure could be felt. These seemed to be bulgings of the anterior, lateral, and posterior walls. The latter especially felt like the half of an orange. This swelling increased rapidly in the few minutes that I made several examinations, until finally there was complete occlusion and my fingers were introduced only with great effort.

The edema declined as rapidly as it had arisen, so that within three hours the patient could talk, when the tube was closed and air forced through the natural channels. No suppuration followed, and one month later I removed both tonsils. They were imbedded so as to be almost entirely hidden by the pillars. Carefully dissecting them out, there was very little bleeding. The tonsils were hard and fibrous and honeycombed with crypts. No edema followed this operation and the patient's throat is now clear of all tonsillar tissue.

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BRIEF REPORT OF A CASE OF TRICHINIASIS.*

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A. D'E., an Italian peddler, twenty-nine years old, was admitted to my service in St. Vincent's Hospital on November 9, 1906. He had been ill a week with fever, headache, marked prostration, diarrhea, occasional chilly feelings, slight cough, and persistent muscular pains in the arms and legs. He had had a nosebleed in the early part of the week.

On admission he looked very ill, was perspiring freely, and coughed a little. His temperature was 102°, pulse 84, and respirations 24. The tongue was coated and quite red at the edges; spleen was distinctly palpable. There was no eruption and the abdomen was not distended. There was slight bronchitis. His heart, lungs, and liver seemed normal. There was nothing unusual in his throat. The urine was not scanty. It showed a marked diazo reaction; was dark amber, alkaline, of a specific gravity of 1.028, showed no albumin nor sugar, and contained numerous triple phosphate crystals.

A tentative diagnosis of typhoid fever was made and the case was manged accordingly.

During the next week the patient was very ill; dull and apathetic, with a temperature range of 103° to 105°, slight diarrhea, marked headache, profuse sweats, and pains in the limbs and occasionally in the abdomen. The course of the disease seemed, however, unusual for a typhoid. It was observed that the temperature, while it rose to 104° and 105° in the evening, would drop next morning to 100½° or 101°, a difference of three or four degrees for the second week of typhoid. There was no delirium. There was no sordes nor herpes on the mouth. There was absolutely no distention of the abdomen. No eruption appeared. There were no characteristic fecal movements. The blood was examined on three different days and the Widal reaction (1 to 20) was negative. The white count was high, on four different days being 17,000, 18,000, 16,000, and 14,000.

Thinking that the up and down temperature, the bronchitis, the diazo reaction, the pains, etc., might be due to miliary tuberculosis, the sputum was examined on four different days and the blood was also examined, but no tubercle bacilli were found.

*Read at a meeting of the Society of the Alumni of City (Charity) Hospital on December 12, 1906.

As the man had an enlarged spleen, occasional chilly feelings, up and down temperature of high range, marked headache, and profuse sweats, it was thought that there might be a malarial infection. Examinations of the blood for parasites were made on three different days, but none were found. He was given thirty grains of quinine a day for four or five days, but it seemed to have no beneficial effect on the disease, and it was stopped. The profuse perspiration continuing and being unaffected by atropine sulphate and acid sponging, it was thought that the quinine might be producing it, but when this drug was stopped the sweats continued.

On the eighteenth day of the disease the temperature dropped to 99° and remained fairly low. The diarrhea had ceased. His general condition improved markedly. With what had gone before, the diagnosis of typhoid was no longer tenable, and he was allowed to eat, without bad results.

The pain and tenderness in the arms and legs, however, continued, and seemed to be in the muscles and not the neuralgic pains of typhoid fever. Emaciation was pronounced. The white blood count remained high. In the last few years we have had in the hospital three cases of trichiniasis which acted in a similar way, and I suggested examining the blood for eosinophilia as a possible aid in diagnosis. On four different days the blood showed marked eosinophilia. The differential white count on November 10 showed the following percentages: Polynuclears, 69; large lymphocites, 12; small lymphocytes, 4; eosinophiles, 15; no myelocytes, no mast cells. On November 28 the differential count showed: Polynuclears, 71; large lymphocytes, 4; small lymphocytes, 10.5; eosinophiles, 8.5; no myelocytes, no mast cells. The patient declared that he was very fond of pork, often partook of it in many forms, and had eaten some the very day he fell ill. An incision was made over the right shoulder and a small piece was removed from the deltoid muscle and examined carefully. The trichinæ were found in moderate number.

The patient continued to improve and was up and about the ward on November 20, a little over three weeks from the beginning of his disease.

441 Park Avenue

The Application of Galvanism to the Treatment of Fibroids.—Franklin H. Martin thinks that electricity may be used with benefit in a small percentage of cases of fibroids of the uterus. He says that electricity is especially indicated in small bleeding fibroids in women approaching the menopause; in inoperable cases; in incipient, uncomplicated fibroids in women over forty years of age; in small, uncomplicated fibroids of the smooth, interstitial variety which have no symptoms but hemorrhage; in cases not accompanied by pelvic pus accumulation in which the patients persistently refuse to have an operation. In his treatment of typical cases the writer passes a large copper electrode of suitable shape and diameter to the bottom of the uterine canal. The vaginal part is insulated with a rubber muff and this electrode is then attached to the positive terminal of the battery. The other electrode is placed on the abdomen and is then attached to the negative pole of the battery. As a rule the patient may safely be given as strong a current as she can bear without danger of producing excessive cauterization at the active pole. This varies from one hundred to two hundred milliamperes. The duration of each treatment should be five minutes for the maximum current employed. The treatment should be given as often as every second day. In cases in which an intrauterine electrode is not practical some other form of internal electrode should be used which will have the effect of causing the current of galvanism to pass directly through the largest part of the tumor. The writer declares that some of his most gratifying results have been obtained in cases of the apparently hopeless variety.—*The Archives of Physiological Therapy.*

The Roentgen Treatment of Hodgkin's Disease, Leukemia, and Polycythemia.—Henry K. Pancoast declares that although conservative men are beginning to look upon the Roentgen specialist as overenthusiastic in his claims, and perhaps with some justice, nevertheless, at the same time, these very men stand willing to acknowledge that the *x*-ray has great value and is the most reliable agent in treating leukemia. Tissue destruction is doubtless the greatest factor in the results accomplished in the *x*-ray treatment of leukemia. In the case of a leukemic patient, the toxic conditions should be carefully studied and the tissue destruction should be investigated before and after beginning *x*-ray treatment. Dangerous effects should be guarded against. Each case of this kind should be reported in detail. The writer refers to a case of Hodgkin's disease in which all of the superficial lymphatic glands and the spleen were markedly enlarged. Under prolonged *x*-ray treatment these were very much reduced in size but whenever the exposures are discontinued for any length of time there is always a tendency for the recurrence of the manifestations. In the case of polycythemia there seems to be as yet no tendency toward a permanent reduction of the number of red cells to normal.—*The Archives of Physiological Therapy.*

The Importance of a Microscopical Examination of All Growths Removed from the Nares, Together with a Report of Early Diagnoses of Malignant Growths.—Sylvan Rosenheim calls attention to the great importance of early diagnosis in a case of malignant growth. In no class of cases is the lack of such diagnosis so serious and so sure to lead to evil results. When such cases finally come to the general surgeon they are either inoperable or do not recover after operation. If all growths from the nose are systematically examined, they will be correctly diagnosed while they are still small, and they may, as a rule, be easily extirpated by the nasal route. When this route is not feasible the radical operation can be done at a time when there is the greatest probability of a cure. The physician will then be on the watch for recurrences and will be in a position to treat them vigorously. The writer then cites the history of a number of cases in point. In Watson's series of one hundred and fifty cases of sarcoma of the nasal passages there was a previous history of polypi in sixteen per cent. In Bloodgood's series of cases of carcinoma of the antrum there was a history of polypi in nine of them, which arose from the nasal fossæ, lasting from one to twelve years.—*Bulletin of the Johns Hopkins Hospital,* June, 1906.

Concerning Local Anesthesia and Sensitiveness of the Organs and Tissues.—K. G. Lennander calls attention to the four methods of contact, pain, pressure, heat, and cold, to which the skin reacts. Underneath the skin lie the muscles and aponeuroses with a sensitiveness relatively slightly developed. Underneath these tissues are the serous membranes, the periosteum and the synovial membranes. The parietal pleura, the parietal peritoneum, and the adjacent subserous tissues, the periosteum and the synovial serous membrane are all sensitive to pain. On the contrary, the writer believes that they are not susceptible to the other three tactile methods of pressure, heat, and cold. As far as he has been able to ascertain, the bones, cartilages, the brain, the lungs, the heart, and the blood-vessels, after they have been separated from the connective tissues about them, the thyroid gland, the liver, the spleen, the pancreas, the renal parenchyma, the internal female genital organs, and those parts of the testicle which are covered with serous membrane, do not react to any of these methods of contact, according to all appearances. He believes that this is absolutely demonstrated at least for the stomach, the intestinal tract, and the gall-bladder.—*Gazette des Hôpitaux Civils et Militaires.*

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THE NEW YORK MEDICAL BILL.

It is reported that the homeopathic and eclectic physicians of this State are strongly opposed to the bill now before the legislature for the unification of the medical examining boards. Why this should be so we cannot imagine, except upon an assumption which would be far from complimentary to our brethren in the other schools of practice. The bill provides for a single board, before which all who aspire to the right to practise the healing art must appear and pass a common examination on all the branches of medicine except materia medica and practice. As members of the eclectic and homeopathic State medical societies are to be represented on this board, and as the subjects of examination will be those only on which all educated physicians must be grounded in order to understand the nature of disease and to be able to recognize its presence in the individual, there would seem to be no valid objection on the part of our separated brethren to the plan. No questions will be asked regarding the treatment of disease, and the successful candidate will be at liberty then, as he is now, to prescribe drugs or manipulations, water or hot air, as may appear to him most appropriate.

It has been suggested that the opposition is due to the fact that the examinations of the homeopathic and eclectic boards are more lax than those of the appointees of the Medical Society of the State of New York, and that the graduates of the homeopathic and eclectic schools would be unable to pass the examination as now conducted by the appointees of the State Society. We do not think this can be so, and if it were the adversaries of the single board would hardly allege it as a reason for their opposition to the bill now before the legislature. There is, therefore, no valid excuse for their adverse position, and there are many reasons why they should favor the bill. In the first place a common examination would place all the members of all the schools of practice on an equal footing. It could not be said, as it is now said, rightly or wrongly, that the licensees of the regular board are better educated than those of the other boards, for all would then be subjected to the same test.

If there is but one board for the licensing of all practitioners, whatever their therapeutic principles may be, a bar will be placed to the admission to our ranks of uneducated men who know nothing and care nothing about anatomy, physiology, or pathology, but seek only for the legalization of the peculiar system of therapeutics which they profess to follow. If the three-board system is preserved it is only a question of time when it will be a four-board, a six-board, or a ten-board system. There will be the regular board—we use the term "regular" as a synonym for the incorrect word "allopathic," and disclaim any arrogance in the assumption of the title—the homeopathic board, the eclectic board, the osteopathic board, the naturopathic board, the mechanicotherapeutic board, the optometry board, the christian science board, and heaven knows what board, and the whole system of medical licensure in this State will be reduced to an absurdity. If there is a single board for examination on all branches of medical science, except materia medica and therapeutics, those who seek recognition for their peculiar tenets will have equal rights with all other practitioners. They have only to give proof that they are grounded in the essentials of medical science and then they can treat disease by drugs, by vibration, by replacing dislocated bones and tendons, by fitting glasses, by denying the existence of disease, or by taking the fee and doing nothing—and will all be equally liable to suits for malpractice if they mistreat their patients. All men will then be born equal in medicine and the race will be to the swiftest and to the one who is the most skilful in the treatment of disease and the alleviation of suffering. Nothing could be fairer than this. There will be then no monopoly in the art of healing and the door of medical practice will be open to every man or woman who has the educational key.

The single board bill in the Senate is No. 154, that in the Assembly is No. 160, and we would urge all our readers of whatever school of practice, who love their profession and long for its unification, to write to their representatives in both Senate and Assembly begging them to vote for this most commendable measure.

A SUBSTITUTE FOR THE CATGUT LIGATURE.

It has been said that the treatment of hemorrhage is the foundation of all surgery, and this requirement has been most fully met by one of Lister's greatest inventions, the absorbable catgut ligature. The material so successfully used in arresting hemorrhage by ligation of the bleeding vessels has served an equally important purpose in enabling the surgeon to unite structures severed by operation or accident by the employment of the absorbable buried suture. Catgut was used as a ligature and suture material before Lister's time, but it was his mode of rendering the gut sterile which permitted results to be attained never before possible. The early methods of sterilizing catgut possessed many drawbacks, but now by a gradual process there has been evolved a series of procedures which render the material practically sterile without impairing its tensile strength. The term sterile must be used advisedly, however, as localized infections may follow the use of catgut ligatures even under the strictest precautions. This led to the abandonment of catgut and a return for a time to the use of silk for these purposes. This always constitutes a foreign body in the tissues, the presence of which is

often resented, sometimes months and years after its introduction. Metallic sutures, silkworm gut, horsehair, etc., may all be included in the same class, for they all have the same disadvantages as buried sutures. Senn, in a recent article in *Surgery, Gynecology, and Obstetrics*, for December, 1906, refers to the ideal suture material as an animal tissue which can be made sterile by some effective means, which will not only destroy the existing bacteria, but will also neutralize the toxins which may have been generated in the dead tissue. A material of this kind must also possess the necessary tensile strength to meet the mechanical indications for a certain length of time, until the processes of repair have rendered its presence superfluous.

Catgut by no means fulfils all these indications, and yet it has held the field against substitutes which have been introduced successively during the course of many years. The source of the material and its preparation offer many opportunities for error which are familiar to every surgeon. Among the substitutes which have been suggested are the compact nonelastic tendons of some of the larger land and sea animals. Of these, kangaroo tendon, championed for many years by Dr. Marcy of Boston, has been the most widely used, and with general satisfaction. It may be thoroughly sterilized, but if used extensively the supply would soon give out. Dr. Senn in his paper suggests the use of tendons secured from some of the larger Arctic mammalia, which he has employed with good success. Material was procured from the whale, the narwhal, the walrus, and the seal, and after being dried and stripped it was treated with iodine in the usual manner. The results from the employment of these materials as buried sutures were excellent, and Senn was impressed to such a degree that he considers it superior to the tissue of all land animals, from both the anatomical and the bacteriological standpoints. It is apparently not so difficult to procure as would at first appear, for the natives of these regions use it constantly for their own purposes. If it can be made commercially available it is possible that it may be found to be an efficient substitute for catgut, which is quite generally acknowledged to be far from ideal.

GASTRIC ULCER IN CHILDREN.

A STUDY of post-mortem statistics shows that gastric ulcer is relatively uncommon in children, as compared with its frequency in adults, yet it appears to exist more often than is recognized by clinical examination. Hemorrhagic erosions, follicular ulceration, tuberculous and simple ulcers have all been demonstrated in children, but the symptomatology is very defective, as the greater number of cases have been demonstrated only accidentally at autopsy. Adler, writing in the *American Journal of the Medical Sciences* for January, 1907, has collected the available literature and subjected the same to analysis in addition to reporting a case which came under his own observation. Pain and tenderness were not often noted in the acute cases, but were present in most of the chronic cases. The pain was not severe, and was usually localized in the epigastrium. It was always paroxysmal, came on after meals as a general rule, and was relieved by vomiting. Hematemesis was noted in 40 per cent. of the cases in which histories were obtained, and in some cases was the immediate cause of death. Symptoms of indigestion were rarely noted, and then only in the chronic cases. Diarrhea was a prominent symptom, being present in almost one-half of the acute cases. A striking feature of acute ulcer in children is the large percentage of perforations, the symptoms of which are sharp, sudden pain in the abdomen, vomiting, and collapse, with death occurring in thirty-six hours.

The possibility of the presence of this condition should lead to the exercise of great care in the diagnosis of obscure gastrointestinal symptoms in infants and young children. The finding of blood in the stools and vomitus is probably the most certain means, but here care must be taken to eliminate all the other causes of hematemesis and melena, for these may be found associated in children with any one of a number of disease processes. With the advances which have been made in the recognition of occult hemorrhages, ulcer of the stomach in children will probably be more frequently recognized at an early stage in the disease when the application of curative measures may still prove of value. At any rate, in children suffering from chronic stomach disorders the possibility that their disease may be gastric ulcer should always be borne in mind.

THE TREATMENT OF BENIGN TUMORS OF THE BLADDER.

REFINED methods of diagnosis in diseases of the bladder, particularly the development of cystoscopy by Nitze and others, have demonstrated that the number of nonmalignant vesical growths is much larger than was formerly believed to be the case. The older statistics have shown that apparently only 0.30 per cent. of all bladder tumors were benign, whereas Nitze found that among 399 vesical tumors examined by him 177 (or 44.3 per cent.) afforded no evidences whatever of malignancy. This diagnostic conclusion seems supported by the result of the therapeutic procedures evolved in accordance with these findings. Nitze has developed the intravesical operation in order to meet the conditions presented by pediculated, benign tumors, not too extensive in size, and as a substitute for suprapubic cystotomy. His statistics, as shown in a recent paper by Weinreich in the *Archiv für klinische Chirurgie*, Vol. 80, No. 4, disclose that among 101 cases treated in this manner, a cure was effected in 70, and in only 18 did recurrences take place. Of course these patients were operated upon soon after the first symptoms were noted, and the growths were usually small, but the results show the feasibility of an operation which can be carried out with much less trouble and annoyance than suprapubic section, and gives equally good results.

It is generally assumed that the greater proportion of these benign tumors of the bladder soon become malignant, and for this reason regular cystoscopic examinations after the operation are indicated. As regards the possibility of postoperative hemorrhage, experience with this series of cases has shown that the danger is exaggerated, and that

it is not necessary to tamponade through a cystotomy wound in order to control the bleeding, as claimed by Cathelin. The intravesical method developed by Nitze will by no means entirely supplant the suprapubic route, but with the proper indications present it seems rational to employ it before resorting to the more radical procedure. It is self-evident that it can be done, however, only by a specially qualified operator, and this seems to constitute the sole drawback to its general adoption for the purposes indicated.

The Effect of Quinine on the Uterine Contraction.

Differences of opinion have long existed among obstetricians in regard to the value of quinine as an oxytocic, and while some observers have lauded it as a useful uterine stimulant others have considered it either of no value for this purpose or at best unreliable in its action. A comprehensive summary of these conflicting views is presented in the *Deutsche medizinische Wochenschrift*, January 31, 1907, by Mäurer, who also reports his own experiences with the drug. He administered it in sixty-three cases during labor and fifteen times in the treatment of abortion. In 78.2 per cent. of the cases he considers that an effect was produced which was the result of the medication and in the remaining 21.8 per cent. it appeared to be without efficacy. His experience leads Mäurer to believe that quinine undoubtedly strengthens the uterine contractions and perhaps may induce their onset, but that it shares with other oxytocics the disadvantages that its effects cannot be guaranteed in every case. According to Mäurer's experience its administration is not attended by any untoward action on either the mother or child, and the uterine contractions evoked are physiological in character. In explaining its mode of action he assumes that, granted a normal uterine musculature, in cases of inadequate contractions there is a lessened susceptibility of the muscle to stimuli and the quinine serves to increase the irritability of the organ to the nervous impulses in question. It was found that the nature of the quinine preparation is of no importance and that it may be given either by mouth or hypodermatically. Mäurer's routine method is to give one gram of the sulphate by mouth and if no effect is manifest at the expiration of an hour to give 0.5 gram more. If there is still no improvement in the conditions this dose is repeated in half an hour, but if this is ineffectual the patient is regarded as having an idiosyncrasy that renders her insusceptible to the influence of the quinine.

Heredity in Gastric Ulcer.

The ingenuity of theorists and experimenters has been so severely taxed in endeavoring to furnish a satisfactory explanation of the etiology and manner of formation of the so-called peptic ulcer of the stomach that it is a little remarkable that more efforts have not been made to introduce the element of heredity into the question. In a recent communication in the *Münchener medizinische Wochenschrift*, January 29, 1907, attention is drawn to this factor by Huber, who gives brief résumés of thirty cases in support of his opinion that a hereditary predisposition to the affection frequently exists. His own cases are eleven in number and form about fifteen per cent. of all the patients with ulcer of the stomach treated by him since January, 1905. The other nineteen histories were furnished by Bernhard, who believes that the element of heredity was present in about a third of the cases seen by him in the course of a long series of years. While some of the cases quoted by these authors can hardly be regarded as affording particularly good evidence in support of their views, in others the occurrence of the same affection in numerous closely related persons seems to be the result of rather more than mere coincidence. Huber dos not attempt to draw direct conclusions from the statistics he has collected, but offers the suggestion that possibly the explanation of the mode of origin of the affection is to be found in an inherited disorder of the innervation of the stomach, involving particularly the trophic impulses and in this way through the agency of some immediate exciting cause giving rise to the ulcerative process. In further support of his views he points out the much greater frequency of gastric ulcer in some regions, such as in the Engadine and in Thuringia, but it must be admitted that this is a pretty weak argument, for many other predisposing causes besides inbreeding may be active in circumscribed geographical districts.

Physiological Salt Solution as an Irrigating Fluid.

More doubt is being cast from day to day on the actual value of antiseptic solutions for purposes of irrigation in external wounds or in lesions of the accessible internal organs. The rational procedure would appear to consist in the use of a nonirritating fluid, the effect of which would be largely mechanical. These qualities are well met by the ordinary physiological salt solution, but in the desire to gain an antiseptic action, which has been greatly furthered by the numberless remedies of this character which have been placed on the market, this has been almost entirely forgotten. Pasteau (quoted in the *Medico-technologisches Journal*, 1907, No. 1) makes a plea for the use of the decinormal salt solution, particularly in genitourinary surgery, and considers that its advantages are sufficient to commend it as superior to all the other drug solutions. Among these are its absolute blandness and lack of irritating effect on the mucous membranes, which is present with the use of even the most dilute solutions of other materials ordinarily employed for this purpose. In using salt solution for bladder irrigation, it also has the advantage of dissolving blood clots and accumulations of pus, and thus facilitating their removal, whereas the action of most antiseptics is one of coagulation. Another point in its favor is that when some of the solution is left in the cavity irrigated, whether accidentally or by design, its absorption will have no deleterious effect on the organism. The case with which the solution may be prepared is another great point in its favor, as it is not essential to employ an absolutely sterile solution, for if used soon after being subjected to a half-hour's boiling, it fulfils all practical requirements.

Human and Animal Tuberculosis.

Few reports have evoked greater interest than that of the Royal Commission on Tuberculosis which receives lengthy editorial comment in a recent issue of the *Lancet*, February 9, 1907. The commission has found that "marked differences are met with between bovine tuberculosis and certain strains of

human tuberculosis in respect of their infective ability to certain lower animals (in particular to calves); but practically speaking the difference, where it exists, is always in one direction; whatever the animal in question the tubercle of bovine origin has the greater virulence. The experiments have extended to anthropoid apes which have been found readily susceptible to bovine infection. No reason has been shown for inferring that man alone possesses a specially lessened susceptibility to tuberculosis of bovine origin." The writer in the *Lancet* further says that "we are forced to conclude that it is more than ever necessary to take active steps to minimize the risk which the public runs from tuberculous food and tuberculous milk. We cannot be content to tell the public to boil or sterilize all its milk. We know from experience the limited utility of such advice. We want milk free from tuberculous infection as its source." This want, like many other human desires, is at present somewhat difficult of realization. What we want, and can get, is milk free from tuberculous infection—at its source if possible, but before it is delivered to the consumer at all events. The finding of the Royal Commission on Tuberculosis emphasizes the danger of tuberculous milk and the necessity of pasteurization of all milk derived from suspicious sources.

The Efficiency of Digitalis Preparations.

Although digitalis is one of our most valuable and widely used drugs, its administration is accompanied by so many uncertainties that it has fallen greatly in medical estimation and substitutes and derivatives without number have been brought forward to take the place of the older preparations. Efforts have at the same time been made to determine the reason for the uncertain and irregular action of the drug which is so often noted. Lowy, a well known Austrian pharmacologist, studied the effects of the infusion on frogs by injecting the same into the lymph sacs of the legs and then determining the time at which systolic contractions ceased (*Wiener klinische Wochenschrift*, No. 39, 1906). In order to study the influence of the constituents of the gastric juice on the efficiency of the infusion, pepsin and hydrochloric acid were added to the latter. It was shown that the strength of the infusion distinctly declined when hydrochloric acid was added in the proportion found in the gastric secretions, while the effect of pepsin was comparatively unimportant. A solution of strophanthus on the other hand was not at all affected by even stronger solutions of the acid. It was also found that at the ordinary room temperatures an infusion of digitalis lost about half of its original efficiency within twenty-four hours. This is apparently due to the presence of an organic acid which is developed during this time, and it may in most cases be inhibited by neutralizing the fluid. This record simply furnishes another instance of the necessity of preparing infusions of digitalis fresh for every prescription and points also to the need of an addition of soda solution in order to neutralize the infusison and prevent, if possible, the changes already alluded to. In general it is better to use the active principle of a drug, when it can be obtained in stable form and in definite strength, but in the case of digitalis many practitioners believe an effect can be obtained from the use of an infusion of the entire drug which it is impossible to produce with digitalin or others of the active principle preparations. Lowy's discovery of the cause and remedy for the determination of the infusion promises, therefore, to be of value in cardiac therapeutics.

Relation of Birth Rate to Population.

In a recently published report on British vital statistics, the Registrar-General, Sir William Dunbar, expresses the opinion that moderate birth rates, associated with low mortality among children, may be more effective toward keeping up the population than high rates associated with high mortality. He asserts that a high birth rate does not necessarily involve a larger effective addition to the population than does an average or even a low birth rate. In too many cases high birth rates are associated with excessive sickness and mortality during the first few years of life, the result being that fewer than the normal proportion of children survive for five years, while those who do survive have fallen below the normal standard of physical fitness. The statistics gathered have led to the conclusion that during the past thirty-five years about seventeen per cent. of the decline in the birth rate was due to a decrease in the proportion of young married women. About ten per cent. was due to a decrease in illegitimacy, while regarding the remaining seventy-five per cent. of the decrease, although a proportion was due to reduced fertility, ascribable to changes in the age and constitution of married women, there is little doubt that the great part was due to deliberate purpose.

News of the Week.

Army Medical Corps Examinations.—Preliminary examinations for appointment of assistant surgeons in the army will be held on April 29 and July 29, 1907, at points to be hereafter designated. Permission to appear for examination can be obtained upon application to the Surgeon-General, U. S. Army, Washington, D. C., from whom full information concerning the examination can be procured. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examination of April 29, applications must be complete and in possession of the Surgeon-General on or before April 1. Early attention is therefore enjoined upon all intending applicants. There are at present twenty-five vacancies in the medical corps of the army.

Examinations for Positions in the Marine Hospital Service.—The Bureau of Public Health and Marine Hospital Service announces that a board of officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, 3 B street S. E., Washington, D. C., Monday, April 15, 1907, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of

a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination of the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. When quarters are not provided, commutation at the rate of thirty, forty, and fifty dollars a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, prospective candidates may address the Surgeon-General, Public Health and Marine Hospital Service, Washington, D. C.

Pasteurization Bill Introduced.—A bill providing for the pasteurization of all milk sold in New York City has been introduced before the Assembly at Albany. By the operation of the measure, the dealing in and selling of any milk in New York City which has not been pasteurized would bring upon the parties handling the milk imprisonment for not less than six months, or a fine of $500, or both. It is provided that the Commissioner of Health shall designate pasteurizing stations to which every quart of milk brought into the city must be taken and put through the process of pasteurization, and that the city must construct such stations. Following the process, a stamp will be put on the receptacle by the health authorities, whereupon the dairy and milk companies and any others whose milk has been subjected to the process may take their milk and start on the delivery thereof. Provision is made for the confiscation and destruction of any milk found to be unpasteurized. Authority is also given for the appointment of a large number of additional milk inspectors. The bill is too sweeping in its provisions, for some of the milk supplied to the city is pure and should not be pasteurized.

Hospital Transfers.—Coroner Harburger of this city, in the course of the discussion before the Assembly Committee at Albany of the Huth bill, a measure providing for the curtailment of the practice of transferring patients from one hospital to another on the alleged ground that this is resorted to in order to keep down the mortality records of the institutions, made the astonishing statement that 15,000 patients yearly are transferred from hospitals while in a precarious condition, and that 5,000 deaths annually are attributable to this cause.

Children's Hospital Society of Chicago.—This Society, with its executive board chosen from the ranks of physicians and those who are acquainted with the conditions, in the few years of its existence has more than doubled the number of beds for children in hospitals, has improved the methods of care, and has secured the cooperation of first rate hospitals and all the prominent charity organizations, and may call upon them for aid from its central office in the downtown district. It not only sees that sick children among the poor have places in hospitals, but it finds homes for the neglected child, shelters for the street boy, and through a milk commission provides pure milk in the districts of tenement houses and has bettered the milk supply for the city, and is urging the foundation of a colony for epileptics. It has cared for 1,100 children in hospitals, and the number of those that seek its ministrations is constantly increasing.

Los Angeles Medical Library.—The formal dedication of the new Medical Library building presented to the Clinical Association of Los Angeles by Dr. W. Jarvis Barlow took place on February 8. Dr. Geo. F. Bovard, president of the University of Southern California, presided, and addresses were made by Dr. Barlow, Dr. Joseph Kurtz, president of the Clinical Association, and Dr. Milbank Johnsen, president of the Board of Trustees. The use of the library is free to all members of the profession, though to provide for its adequate maintenance three graded forms of membership have been decided upon.

Public Lectures on Problems of Insanity.—The fourth of the series of lectures on the above topic, arranged for by the Psychiatrical Society, will be delivered by Dr. Allan McLane Hamilton at the New York Academy of Medicine, on Saturday, March 2, at 8.30 P.M. The subject will be: "The Development of the Legal Regulations Concerning the Insane, with Suggestions for Reforms." The aim of these lectures is to place before the profession and leaders of sociological work the facts with regard to insanity, which point to the possibility and duty of initiating some broad movement with a view to preventive measures.

The Death Rate in England and Wales during 1905 was the lowest on record, and only four other European countries make a better showing. The deaths of fifty-eight reputed centenarians, forty-seven of whom were women, were reported during the year.

The Crocker-Doyen Suit.—The First Tribunal of the Seine on February 23 rendered its decision in the case of George Crocker against Dr. Doyen, by which Mr. Crocker sought to recover a $20,000 fee which he paid to the French surgeon in 1904 in the expectation that he could cure Mrs. Crocker of a cancer, alleging that Dr. Doyen obtained the large fee from him by "moral violence." The court held that the good faith of Dr. Doyen had been wrongly attacked and condemned the plaintiff to pay the costs of the action. The contract, it was pointed out, had been freely entered into by the parties concerned, and, therefore, could not be annulled unless Dr. Doyen failed to perform his duty, which was not the case, as he withdrew at Mr. Crocker's request and was ready at all times to resume his treatment of Mrs. Crocker. The court further declared that it could not decide the question of the reasonableness of the fee, but only that of the validity of the contract.

Counter Prescriber Prosecuted.—The first arrest under the New Jersey law providing against

the prescribing for sick persons by druggists was made last week in Bayonne, the City Physician, acting in behalf of the Health Board, being the complainant. The offending druggist pleaded ignorance of the law and was dismissed with a reprimand.

Centenarians.—A resident of Montreal, Canada, died on February 20 at the alleged age of 111 years. It is stated that he never had carried an umbrella and that he was a constant user of tobacco, smoking before breakfast every morning up to his last illness. The oldest inhabitant of North Carolina died on the same day in Waynesville at the reported age of 112 years. A daughter, aged ninety, survives him.

Multiple Pregnancy.—From Middlesborough, Ky., comes the report that the wife of a Polish miner living at Fort Ridge on February 21 gave birth to five children, three girls and two boys, who are all living.

Meningitis in Great Britain.—The number of cases of cerebrospinal meningitis in the Glasgow outbreak is now well over two hundred, and more than one hundred and nineteen deaths have been reported. In Edinburgh there have been twenty-five cases and twenty-one deaths. The total number of cases in Scotland this year exceeds three hundred, with a mortality of about fifty-five per cent. In addition, one hundred cases with fifty-five deaths have occurred in Belfast, and cases are also being reported from Liverpool.

Famine Conditions in Russia.—The Red Cross makes the statement that as the reports of the pitiable condition of the famine sufferers of Russia, who number from twenty to thirty millions, have been officially confirmed, the organization will actively engage in the collection of funds for their relief. The administration of the relief work will be carried out by the Russian Red Cross. Contributions should be made payable to and addressed to Red Cross, War Department, Washington, D. C.

Smallpox in Missouri.—Four persons attached to the House of Representatives in Jefferson City are down with smallpox, the infection having been conveyed, it is thought, through a member of the House who was taken ill during a session and was discovered to be suffering from the disease. The Jefferson City Board of Health states that there are thirty cases in the city.

Trichinosis on the East Side.—Eight cases of trichinosis have lately come under observation in Bellevue Hospital, all of the patients being residents of the neighborhood around First avenue and Third street.

Mica Post Cards Not Mailable.—The Post-Office authorities have decided that post cards ornamented with particles of mica, glass, or similar substance are likely to cause injury to the postal employees either through inhalation of the detached particles or in other ways, and they have accordingly been excluded from the mails unless inclosed in envelopes.

Home for the Destitute Blind.—A concert for the benefit of the Home for the Destitute Blind will be given at the Waldorf-Astoria on Monday, March 4, at 3.30 P.M. Attached to the institution is a workshop for the blind inmates, and the purpose of the concert is to aid in enlarging this shop. All the expenses of the concert will be met by some of the managers of the home, and the entire proceeds will go to the charity.

Dr. Edward W. Ryerson was recently appointed attending orthopedic surgeon at St. Luke's Hospital and orthopedic surgeon at the Children's Memorial Hospital, Chicago.

Dr. Walter J. Marciey, former superintendent of the Massachusetts State Sanatorium in Rutland, was presented a loving cup by patients, former patients, officers, and employees of the institution recently.

Dr. Seymour Oppenheimer has bee laryngologist and otologist to the Syd pital.

No Canteen for Soldiers' Homes.— of Representatives, on February 23 by a vote of ninety-one to eighty-six, adopted an amendment to the Sunday civil bill providing for the abolition of the canteen in all national homes for disabled soldiers. This was in spite of the statements of governors of homes, chaplains, surgeons, and other officials favoring the maintenance of the canteen, which had been presented to the Committee on Appropriations.

Coming Events Cast Their Shadows Before.—The following is from the recent presidential address of Dr. Joseph Decatur Bryant, ex-President of the Medical Society of the State of New York, but President-elect of the American Medical Association: "The editorial policy of a journal of mutual constituent ownership, like this of ours [the *New York State Journal of Medicine*], should be guided by the composite wisdom of an impartial committee chosen for the purpose, rather than by the notions of the editor himself, as in the instance of personal proprietorship."

National Association for the Study and Prevention of Tuberculosis.—The third annual meeting of this association will be held at the New Willard Hotel, Washington, D. C., May 6, 7, and 8. The organization of the sections for the meeting is as follows: Sociological Section, Mr. Paul Kennaday, New York, Chairman; Mr. Christopher Easton, New York, Secretary; Clinical and Climatological Section, Dr. George Dock, Ann Arbor, Chairman; Dr. Joseph Walsh, Philadelphia, Secretary; Pathological and Bacteriological Section, Dr. F. F. Wesbrook, Minneapolis, Chairman; Surgical Section, Dr. W. S. Halsted, Baltimore, Chairman; Dr. Hugh H. Young, Baltimore, Secretary; Section of Tuberculosis in Children, Dr. T. M. Rotch, Boston, Chairman.

The New York Physicotherapeutic Association.—An association bearing this title was organized on February 1, 1907, by the adoption of a constitution and by-laws, and the election of the following officers: *President*, Albert C. Geyser, M.D.; *Vice-President*, W. L. Heeve, M.D.; *Secretary and Treasurer*, Hills Cole, M.D. The following were present at this organization meeting: Drs. Brinckman, Boskowitz, Hills Cole, Geyser, W. L. Heeve, Wm. Harvey King, and H. E. Waite; and these together with Drs. Dieffenbach, Meacham, and Sillo will be the charter members. The constitution provides for active, associate, and regular honorary members. Active membership is opened to legally qualified practitioners of medicine and surgery in good standing, practising in New York City or its vicinity. Meetings will be held on the second Friday of each month, except in July, August, and September. The dues are two dollars a year.

Cincinnati Academy of Medicine.—Dr. Geo. W. Crile of Cleveland, Professor of Surgery in the Western Reserve University and Surgeon to the Lakeside Hospital, was entertained by the Cincinnati Academy of Medicine on February 18, 1907. Dr. Crile addressed the society on "An Experimental

and Clinical Research on Direct Transfusion of Blood." He described some brilliant results of his experimentation in this direction, and reported cases in detail. The academy will hold its annual election of officers on March 4, and a banquet celebrating its semi-centennial on March 5, at the New Hotel Sinton. The valedictory of the retiring officers and inaugural of the incoming officers will take place on March 11.

[illegible]erence.—A meeting of the Hospi[illegible] was held at the New York Acade[illegible]e, on Wednesday, February 27, at [illegible]M. The following special program [illegible]pared: "The Milk Supply of a Hospital," Dr. S. T. Armstrong, General Medical Superintendent, Bellevue and Allied Hospitals. "How Should the Ambulance Service of Greater New York Be Organized?" Mr. Homer Folks, Secretary, State Charities Aid Association.

National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The next meeting of this association is, by invitation of the General Board of Directors of the State Hospitals of Virginia, to be held in Richmond on October 23 and 24. A specially attractive program will be offered, so arranged by topics that it will be convenient for each member to attend to the reading and discussion of such portions as especially interest him, while it will also allow opportunity for each person to see something of the Jamestown Exposition, before, during, or after the meetings. Those intending to present papers at the meeting are requested to communicate promptly with the secretary, Dr. J. F. Munson, Sonyea, N. Y.

Congress of Polish Physicians and Scientists.—The tenth Congress of Polish Physicians and Scientists will be held at Lemberg, Austria-Poland, July 22 to 25, 1907. Dr. Francis E. Fronczak of Buffalo is to represent America at the Congress.

Mississippi County (Ark.) Medical Society.—At the recent meeting of this society, held in Blytheville, officers were elected as follows: *President*, Dr. C. C. Stevens of Blytheville; *Vice-President*, Dr. O. Howton of Osceola; *Secretary and Treasurer*, Dr. T. G. Brewer, Osceola.

The "Long Island Medical Journal."—Under the editorship of Dr. Paul M. Pilcher this new and attractive publication makes its appearance in place of the *Brooklyn Medical Journal*. The *Journal* publishes the Transactions of the Associated Physicians of Long Island, the Brooklyn Surgical Society, and the Brooklyn Pathological Society. The initial number was devoted to the surgery of the peritoneum and the current issue is devoted to a discussion of anesthesia. It has been rebuked by the Secretary-Editor of the *Journal of the American Medical Association* because of the advertisements it carries, but as Dr. Bryant, the President-elect of the Association, is being roundly scolded by one of the official State medical journals because he tacitly approves of the "unethical" advertisements in the *New York State Journal of Medicine*, the honors seem to be easy.

Clinics at the Elgin (Illinois) Insane Asylum.—Recently Speaker Shurtleff of the Illinois Legislature introduced resolutions which aimed at the prohibition of clinics in the Hospital for the Insane at Elgin.

Obituary Notes.—Dr. J. Clark Thomas of this city died in Los Angeles, Cal., on February 20 at the age of sixty-three years. He was graduated from Yale in 1864 and four years later received his medical degree from the College of Physicians and Surgeons in this city. He served as interne in Bellevue Hospital and had practised in this city for about thirty-five years.

Dr. George H. Nichols of Brooklyn died suddenly on February 17 in Stamford, Conn. He was born in Plainfield, N. J., in 1863, and was graduated from the University of New York. Four years ago he was appointed a member of the Board of Education.

Dr. A. R. Alley of Atlanta, Ga., died on February 21 at the age of sixty-three years. He was a Confederate veteran and had practised in Atlanta for many years.

Dr. Joseph O'Shea of Paterson, N. J., died on February 20 of tuberculosis at the age of thirty-three years. He was a graduate of Seton Hall College and received his medical diploma from the Bellevue Hospital Medical School in 1896. He had been for four years medical school inspector.

Dr. Henry Z. Gill of Long Beach, Cal., died on February 7 at the age of seventy-six years. He occupied several medical posts during the Civil War and in 1864 was made surgeon-in-chief of the First Division of the 20th Army Corps, with the rank of Lieutenant-Colonel. He wrote a surgical history of the Civil War and a work on the Confederate prisons. He had been a resident of Long Beach for about five years.

Dr. F. S. Cowles of Essex, Conn., died on February 12 at the age of thirty-seven years. He was born in Rome, N. Y., and received his professional education in the Yale Medical School. He practised for a time in Durham, Conn., and about four years ago removed to Essex.

Dr. Thomas M. Woodson of Gallatin, Tenn., died on February 12 at the age of seventy-eight years. He was graduated from the University of Louisville and practised in Bethpage, Tenn., until 1874, when he removed to Gallatin. He retired from active life about five years ago on account of ill health.

Dr. William A. Butman of Somerville, Mass., died on February 11 of pneumonia. He was born in Fairhaven in 1869 and received his medical education from the University of Baltimore. He practised for a time in Boston and removed to Somerville a short time ago.

Dr. Oscar Gaudet of Convent, La., died on February 7 at the age of sixty-eight years. He was a graduate of the University of Virginia and served in the Confederate Army. At the close of the war he began practice in St. James' parish and served a number of terms as coroner of the parish.

Dr. J. T. Marsh of Kansas City, Mo., died on February 9. He was born in Clay County in 1833 and was graduated from William Jewel College and Westminster College, Fulton, Mo. He had practised in Kansas City for over forty-five years.

Dr. C. B. Greenfield died in Honokaa, Hawaii, on January 18 at the age of sixty-three years. He was born in England and was a former surgeon in the Royal Navy. He had lived in the islands many years.

Dr. Frank W. Talley died at Philadelphia on February 17 at the age of forty-two years. He was graduated from the medical department of the University of Pennsylvania in the class of 1887 and subsequently served as resident physician in the Philadelphia Hospital. He pursued post-graduate studies abroad and on returning became assistant in gynecology in the Philadelphia Polyclinic and gynecologist to St. Agnes Hospital.

Dr. Ellerslie Wallace died at Philadelphia on February 17 at the age of fifty-eight years. He was a son of the distinguished obstetrician of the same name, who was formerly professor of obstetrics in Jefferson Medical College.

NINTH HARVEY SOCIETY LECTURE.

The ninth of the present series of lectures under the auspices of the Harvey Society was held at the Academy of Medicine on Saturday, February 23, the speaker being Prof. W. J. Councilman of the Harvard Medical School. The title of the lecture, as it had appeared on the announcements, was: "The Relation of Certain Leucocytes to Infectious Diseases," but this was changed by the lecturer to "Some Changes in Lymphoid Tissue in Certain Infectious Diseases." The original title was very misleading and certainly gave no clue to the subject matter of the lecture, which was a highly finished pathological study along morphological lines.

The speaker began by saying that as long ago as 1898 he had called attention to a form of nephritis associated with acute infectious diseases. The condition had been described by others previously, but not sufficient attention had been paid to the subject. The speaker then gave a very lucid account of the morphological changes which such a kidney manifested. Among these were areas of greater or less diameter which projected above the cut surface. These areas were usually situated in the cortex, which frequently was three or four times the usual thickness. The size and weight of the kidney were occasionally enormously increased, though, as a rule, the increase was only slight. On section an opaque milky fluid exuded. The areas protruding above the cut surface were found to consist of a deposit of lymphoid cells. These cells varied considerably, but could in general be divided into three classes: (1) Small lymphoid cells of the usual type; (2) the most numerous type were cells varying from 6 to 15 microns, and having a rather vesicular nucleus usually placed eccentrically; (3) cells corresponding to plasma cells.

Prof. Councilman described each type in detail, giving the staining, reactions, etc. None of the cells showed any characteristically staining granules. All of them were ameboid, the lymphoid type cell probably the least so.

The areas were truly cell deposits, for cells of this type were not found in the kidney tissue. Similar interstitial deposits of lymphoid cells were also frequently found in the adrenal and sometimes in the pancreas and in the lungs. They were most common in children in infections of diphtheria, scarlet fever, and smallpox.

The immense accumulation of these cells led to a disorganization of the tissues, though often the latter appeared entirely normal. The presence of mitotic figures was evidence of rapid proliferation after they had been deposited. Since these cells could not originate locally they must come from the blood. At first Councilman believed that the reason for their deposit was mechanical, due to conditions of pressure in the blood-vessels. He now believed that there was a positive chemotaxis which attracted the cells and led to their deposit.

The cells described above had not been described by the hematologists. The nearest approach to them was perhaps the cell described by Türck under the name of irritation cells. They had no specific granules, were mononuclear, and according to Türck, originated in the bone marrow. Prof. Councilman believed that the cells he had described originated in the lymphoid tissues, and went on to describe in detail the structure of lymph nodes. In these, among other cells, were found certain masses of cells which had first been carefully described by His and later by Flemming. His regarded them as masses of germinal cells. They were more abundant in young children, later in life the lymphoid tissue was much less active. The transition between the germinal cells and the small lymphoid cells could be traced.

Oertel had been the first to show that in diphtheria there were small foci of necrosis in the lymph nodes and that these corresponded to the germinal masses. A similar condition had since been found in scarlet fever. The destruction of the cells in these cases was due not only to the vulnerability of the cells, but to the large capillary supply leading to considerable transudation. With this destruction there was an accumulation of phagocytic cells in the form of a nodule, which looked something like a miliary tubercle. It did not, however, caseate. Most marked changes were found in the germinal cells in the tonsils.

During this time the lymph nodes showed evidences of marked activity. The new formed cells entered the blood-vessels, since they were all ameboid. From the blood-vessels they passed into the various tissues, forming interstitial foci, especially in the kidney, liver, and adrenal body.

The speaker continued by considering the lymphoid cells as they occurred in the blood. He spoke of the various theories and schemes which the various hematologists had devised and which, after all, were nothing but theories. He discussed the three types of cells, polynuclear, lymphocytic, and transitional, and pointed out that the great difference between the two former was that the lymphocytic were never phagocytic. The phagocytosis of the polynuclear was eminently microbic, that of the transitional cell chiefly cellular. He stated that an indifferent cell was apparently the parent of both the myelocytic and the lymphocytic type. The type produced would seem to depend on the location.

Correspondence.

THE RADICAL CURE OF TRIGEMINAL NEURALGIA.

To the Editor of the Medical Record:

Sir:—In your issue of February 23, Dr. M. Allen Starr endeavors to correct many of the "errors" in my article on "The Radical Cure of Trigeminal Neuralgia by Means of Peripheral Operations," published in the Medical Record of February 16. In the opening sentence of that paper I referred to a previous communication, entitled "The Surgical Treatment of Trigeminal Neuralgia," which appeared in the Medical Record of September 29, 1906. This paper discussed in greater detail points that appear in summary in the subsequent report. I am sure that, had Dr. Starr taken the trouble to read this, he would have found his criticisms in a large measure answered. I shall, however, take each of his statements singly, and discuss them in order.

1. After first introducing one of my conclusions, "We know nothing of the pathological anatomy of trigeminal neuralgia," Dr. Starr says: "This statement ignores the very complete and positive results published by Keen and Spiller." I did not intend to imply when I said that "we know nothing of the pathology of trigeminal neuralgia" that no work had been done upon this subject. When I set out to write my original article, I collected upon the subject of pathology of trigeminal neuralgia alone a page and a half of references on this subject. I read over and summarized the most important of these articles, twenty-eight in number, and reported them with references in my original communication of September 29, 1906. I found that the opinions were divided about equally as to whether the disease lies in the Gasserian ganglion or in the peripheral nerves, or whether any pathological changes exist at all. In reading over these reports, one fact is strikingly apparent, namely, that no two observers agree, and that,

therefore, there are as many views on the pathology of trigeminal neuralgia as there have been investigators. Now, it is a well recognized axiom in medicine that wherever there are many views or theories about a disease, none is conclusive. It is therefore not an illegitimate conclusion to say that "we know nothing of the pathology of the disease." Coming more specifically to Dr. Starr's statement that I "ignore the very complete and positive results published by Keen and Spiller, and subsequently confirmed by them, and by Thomas, and by Redlich," I shall not deny that the changes observed by Keen and Spiller were noted by them. In my original article of September 29 I quoted the results of Keen and Spiller, and even stated their conclusions in their own words. It is interesting, however, to learn that Dr. Starr finds their results "complete and positive." If these findings are "complete and positive," and the disease lies within the Gasserian ganglion, why did Keen subsequently advise merely division of the sensory root for the cure of trigeminal neuralgia? Also, why have their observations not been confirmed and accepted by subsequent observers too numerous to mention? I need only name, among others, such observers as Hutchinson and Cushing. The statements of these authors are particularly interesting because they are advocates of the intracranial operations. Cushing says: "No lesion sufficiently characteristic to consider it typical of a particular disease is present." Nor can it be overlooked, as has been pointed out by other observers, that the changes in the Gasserian ganglion or peripheral nerves may be secondary products, and not primary. These secondary influences may be (1) traumatism, due to the necessary manipulations in the course of extirpation; (2) incomplete preservation of the ganglion; (3) the age of the patient; this could easily account for the endarteritis; (4) ascending changes in the nerve or ganglion as the result of previous peripheral operations. It is rather significant that Monari,[1] Schwab,[2] and Coenen[3] found absolutely normal ganglia in those cases in which no previous peripheral operation had been performed.

To quote the observations of Thomas and of Redlich (these studies incidentally were upon tabetic subjects, and are therefore entirely irrelevant) is entirely a matter of personal taste. We might just as well quote the names of any one of the numerous workers in our list of references, many of them in the first rank of neuropathologists, whose findings have differed from those of Keen and Spiller, Thomas, etc. Not until some definite picture of the lesion in trigeminal neuralgia has been accepted by neurologists will we admit that we know the pathology of trigeminal neuralgia. This condition of affairs, however, is far from the case at present; nevertheless, if Dr. Starr is willing to accept the conclusions of the authors whom he quotes, well and good. The whole question is an academic one, and, as we shall see, has little bearing on the practical issue in question.

2. Dr. Starr quotes again my words: "All proof is lacking that the neuralgia originates in the Gasserian ganglion." In reply he says: "There can be no better proof than the fact, of which I have personal experience in more than a dozen cases, that when operations upon the peripheral branches of the trigeminal nerve fail to relieve (as they always do fail to give permanent relief), an excision of the Gasserian ganglion or a division of the root of the fifth nerve between the ganglion and the pons always cures." To say that, because removal of the Gasserian ganglion abolishes the pain, therefore the ganglion is the seat of the disease, is an argument that is by no means warranted. It is rather surprising to note that Dr. Starr shatters his own argument by the very next phrase, "division of the root of the fifth nerve between the ganglion and the pons always cures." The reason why this operation and the extirpation of the ganglion cures is because the *sensory impulses have been cut off*. This is also the reason why division of the peripheral branches invariably brings about relief. I claim, and I am not alone in this respect, that the reason why peripheral operations fail to give permanent relief is because sensory impulses in time become restored by the regeneration and reunion of the divided nerve. If the disease is in the Gasserian ganglion, how can Dr. Starr explain the temporary relief by peripheral operations at all? And how, also, can he explain the comparative freedom from neuralgia of the ophthalmic division?

3. Dr. Starr states, "I have never seen a relapse when the ganglion was completely and properly removed, etc." Dr. Starr may not have seen such a relapse, but I have collected from the literature the reports of nine cases. Of these, two are reported by Krause himself—a "competent surgeon"—whom Dr. Starr quotes as not having had recurrences. In one case reported by Perthes (*Deutsche Zeitschrift f. Chirurgie*, Vol. LXXVIII.) no less a pathologist than Marchand confirmed the findings.

4. Dr. Starr says, "These statements refute absolutely the other assertions of Dr. Moschcowitz, which therefore require no notice." Granted—if Dr. Starr's claims are granted—but most emphatically not granted if his other claims are not granted.

5. Dr. Starr says, "Dr. Moschcowitz claims that it is to the regeneration of the peripheral nerve that recurrence of pain is due. That may be true, but I have cases on my records where the pain has recurred after peripheral operation too soon to be due to regeneration." How soon? What proof does Dr. Starr offer that the nerve did not regenerate? Dr. Starr may be unacquainted with the fact that nerve regeneration may, and does take place in as short a time as two weeks. (Ramon y Cajal: Comptes rendus de la Société de Biologie, Vol. LIX., pages 420 and 422.) This whole statement of Dr. Starr is not sufficiently specific.

6. Dr. Starr says, "and other cases where it has recurred when a half inch of the nerve has been resected." That Dr. Starr would regard the resection of even as much as a half inch of nerve, as precluding the possibility of regeneration, indicates that he is unacquainted with one of the earliest discovered facts in regard to regeneration of the peripheral nerves. As long ago as 1845, Dieffenbach abandoned his method of peripheral resection of large segments just because of this regeneration. In one of my early cases complete regeneration of the inferior dental nerve occurred after resection of one inch. Complete regenerations have been found after evulsions of the entire nerve distally to the foramina at the base of the skull. Perthes (*loc. cit.*) experimentally found regeneration after extirpation of 9.5 cm.

7. Dr. Starr says he has seen other cases "in which pain has returned, and at the radical operation no evidence of regeneration or union of the formerly divided peripheral branch has been found." In the first place, I fail to see how an intracranial operation can reveal a condition in such distant parts as the infraorbital or inferior dental canals. Secondly, I have failed to find one authentic instance in literature in which recurrence after peripheral operation took place without regeneration of the nerves. The cases of Dr. Starr should, therefore, be reported in greater detail.

8. Dr. Starr says, evidently in a spirit of adverse criticism, that "the cases cited by Dr. Moschcowitz are both too few in number and are reported far too soon to afford any convincing proof of his statement." Compare this with my conclusion; and was I not just as critical of myself when I said that "I do not present these cases as cured cases of trigeminal neuralgia; the period of observation is altogether too short to admit of this deduction"?

Excluding all the more purely theoretical questions in the issue, three facts in regard to the practical treatment of trigeminal neuralgia stand out, and these Dr. Starr cannot deny: (1) The intracranial operation of Hartley and Krause is one of the severest in surgery, and is attended by a formidable mortality. (2) Everybody agrees that peripheral division of the nerves is attended in every case by temporary freedom from pain in the affected nerves. (3) The peripheral operation is practically free from risk. These considerations, and also the apparent possibility of producing radical cures by peripheral operations, have led surgeons in recent years to turn more and more to the peripheral operations for trigeminal neuralgia, as anyone who has followed the recent literature may note. These recent peripheral operations fall into two groups: (1) those in which no measures are taken to prevent regeneration of the nerves, and (2) those in which measures are taken to prevent regeneration. In the first group we need mention only the methods of Murphy, who advocates the injection of osmic acid; of Laplace, who has resuscitated the evulsion method of Thiersch, and of Schlosser and Kiliani, who advise alcohol injections into the affected nerves. In the second group comes, first of all, the method of Abbe (which, although an intracranial operation, is really peripheral), Perthes, and finally C. H. Mayo. The latter (Peripheral *versus* Intracranial Operations for Tic Douloureux; *Surgery, Gynecology, and Obstetrics*, December, 1906)—surely a competent surgeon—has been using practically the same method that I have described, and moreover performed his first operation long before I published my first report. He reports one case in which freedom from pain existed for a period of seven years; a period that ought to satisfy even Dr. Starr's most exacting conditions. This case is doubly interesting because at the end of this time recurrence ensued, and at the second operation the plug that Dr. Mayo had introduced into the infraorbital canal was found to have slipped out, and the nerve had regenerated.

A. V. Moschcowitz, M.D.
New York.

[1]Monari: *Bruns' Beiträge*, Vol. XVII.
[2]Schwab: *Annals of Surgery*, June, 1901.
[3]Coenen: *Langenbeck's Archiv*, Vol. LXVII.

THE SPECIFIC GRAVITY OF URINE.

To the Editor of the Medical Record:

Sir:—In your issue of February 16 you refer editorially to a letter by Dr. A. W. Brand to the *Lancet* of January 26, in which the writer calls attention to the fact that the specific gravity of the urine varies greatly with its temperature, and states that he has found no allusion to this in any text-book of physiology or clinical medicine.

That this is not an original observation may be seen by reference to the sixth edition of the work of Dr. Charles W. Purdy on "Practical Uranalysis," page 14, wherein is stated: "The temperature of the urine immediately after being voided ranges from 85° to 95° F (29.5° to 35° C.); therefore, in taking the specific gravity of freshly-voided urine, before cooling, its temperature should be observed, and for every seven degrees of temperature the thermometer indicates above that upon which the instrument is standardized, one degree should be added to the specific gravity of the urine, in addition to that indicated by the instrument."

In this connection it may not be amiss to allude to the fact that the specific gravity tests as ordinarily made with the so-called urinometer are so fallacious as to possess very little, if any, scientific value. The instruments themselves are frequently inaccurate, the readings are taken hastily, and no allowance is made for the temperature or for the conditions under which the specimen is voided, as to time, preceding diet, etc. It is the exception, rather than the rule, for the twenty-four-hour average specimen to be tested. Under these circumstances, I contend that the specific gravity observation is practically useless, and might as well be relegated to the rubbish-heap of other perfunctory measures.

Properly carried out, with a balance of the Mohr, Westphal, or Sartorius type and a Wiemann thermometer, using a twenty-four-hour average specimen, the specific gravity reading may be a most valuable source of information, both alone and in conjunction with other findings; but I wish to emphasize the fact that its value is in direct proportion to its accuracy, and unless to it is given the same painstaking care in its estimation that is accorded to other laboratory methods, and unless equally delicate apparatus is employed, it is manifestly improper to expect of it the same measure of results. Gilbert Geoffrey Cottam, M.D.

Rock Rapids, Iowa.

OUR LONDON LETTER.

(From Our Special Correspondent.)

CANCER—TUBERCULOSIS COMMISSION—RED CROSS WORK—IMMUNIZATION DEPARTMENTS FOR HOSPITALS PROPOSED—MILK SUPPLY—AFTER-CARE ASSOCIATION—CEREBROSPINAL MENINGITIS—ITEMS.

London, February 8, 1907.

Cancer in its various respects is still a leading subject in all directions. Dr. Bashford, superintendent of the Imperial Research Fund, in an address at the Epidemiological Society, has drawn attention to the real and apparent differences in the incidence of the disease. Contrary to a common statement, he pointed out that cancer was approximately as frequent a cause of death in Japan as in England, and the notion of its being a result of European civilization was thereby negatived. One phenomenon of universal occurrence in man and animals had more importance than all variations. The increasing frequency of cancer in advancing age was a law applicable to the vertebrates, whether short or long-lived. In childhood the law obtained as to fatal structures. The investigation of cancer could be profitably carried on from the standpoint that (1) its incidence obeyed the definite biological laws which governed the growth and length of life of organisms as a whole or of their individual organs, because it arose *de novo* in each sporadic case; or that (2) sporadic cases are connected by an infecting virus which produces its effects in conformity with the same biological law. The apparent increase in the number of deaths in this country is to be attributed to more accurate diagnosis, and differences in localities may be due to varying age distribution of the population. The differences between several countries in this respect were just those of the accuracy of their vital statistics. The great mortality rate of Switzerland, for instance, is probably explained by the rule that a medical inspection of the body is made. But as the only trustworthy estimation of the frequency of cancer is the national death rate, the collaboration of the Registrar-General's office is most valuable and this has been given freely, and Dr. Bashford acknowledged his indebtedness for it.

Dr. Tatham, president, remarked that though there was little hope that primary growths would be amenable to other treatment than removal, the fact that animals could be rendered unsuitable for the growth of malignant tumors was important, as it might eventually be found that cells disseminated from the site of entrance might be rendered unable to grow. Experimental transference of cancer from one individual to another was no longer to be doubted, but it quite contraindicated expectations, as it was easier to effect in young than old animals. It would, therefore, seem that the frequency in later life was not due to increasing suitability of the soil. Mice could be protected by previous inoculation of cancerous tissue from another mouse, but not from an animal of a different species. It was still more surprising that protection could be obtained by inoculation of healthy tissue, blood, in fact, from one healthy animal into another of the same species. That fact was pregnant with possibilities.

Dr. Payne said it was surprising to find young animals more susceptible than old. Statistics showed indeed a high mortality rate in early life, but he considered that was really due to sarcoma. In reference to the returns of primary cancer of the liver he also thought many of the cases were really secondary.

Dr. Newsholme said statistics proved civilization was not a factor in causation of cancer, nor was meat eating. In fish and animals it occurred in about the same proportion as in man.

Sir Shirley Murphy said the incidence was about the same in rich and poor.

Dr. Dawson Williams said all through fetal life obsolescence of certain tissues was going on and the process continued after birth.

Dr. J. A. Murray gave a microscopical demonstration of experimental and of sporadic cancer in mice.

Writing in *The Hospital*, Dr. Shaw-Mackenzie, who has devoted so much attention to the treatment of cancer, considers the parasitic theory as dead and that the solution of the etiology of the disease will eventually be found in the chemicobiological theory. But considering how our knowledge of cancer is environed with ambiguity springing from undetermined facts, he supports the suggestion made by Mr. Percy Dunn in the *Nineteenth Century* (1893) for the appointment of a Royal Commission on the disease, and goes so far as to say that if such an inquiry had been appointed some years ago we should now have been in possession of information of which use could be made in a preventive sense.

That the parasitic theory is by no means dead is, however, maintained by many. Among them Mr. Jackson Clarke still holds the view he has so long urged that sarcoma and cancer are caused by parasitic protozoa, the study of which he says enabled Schaudinn to discover the microbe of syphilis. The sections of sarcomas in dogs made by the late Dr. Washbourn he still believes to be such in opposition to the views expressed in the report of the Imperial Research Fund.

A second interim report of the Royal Commission on Tuberculosis has been issued. It states that there can be no doubt that in a certain number of cases, especially in children, the disease is the direct result of the introduction of the bacillus of bovine tuberculosis and in the majority of cases this is through cow's milk. Clearly cow's milk containing the bovine bacillus is a cause of fatal tuberculosis in man. Of 60 cases of human tuberculosis investigated 14 were traced to this cause. If attention is confined to cases in which the bacilli were apparently introduced through the alimentary canal, the proportion is much larger. Of the 60 cases the clinical histories indicated this entrance in 28. Of 9 cases in which the cervical glands and of 10 in which the abdominal lesions were studied, 10 showed the bovine bacillus. It is pointed out that the bovine bacillus can be detected, though with some difficulty, in milk. There is less difficulty in recognizing clinically tuberculosis in the cow, and a cow so suffering may yield tuberculous milk. The results point to the necessity of more stringent measures to prevent the sale of such milk.

The rôle of Red Cross Societies was the subject of an address on Wednesday at the Royal United Service Institution by Lt.-Col. Macpherson, R.A.M.C., who sketched the official organization of the care of the sick and wounded, instancing that of the Japanese which he had seen at work in the late war and declared to be a magnificent and efficient machine. Voluntary aid played no part at the front, but a real part at home. The outburst of sentiment in the event of a great national war had to find a vent, and the Red Cross Society collected and retained the flood till it could be utilized to the best advantage. The organizations of European countries having been described, he turned to that of Japan, where, he said, groups of relief or nursing sections were formed, each of 2 doctors, 1 apothecary, 1 accountant, 2 superintendent nurses, and 20 nurses. Each such group could take over 100 patients. At the outbreak of the late war

116 groups were ready, by the end 150. The female sections were 98. In Japan 1 in 45 of the population was a member of a Red Cross Society. None of the work was in the zone of the field army, very little in the line of communications, but 32 male groups did service there or at base hospitals. The peace work of Red Cross societies was to keep ready for mobilization, also to aid in case of a public calamity. Col. Macpherson found in this country excellent material and splendid peace organizations, *e.g.*, St. John's Ambulance Association, the Army Nursing Reserve, the Soldiers' and Sailors' Help Society, the St. Andrew's Ambulance Association, and the British Red Cross Society lent those bodies the required coordination and consolidation of their work. Still more the mode of keeping them in touch with the military authorities in time of peace should be carefully studied.

Sir A. E. Wright addressed a distinguished audience at the Royal Institution on the desirability of establishing at every hospital a department of inoculation or immunization. He told them it was as uncivilized to be carried off by bacterial diseases as to be devoured by wolves, and yet no serious effort had been made to get rid of such diseases. Practically all the work in that direction had taken the form of hygienic precautions. Inoculation was used against smallpox, but that was merely like a nation taking steps to defend itself against only one enemy. The white blood corpuscles had become famous under the name of phagocytes, because of their power of eating bacteria, but this function was very limited if the bacteria were presented to them in a so-to-say raw state. They needed cooking. It had been known for some time that the blood contained three elements which could be said to cook bacteria. A fourth had been discovered by himself and Dr. Douglas which they had named opsonin. Bacterial therapeutics should aim at increasing all four, and he therefore hoped to see an inoculation or immunization department set up by every hospital.

Dr. Cameron, M.O.H. for Leeds, reports the result of an investigation as to the milk supply of the city. He finds a remarkable disparity between the ordinary supply and cooled milk from perfectly healthy cows. In the latter when fresh there were 16,000 germs to a cubic centimeter. In samples taken from shops and railway stations there were 145,000 per c.c. In each case when the milk was just over a day old the number had enormously increased up to 224,000 and 10,000,000 respectively. In regard to tuberculous milk Dr. Cameron reports that by carefully inspecting all cows in the city at frequent intervals the disease had been practically stamped out among the animals, but that was not so in the country farms from which much larger quantities of milk were brought. Until municipalities had power to inspect farms outside their boundaries it would be almost impossible to check the evil. Here is a plain lesson for legislators.

The Worshipful Company of Apothecaries lent their hall for a meeting of the After-Care Association, which was established in 1879 to help poor persons discharged from lunatic asylums. Mr. Parker Young, the master of the company, presided, and was supported by Drs. Wilks and Gorden Brown (wardens) and other influential persons. He described the work and declared no charity was doing more good in a quiet way. It was true the sum spent on individual cases was large, but that was unavoidable, considering the difficulties surrounding the after-care of the insane. Drs. Savage, Blandford, Omsden, and Jones spoke in support of the work, the last named declaring that one out of every ten discharged from lunatic asylums was absolutely friendless. The Bishop of Barking testified as an East End clergyman to the care and wisdom displayed by the association in its prosecution of inquiries. The report was adopted and the council reappointed.

Cerebrospinal meningitis has spread during the week. It has effected a lodgment at Liverpool now; three cases were reported yesterday to the Health Committee of the city. The medical officer of health has issued a memorandum on the disease, advising immediate notification with isolation of both patients and suspects.

At Edinburgh on Tuesday it was stated that nine deaths had been certified since January 12, some of them being traced to Glasgow, in which city the Registrar-General's returns for the week ending on the 2d inst. reported sixteen deaths, as against twenty-two in the preceding week.

At Belfast up to February 1 there had been forty-five cases with nineteen deaths. As I told you the disease has been made notifiable there. An interesting report by Dr. Chalmers, Medical Officer of Health for Glasgow, deals with the disease in that city during the past six years.

A statement has been freely circulated this week that Dr. Donald MacAlister had been appointed principal of Glasgow University in succession to the late Principal Storey. This morning, however, the Press Association says it is requested by the Secretary for Scotland to say that the report is unauthorized. I suppose a short time will reveal the exact meaning to be attached to the phrase.

Dr. S. E. Cockey died at Frome on the 3d inst. in his ninetieth year.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

THE MANILA MEDICAL SOCIETY—SATISFACTORY HEALTH CONDITIONS—CHOLERA—SMALLPOX—CEREBROSPINAL MENINGITIS—MALARIA AMONG THE PRISONERS IN THE IWAHIG SETTLEMENT—PERSONAL.

MANILA, January 14, 1907

INSTEAD of the regular monthly meeting of the Manila Medical Society, a business meeting was held January 7, 1907, for the purpose of electing new officers to serve for the ensuing year. Dr. Percy M. Ashburn, Captain and Assistant Surgeon, United States Army, member of the Board of Tropical Diseases, was elected President, and Dr. Ralph T. Edwards, Bacteriologist of the Bureau of Science, was reelected Secretary. Dr. Victor G. Heiser, Director of Health for the Philippine Islands, was elected a Councillor for five years.

The general health conditions in the Philippine Islands have improved so much during the past month that the Insular Bureau of Health, since January 1, 1907, discontinued the daily report of dangerous communicable diseases. This is the first time the health authorities have felt warranted in taking such a step for a period of over three years.

The last case of cholera occurred in Manila, November 28, 1906; the last case of plague, April 21, 1906, and, with the exception of one case of smallpox, the infection of which was a direct importation, there has been no case of this disease for a period of several months.

This satisfactory condition of affairs is no doubt the result of the permanent sanitary work which has been continuously carried out since the American occupation. The people of the islands are gradually being vaccinated, many artesian wells are being bored monthly, the pollution of water supplies is being corrected, the conditions of living are slowly improving, and the rigid quarantine inspection of foreign vessels by the Public Health and Marine Hospital Service is preventing the introduction of disease. So far as is known there has been no case of plague imported since 1900. On this account the insular health authorities have always felt that if the disease could once be eradicated from the islands, and subsequent cases promptly isolated, and other necessary measures taken, it would only be a question of a short time before the disease would disappear permanently from the islands. This happy result seems now to be an accomplished fact.

With regard to cholera, there are still numerous diverse opinions as to whether it is freshly imported each time, or whether the disease is indigenous in the Philippines.

The health conditions are probably better now than at any time since the American occupation, and also, no doubt, much better than they were for many years during the Spanish régime.

In spite of the favorable conditions with regard to public health, the native press still continues its attack upon the Bureau of Health. So far there appears to be no foundation for these attacks. The articles which are written usually contain nothing but personal abuse, and whenever a few items are published which have a semblance of reflecting upon the Bureau of Health, investigation has always shown the alleged facts to be untrue.

It is the general opinion among those who are well informed that the attacks are purely of a political nature; the ultimate object being to supplant the American personnel of the Bureau of Health with Filipinos, and in order to do this the aid of native newspapers has been invoked to discredit the American officials in the eyes of the masses.

The cruiser *Chattanooga* arrived in Manila from Shanghai, January 9, with a case of smallpox on board in the person of the paymaster's clerk. It is of medical interest to state that the entire personnel, including officers, were vaccinated several months ago, with the exception of the paymaster's clerk, who evaded the operation and is now apparently suffering the penalty. None of the balance of the personnel showed any evidence of having contracted the disease, although many of them must no doubt have been exposed to the same infection. The vessel was remanded to the Mariveles quarantine station for treatment.

The cruiser *Maryland*, which is one of the newer vessels of the navy, and one which has only recently arrived in the Philippines, has had a number of cases of cerebrospinal meningitis occur among the crew. The efforts which have been made so far to eradicate the infection

have not been successful, and cases still continue to occur. It is now proposed to send the vessel to the Mariveles quarantine station and have the personnel and ship thoroughly disinfected with the hope of removing the cause of the infection.

The prisoners who have been transferred to the Iwahig Penal Settlement on the island of Palawan have suffered severely from malarial fever during the past year. With a population of about 300, there have been an average of about one sixth of that number of cases per day in the hospital, with a pernicious type of malarial fever. It is understood that the Spanish authorities once attempted to use the same location for a similar purpose, but had to give up the plan on account of the malaria which they were unable to combat successfully. It will now be interesting to observe whether, in the light of recent discoveries, in connection with the prophylaxis against malaria, and carried out by an American administration, the prisoners at Iwahig can be kept in a healthy condition.

Dr. William J. Mallory, who has been in charge of the Benguet Sanitarium Division for the past two years, has obtained an extended leave of absence and has recently departed for the United States, via Europe.

Progress of Medical Science.

New York Medical Journal, February 6, 1907.

The Physical Processes of Immunity and Infection.—J. Wright believes that it is through the oropharynx and nasopharynx that the majority of pathogenic organisms gain access to the human system, and he has set out to investigate the physical factors involved in the struggle at this point between the invading germs and the natural barriers to their progress. Much has been learned in recent years concerning the reactions of protoplasm to various stimuli. The junction of the air and food tracts, whence all ingesta pass down to the organs of active metabolism, is the first battle ground. There must be some mechanism by which inert matter is allowed to pass while harmful living protoplasm is halted by the epithelial cells. The author attaches much importance to the action of the cilia which, in keeping bacteria on the move, tends to prevent their entrance into the tissues, or compel them to traverse cell surfaces, which either destroy them, or arrange a *modus vivendi* with them. Another physical factor is the limpid serum which, coursing down by gravity, removes bacteria from the danger zone at the cribriform plate. Associated with this factor is that of osmosis. The cilia in the accessory sinuses tend to keep them clear of foreign matter. When they are paralyzed by local inflammation or systemic depression the harmful matter accumulates and furnishes an ideal soil for germ development. The author decries the excessive curetting of these cavity linings which has been practised of recent years. He further expresses the opinion that the sinus suppuration which is found at autopsy in more than one-half of the cases of pneumonia is dependent on a cause it has in common with it, that is, some paresis of the cilia of the air passages, bronchial and sinusoidal, which makes their action physiologically inefficient.

Splenectomy; Five Successful Cases.—W. P. Carr reviews the literature of the surgery of the spleen, and considers that the plan he has followed out in his cases nearly eliminates the chief sources of danger in hemorrhage, shock, and sepsis. He tabulates the indications for splenectomy as follows: (1) Injuries that cannot be safely repaired; (2) all chronic enlargements or hypertrophies of the organ sufficiently great to cause discomfort or produce serious symptoms, except in leukocythemia; (3) benign tumors and cysts that cannot be readily enucleated or removed by partial splenectomy; (4) movable spleen, when enlarged, or causing distress, especially when the pedicle becomes twisted; (5) suppurative splenitis, unless the spleen is adherent to the abdominal wall, so that the abscess may be safely opened; (6) malignant disease or tuberculosis, when primary and confined to the spleen, or when secondary or not confined to the spleen, provided the other parts involved can be also removed or cured. The author considers that an enlarged spleen is not only a menace on account of liability to rupture, but in many cases evidently furnishes an altered secretion which is more or less toxic. Remarkably good, and even brilliant results sometimes follow splenectomy in cases of simple and syphilitic hypertrophy, malarial spleen, Banti's disease, and splenic anemia, while in other cases apparently similar little or no benefit follows. In the present state of our knowledge we cannot always tell certainly which cases will be benefited. In simple hypertrophy and in syphilitic and malarial spleens any symptoms referable to the spleen may be expected to disappear after its removal. Complete cure may be predicted in cases of wandering or dislocated spleen and in splenitis. In any case where diarrhea is severe, cure or great amelioration of this symptom may be expected. The majority of cases of splenic anemia are cured by splenectomy. The detailed histories of the five personal cases are appended.

How Long Shall the Patient Stay in Bed After Abdominal Section?—J. Vance declares that there are many advantages to be gained in getting abdominal patients out of bed as soon as possible. The personal comfort of the patient is greatly increased, the catheter is practically always avoided, and when sitting up they can pass the time agreeably by reading or writing. They eat their meals with a far greater relish than when in bed. Elimination by the bowels, kidneys, and skin are far better, and consequently digestion is greatly aided. With the ability of the intestine to digest comes appetite, strength, and confidence. In the aged all of these advantages are greatly increased. In fact, while younger patients will do well in bed and better out, old patients will not do well at all in bed, and getting them out of bed early becomes, not a procedure of choice, but of necessity. Recumbency for any length of time embarrasses respiration and heart action at any age, but after sixty or sixty-five years of age this embarrassment is so great as to cause hypostatic pneumonia in the majority of patients. By sitting these patients up early the general improvement of metabolism gives to the patient that buoyancy of mental condition which is so very necessary to the successful treatment of the aged. There are no disadvantages to the out of bed treatment, but there are certain dangers, the first and greatest of which is rupture of suture or ligature, causing secondary hemorrhage or the escape of poisonous material into the peritoneum, as, for instance, the slipping of a ligature of an ovarian pedicle or the rupture of a sutured intestine. Those patients best kept in bed are (a) all pelvic cases in which traumatism has been very great and the patient is much weakened by operation; (b) all cases of intestinal surgery in which healing depends to a large extent on absolute quiet of parts; (c) patients greatly emaciated and exhausted by disease prior to operation; (d) cases of profound, acute, or chronic anemia, and (e) neurasthenics, no matter how light the operation. In a word, all patients in whom Nature requires rest and quiet should be bed patients.

Splanchnoptosis from the Standpoint of the Physician.—K. C. Mead discusses this question, notes the great relief of symptoms which follows the reposition of misplaced or prolapsed organs, and figures the Vermehren bandage for general application to this class of cases. Clinically, she has found ptosis of either kidney or stomach, or liver or bowel, in most of the cases suffering from retroversion of the uterus, which, she thinks, goes to prove the hypothesis that enteroptosis is caused by a failure of the supporting ligaments, and that there is seldom to be found simply a ptosis of one organ; therefore, whether the cause is hereditary, constitutional, or due to anemia, overwork, improper dressing, constipation, etc., most of the patients present more or less displacement of the abdominal viscera. Treatment of all such cases must include, of course, regulation of diet and of the normal activity of the gastroenteric tract. The bandage must be carefully fitted to each case with the same care and precision as apparatus is applied in orthopedic practice.

Journal of the American Medical Association, February 23, 1907.

The Factors of Safety in the Organism.—S. J. Meltzer, noticing the tendency of some writers to emphasize the economy of Nature in the animal organism, both as to material and energy, points out that the factor of safety in the body—the surplus above that which is demanded—is far greater than that which is required in artificial structures. For example, he refers to the bilateral organs, each of which is more than capable of supplying the place of both, the kidneys, the ovaries, the thyroids, the adrenals, etc. In the nonpaired organs the same prodigality of tissue and functional capacity is apparent, some organs possess at least twice as much tissue as a maximum of normal activity would require, and in other organs, especially those with an internal secretion, the margin of safety amounts sometimes to ten to fifteen times the actual need. He does not think it probable that tissues are usually inactive, such must be the exception, but they work normally only a fraction of their capacity. The power of self-repair is, moreover, a safety factor far beyond anything in human-made machines. While noting some partial exceptions, the rule seems to be that the organs of the body are built on a plan of a surplus of structure and energy, and Meltzer therefore is inclined to question the theory advanced by some that a minimum, say of proteid ingestion, is the optimum or ideal. There are no facts that support it, and, on the other hand, there are facts that point the other way, such as the abundant secretion of proteolytic enzymes and the excessive capacity of the digestive tract for the absorption of proteids.

These seem to be fair evidence that Nature intended this surplus of material and capacity to be used. The function of supply of tissue and energy by means of proteid food should, he holds, be governed by the same principle of affluence that has controlled the entire construction of the animal for the safety of its life and the perpetuation of its species. In conclusion, he remarks that the factors of safety have an important part in the process of natural selection. The species best provided with a surplus of structure and energy, and thus fitted to meet emergencies, are most likely to survive in the struggle for existence.

The Physiological Conception of Disease in Neurology.—L. Harrison Mettler considers that the anatomical or organic conception of disease, the accounting for disorders by the structural changes found, though still dominant in clinical medicine, is passing, and that the idea that disease is an abnormal physiological process is coming more to the front. In practical scientific medicine it is the abnormal physiology, the disturbed functions, that is the desired goal of study. This is the physiological conception of disease, and while not opposed to the anatomical, on which it in part rests, it is a higher and more accurate conception than the latter. It has, nevertheless, been slow in acceptance, and while recognized by the most advanced leaders of medical thought, it is still inadequately presented in the teaching of the day. It is in neurology, he thinks, that the physiological principle is the interpretation of disease, and its symptomatology is more conspicuous than in any other department of medicine. The neuron theory, which Mettler considers as essentially valid in spite of the modifications necessitated by recent discoveries, has given us one unit, and that a physiological one. In the nervous system it has given us a physiological conception of its diseases, which renders the usual anatomical classifications of the text-books confusing to the average student and practitioner. He gives a summarized explanation of his own tentative physiological classification of nervous diseases, into those of the neuronic or functionating tissues and those of the supporting or nutritional ones, the former being characterized by degenerative, the latter by inflammatory processes, and these again being subdivided. This classification was published several months before the appearance of Grasset's more radical and elaborate presentation of a physiological classification, but Mettler thinks that perhaps at the present time, when the pathology and neurological status of some diseases are still in dispute, a less radical change from the older classifications may have its advantages.

Hysteria in Children.—D'Orsay Hecht says that hysteria in children has not received the attention it deserves, and that its frequency is underestimated. He does not attribute it especially to defective modern methods of education or to a luxurious civilization, since statistics show that it is not confined to those who are specially liable to be affected by such, but is found as often in the children of the poor and ignorant as in those of the rich, and that the major types are recruited more from isolated rural districts than from urban centers. Though too much reverence has perhaps been given to heredity in its etiology, the potential force of direct transmission, he states, must be admitted without reserve. The facts of preceding temporary traumatism in some cases and the impressibility and imitative tendency of children must also be borne in mind. It is useless to look for all the so-called stigmata and accidents of adult hysteria in the child; juvenile hysteria in its objective manifestations is chiefly monosymptomatic, and a single hysterical symptom, standing out in bold relief in the child should, from its very prominence, arouse suspicion as to its functional nature. Motor symptoms prevail; sensory symptoms, according to Hecht, are rarely noted in children, and when they are, are usually of the hyperesthetic type. When an anesthetic zone, suggested or not, appears, it is of the same sharply demarcated, unanatomic type as in adults. Hysterical motor agitation shows itself largely in the form of choreic movements, a variety of facial spasms, convulsive ties and epileptoid seizures. The graver forms of the latter are frequently mistaken for epilepsy, and those of somewhat lesser degree are conveniently evaded with a diagnosis of hysteroepilepsy, a practice to which Hecht objects. As regards diagnosis, Hecht favors the Möbius dictum in dubious cases that "such symptoms may be regarded as hysterical, which cannot be voluntarily produced or which may be simulated." The greatest difficulty is often not so much to avoid mistaking organic disease for hysteria and *vice versa*, as in failing to appreciate that organic disease may, and frequently does, complicate hysteria. We should study the child's temperament, remember its imitative faculty and in all conditions with a prominence of doubtful symptoms, think of hysteria as a not impossible factor. The prognosis is infinitely better than in adults, and, as a rule, the younger the child the better. The fundamental law of treatment is that all hysterical symptoms are psychic, and the means of cure can only be psychic, *i.e.* acting on and through the patient's mind. An early and positive diagnosis favors an early and complete cure. Isolation is imperative when the cordial and efficient cooperation of friends and parents cannot be had. After a cure in isolation has been secured the patients should not be returned too soon to their former associations. Hecht refers with some little detail to Bruns' methods of treatment of these cases, the "method of surprise" and the "method of disregard," and considers the objections that have been made to them rather weak. Unpleasant, and even slightly painful, methods applied with due judgment may be successful because of these qualities in properly selected cases.

The Plague in American Cities.—N. K. Foster remarks that in our intercourse with countries where plague is always in existence, which will increase as our commerce extends, the disease becomes a problem that sanitarians will have to face. Experience in California leads him to the belief that the plague is spread by animals, of which the rat is the chief but not the only one. Circumstances point strongly to squirrels as also disseminating the disease, and he mentions one recent case that is to the point. He believes that the United States Government should investigate this point, as it is of importance to the whole country. While California, from its location, is exposed to the entrance of the infection, he does not think it affords favorable conditions for its spread. The general outdoor life of its people, their excellent physical condition, as a rule, and the good sanitary conditions, will tend to a minimum of cases. Although filth may nourish the germ, we should not depend solely on general sanitary conditions for protection. As rodents carry the disease, they must be particularly watched, and all found dead should be examined. Of the greatest importance, he says, is the early and public recognition of the disease and prompt measures for its suppression.

The Lancet, February 9, 1907

Affections of the Lacrymal Apparatus.—S. Stephenson gives a general description of lacrymal affections, from which a few extracts are herewith made. After a general anatomical consideration of the area involved, he notes the occasional congenital absence of tears and the occurrence of acute inflammation or dacrioadenitis. The latter may terminate in suppuration or resolution. It must be distinguished from erysipelas, purulent ophthalmia, and cellulitis of the orbital tissues. A rare condition is dislocation of the gland, which may be either traumatic or nontraumatic. The lacrymal sac may be the seat of either acute or chronic inflammation, the latter occurring seldom apart from obstruction in the lacrymal passages. The various parts of the lacrymal apparatus are by no means exempt from tuberculosis. Concerning the establishment and maintenance of the patency of the duct, the author notes the disappointing results of probing and the excellent results following the exturpation of the lacrymal sac, though the author does not regard the operation as an easy one. He thinks it may be properly recommended under the following conditions: (1) When ordinary methods have failed, or cannot be applied owing to the particular circumstances of the case; (2) when there is a definite and pronounced distention of the sac, or when fistulæ are present; (3) when tuberculosis of the sac exists; (4) when a cutting operation on the eyeball, as cataract extraction, is imminent, and (5) when a septic ulcer of the cornea coincides with a diseased condition of the lacrymal sac. It might be expected that epiphora would continue after excision of the sac but, as a matter of fact, the removal of a source of reflex irritation appears to reduce the secretion from the lacrymal gland to a minimum.

Appendicitis in Typhoid Fever.—C. I. Green states that typhoid fever may give rise to appendicitis in one of two ways. First, a true typhoid inflammation and ulceration, possibly going on to perforation, may affect the lymphoid tissue of the appendix just as it may any other portion of the intestinal tract, and, secondly, appendicitis may develop in a patient suffering from typhoid fever in consequence of a general edema and hyperemia of the gut. For it must be obvious that during the course of the typhoid fever the whole of the gut which is affected by the typhoid inflammation, viz., the lower part of the small and the first portion of the large, is in a generally congested and hyperemic state; and the appendix, from its situation in the midst of this disturbance, must of necessity participate in the general congestion and edema. But any congestion of the walls of the appendix, especially when associated, as it would be in this case, with a greatly increased glandular activity, must run the risk of obstructing the narrow outlet of that organ and setting up an intense local inflammation there. The likelihood of serious trouble arising in this way would naturally be greatly increased should the appendix

be stenosed, kinked, or bound down by adhesions the result of previous inflammation. There can be no doubt that the conditions brought about by typhoid fever are those likely to rouse into activity a latent or chronic appendicitis. Three successful cases all coming to operation for the appendicitis are narrated, and the author quotes freely from the literature of this association of pathological processes. He says that there is not likely to be much difference of opinion as to the advisability of operative interference in those cases where the extent to which the appendix is involved can be assumed from the general symptoms, for it is obvious that if an operation can be avoided or postponed it is better to do so; the typhoid fever patient already has enough to tax his strength without a laparotomy being added. Therefore, so long as there is no reason to believe that either gangrene or perforation of the appendix has taken place a strictly conservative policy is indicated. But should the symptoms point to perforation, then an immediate operation is necessary. A simple appendectomy in the early stages of typhoid fever has usually a favorable prognosis, but when it has to be undertaken in the third or fourth week of the disease the cases recorded show the heavy mortality that one would expect. Even those operations, which in themselves are comparatively slight, have a high mortality when the patient is exhausted by the typhoid fever.

Sanitary Conditions in Relation to Infantile Mortality.—The observations of T. Devine are applied to England, but are nevertheless of interest. He advances the following propositions: (1) The infantile mortality of rural England is lower than that of urban England. (2) Taking things as they are in England and Wales, it must be remembered that a considerable proportion of infants are hand-fed. This opens up the way, so to speak, for the play of insanitary conditions through the influence of food. Fatal diarrhea in hand-fed children is, on this account, probably proportionate to the degree of insanitation to which the infant is exposed. Infantile diarrhea is twice as fatal in towns as in the country. (3) Measles is a very fatal disease among young infants, and it is especially so among those living under insanitary conditions. Deficient ventilation, in particular, tends to a fatal issue. It is much more fatal in towns than in the country. Whooping-cough is less influenced by the same conditions, and hence its fatality in towns is less marked. (4) It can hardly be contended that an infant brought up in the dark, damp, congested areas of slums has not less resistant power than one brought up under more sanitary conditions. If it has less resistant power it must more readily fall a victim to disease. (5) The influence of general insanitary conditions as they affect great towns may be measured by one or another of three death-rates at all ages, and the corresponding infantile mortality may be studied. These rates are: (1) the pulmonary tuberculosis death-rate; (2) the diarrhea death-rate, and (3) the "fever" death-rate. (6) The factor "overcrowding" includes many conditions which must be classed as insanitary, as pollution of air, water, soil, etc., and overcrowding has been proven to conduce to a high infant mortality rate.

Continuous Use of Oxygen in a Case of Bronchopneumonia in a Cardiac Subject.—The noteworthy features in the case reported by B. E. Myers are (1) that a person, aged sixty-two years, with old heart trouble, recovered from a severe attack of bronchopneumonia; (2) the excellent effects in this instance of the continuous use of oxygen for a long period, and (3) the apparent benefit of strychnine in Cheyne-Stokes breathing. In the course of the treatment oxygen was given continuously for a period of 110 hours. The patient's temperature became normal on the ninth day, and he made an uninterrupted recovery.

British Medical Journal, February 9, 1907.

Influenza and Epistaxis.—Three cases of influenza in children, all in the same family, are reported by H. S. Brown. The interesting feature of them was that all were accompanied by epistaxis, varying in direct proportion to the apparent strength of the invasion, and occurring at the time of the subsidence of the temperature to normal. Not one of the children remembered a previous attack, and their mother confirmed this. Quinine had been given during the influenza, and the author suggests that the bleeding may have been an idiosyncrasy with this remedy. Another suggestion is that the bleeding pointed to a local invasion of the nasal mucosa by the influenza toxin.

A Pair of Forceps in the Abdominal Cavity for Ten Years.—While examining a patient, J. E. F. Stewart detected by abdominal palpation a body suggestive of a pair of scissors in the region, and learned that the patient had been operated on over ten years previously for an ovarian tumor. X-ray examination confirmed his suspicion and the abdomen was opened. Artery forceps were found of the length of nearly five inches with a handle breadth of nearly two inches. During this long interval she had had attacks of sudden acute pain, constipation alternating with diarrhea, and pains in the lower limbs. The forceps were found inside the lumen of the bowel. What at first appeared to be a cicatricial band between the rings of the handles kept the forceps in place, and capable only of moving with the portion of the bowel, into which they had got. The author incised the gut, and, owing to the patient's condition, had rather hastily to remove the forceps, when he found that the supposed cicatricial band was the point of anastomosis of two loops of bowel which had been caught between the handles of the forceps, and thus caused a "short circuit" between two points, about 12 inches apart.

The Temperature in Malignant Disease of the Liver and Bile Passages.—J. W. Russell reports on this fact in fifty-two cases of malignant disease, in thirteen of which the growth certainly arose from the gall-bladder or bile ducts. His general conclusion, summarized from a study of the temperature charts he presents, are as follows: Nearly two-thirds of the cases of malignant disease of the liver show some degree of pyrexia, at any rate in their later stages. The pyrexia is capable of attaining a considerable height, but rarely shows genuine intermissions, in the sense of subsidence of the morning temperature below the normal level. It is not uncommon to observe successive periods of fever alternating with apyrexial intervals, and sometimes these alternations may occur with great regularity. Rigors do not occur in uncomplicated cases of growth of the liver. Pyrexia seems to occur in a still larger proportion of cases of growth of the gall-bladder and bile ducts being recorded in more than three-quarters of the cases investigated. The condition is frequently complicated by the presence of gallstones, and it may be due to this fact that the pyrexia often reaches a greater height, with larger excursions, than is seen in the growth of the liver itself. Rigor apparently occur only when gallstones are present. An isolated high rise of temperature may, however, be observed in growth of the bile ducts in the absence of gallstones, but as a rule such a rise is suggestive of the presence of gallstones. The three cases of combined growth and suppuration do not present anything in the temperature charts to strongly suggest the presence of pus, though one case gave a single high rise of temperature. In hepatic abscess the charts may present little that is characteristic of suppuration, at any rate if observed only for a short time; but where high rises of temperature from a low level are noted these are likely to be repeated at frequent intervals, and thus to contrast with the isolated rises seen in cases of stones or growth. It is possible, however, that the examination of a larger number of cases might not support this statement.

The Dissemination of Intraabdominal Malignant Disease by Means of the Lymphatics and Thoracic Duct.—This subject is considered by W. M. Stevens, who summarizes the histories of several cases and presents two diagrams illustrative of points in his main argument. His concluding observations, which sum up his various contentions, are as follows: (1) The thoracic duct undoubtedly plays an important rôle in the dissemination of intraabdominal malignant disease and of tuberculosis. This duct may act as a "simple carrier" of infective material, or it may be directly involved, and in some cases it may be actually obstructed. In connection with blocking of this duct, it is very remarkable that chylous ascites is so rare and also that dilatation of other lymphatic channels can so seldom be demonstrated. (2) The supraclavicular glands on the left side are more frequently involved in abdominal malignant disease than is generally supposed, and in many cases careful percussion will show the presence of glandular enlargement in the clavicular and infraclavicular regions, and may even thus give a clue to the nature of the abdominal affection. It is possible that these glands become infected through "regurgitation," but a more likely method of infection, and one which can be demonstrated in some cases is by direct communication of the disease along the walls of the thoracic duct, extending to the lymphatic vessel coming from these glands. The right clavicular glands are very seldom involved, and the reason for this is fairly obvious on studying the lymphatic anatomy. (3) The possible mode of infection of other parts—chest, liver, inguinal glands, abdominal wall, etc.—have been discussed. (4) It is probable that many cases of so-called primary mediastinal growths may really be of secondary origin, since it is well known that cancerous disease, especially of the stomach, may be very "latent," and, moreover, a small growth of the stomach, though it has been the cause of marked secondary growths, may even be overlooked at the autopsy unless especial care be taken.

The Claim of the Surgeon to Conduct the After-Treatment of Operative Cases.—This claim is maintained by C. A. Morton, who says that the only reasonable

view of the matter is that the medical practitioner who has been in charge of the case up to the time the operation is performed should hand over the treatment entirely to the surgeon who has taken the responsibility of operating, for the success or failure of an operation may, to a large extent, depend on the after-treatment. This is practically what is done in hospital service when a case is transferred from the medical to the surgical service. The author then goes on to make some observations on the position of the patient after operation and on flatulent distention after abdominal operation. Concerning the former, he says that in all cases in which the drainage of any quantity of fluid from the abdomen is desired, the patient should be kept in the half-sitting position—that is, with his chest well propped up on pillows. This is of the greatest importance in acute suppuration in the abdomen, especially when diffused, as in peritonitis. It has been strongly advocated in such cases by some of the American surgeons, and is sometimes spoken of as Fowler's position. In suppurating appendicitis not only must the chest and upper abdomen be raised higher than the lower abdomen, but the left side of the abdomen must also be propped up on pillows, so that the right lower abdomen, from which the drainage tube will protrude, is the lowest part of the abdominal cavity, except the true pelvis. In order to judge if his patient is at a right slope, it is necessary to inspect the abdomen (of course covered with the dressing) after or during the adjustment of the pillows or bed-rest. We must not be content with the apparent position of the abdomen from inspection of the patient covered with the bed-clothes. We should not leave the arrangement of the position of the patient to the nurse, unless we feel sure she knows exactly how to place the patient, from her experience in other cases. Concerning the matter of flatulent distention, the author says that his chief reliance for its removal is very hot turpentine enemata repeated every few hours, and given with a soft rubber tube, left in the rectum for a short time after, to allow any gas which reaches the rectum to readily escape through the sphincter. They should be as hot at the moment they are given as the nurse can bear her hand in, and the turpentine should be most thoroughly made into an emulsion with soap and a pint of hot water, and, if one pint fails, two or three pints very slowly introduced by a funnel and small rubber tube, with the pelvis elevated, may succeed. We may give a few grains of calomel, followed by a Seidlitz powder, as well, and repeat it. There is no doubt that in many cases in which tympanitic distention is marked and vomiting frequent, and the patient seems really very ill, this line of treatment will, if persisted in, remove the alarming symptoms. Possibly the frequent hypodermic injection of strychnine may help somewhat. Morphine must be avoided. Pain is not usually a marked feature in this condition, and morphine will tend to paralyze the bowel. And it is no use putting nourishment, even though it is liquid and peptonized, into the patient's stomach in such cases. We must so arrange the time of the hot turpentine enemata that nutrients can be retained for some hours.

Berliner klinische Wochenschrift, February 4, 1907.

Juvenile Physiological Albuminuria.—Ullmann examined the urine of forty-two small children and school girls between the ages of two and a half and thirteen years. These children were supposed to be perfectly healthy, and for the most part were well nourished, and all were subjectively well. Fourteen, or 33.3 per cent., however, had albumin in their urine without any other evidences of nephritis, and on the basis of this experience Ullmann suggests that this condition must be considered as a more or less physiological manifestation of early life. In most instances the tendency is outgrown, but when it is found in adults it must be regarded as the persistence of this early condition. He therefore does not agree with Leube in regarding the albuminuria of puberty of this author as a disease of development with a well characterized clinical picture, and also does not consider that it should be called orthotic albuminuria, but rather that the condition should receive the name of juvenile physiological albuminuria, and be differentiated as such. This diagnosis naturally can be made only after long-continued and careful observation. Treatment is superfluous, for in most cases the tendency disappears as the individual grows up, and in the others it persists in spite of all therapeutic efforts. It is without effect on the patient's health or length of life, and its presence need not be apprehended by insurance examiners.

Milk Infection as a Cause of Primary Intestinal Tuberculosis in Children.—Fibiger and Jensen report at great length two cases of intestinal tuberculosis in infants which were undoubtedly the result of infection through milk taken from tuberculous cows. The authors point out that there is now no longer any doubt that the tuberculosis of cattle can produce the disease in man, and that the danger from this source must be guarded against by rigid surveillance of dairy products. Most cases of human tuberculosis are the result of infection from other human beings, but for infants milk infections are of the greatest importance. Hospital records are demonstrating that the frequency of mesenteric tuberculosis in infants is much greater than has been supposed, and it must not be forgotten that the number of cases in which the infection originated in this way is much larger than the post-mortem records show, because the disease frequently produces widespread lesions in other organs, so that it is no longer possible to demonstrate the site of the original infection. There is, therefore, no doubt that the consumption of raw milk is an important source of tuberculous infection in infancy.

Münchener medizinische Wochenschrift, January 22 and 29, 1907.

The Pathology of Appendicitis.—Flesch is inclined to doubt the belief that the appendix is a rudimentary organ or one in the course of retrograde metamorphosis, and suggests that it is possible to attribute to it a useful function. He regards it as a glandular structure placed in the region of the ileocecal valve for the purpose of in some way modifying the conditions existing in this portion of the large intestine where a pronounced change in the character of the intestinal contents and in the direction of their movement takes place. The inflammatory processes that occur in the appendix may be compared to those observed in other glandular organs, and are the result of bacterial infection following local injury or irritation through mechanical or chemical causes. The greater frequency of the disease in certain families indicates that through some inherited peculiarities of structure inflammatory changes are predisposed to, but the inciting cause is a purely individual one. Constipation, which appears to be on the increase among all classes of society, is to be considered as an important factor, and the prophylaxis of the disease demands concerted efforts to combat this tendency by suitable modifications of diet and mode of life.

Scopolamine Anesthesia in Obstetric Practice.—Three articles on this subject are presented. The first of these is by Gauss and is devoted to a consideration of the results obtained in 1,000 confinement cases conducted under this form of anesthesia. Gauss is a very ardent advocate of the method and ascribes the less favorable opinions of other authors to the fact that their technique was lacking, or the preparation used was unreliable. In his series of 1,000 cases the maternal mortality was zero as far as the anesthesia went, and in all other respects the method was equally satisfactory. No undesirable effect on the duration of the labor, on postpartum hemorrhage, or on the welfare of the infants was observed, and the author considers that under conditions which permit sufficiently careful observation of each patient the method is a highly satisfactory one. Whether it is desirable for use in large institutions, or in general practice, is still a question, as the dosage must be controlled by a careful observation of the patient's perceptive faculties, which naturally demands a great deal of close attention.

Preller, in the second communication, also expresses himself favorably in regard to the scopolamine-morphine method, though with somewhat more reserve than Gauss. Out of 120 cases of this sort, in 70 per cent. the anesthesia was successful, in 18 per cent. it was for the most part satisfactory, and in 12 per cent. the effect was poor, principally because the injections were made too late. In 20 to 25 per cent. of the cases impairment of the heart's action was noted, and in about the same proportion of cases the duration of the labor appeared to have been protracted. Twice symptoms of poisoning, accompanied by hallucinations, were noted. The author, therefore, concludes that this method of anesthesia will probably be restricted to hospital work, where physicians and trained attendants are constantly at hand. Before attempting to use the method in private work the practitioner should have familiarized himself with the properties of the combination through extensive hospital experience, and he will have to devote to his patient the necessary time for careful supervision of the period of anesthesia.

Penkert, in the third paper dealing with this subject, describes a combination of morphine-scopolamine anesthesia with spinal anesthesia. A special technique for performing the injection into the spinal canal is detailed, and the author expresses the opinion that this method forms the most humane type of anesthesia for abdominal and gynecological operations.

Book Reviews.

LECTURES FOR NURSES. Jamestown, N. Y.: The Chautauqua School of Nursing. 1906.

UNDER the above title there has been received a book which purports to give a course in general nursing, apparently on the plan of the "correspondence school." The perusal of its pages is intended to furnish the candidate with a knowledge of what has now come to be regarded as a profession, but we think that knowledge gained in this manner will hardly fit a nurse for the duties she is compelled to perform, and if such knowledge be the limit of her qualifications, few physicians would care to take the risk of employing her. Practical hospital experience constitutes the *sine qua non* of nursing, and nothing can be substituted for it. As a supplement to the practical knowledge obtained in hospital work, the lectures here presented would be very useful, for they are well written and calculated to impart sound information in an easily assimilable form. But book teaching without practical training, in nursing as in medicine, gives only the "little learning" which high authority tells us is a dangerous thing.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS, with Especial Reference to the Clinical Application of Drugs. By JOHN V. SHOEMAKER, M.D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia; Physician to the Medico-Chirurgical Hospital; Member of the American Medical Association and the British Medical Association; Fellow of the Medical Society of London, etc., etc. Sixth Edition. Thoroughly Revised. (In Conformity with Latest Revised U. S. Pharmacopœia, 1905.) Philadelphia: F. A. Davis Co., 1906.

IN this new edition the author has added a section on pharmacy and pharmacology, with a classification of remedies, a table of poisons and their antidotes, and directions for prescription writing. The second section, dealing with medicinal agents, such changes as were necessary to make the work conform with the latest edition of the U. S. Pharmacopœia have been made. Part III. is devoted to a consideration of the non-medicinal therapeutic agents—to electrotherapy, kinesitherapy, pneumotherapy, hydrotherapy, psychotherapy, radiotherapy, actinotherapy, musicotherapy, dietetic treatment, etc. Shoemaker's Therapeutics has long enjoyed a well-deserved popularity, and has ranked among the best of the works of the kind published in this country. This new edition can but add to the measure of appreciation of the work.

THE BACTERIOLOGICAL EXAMINATION OF WATER SUPPLIES. By WILLIAM G. SAVAGE, B.Sc., M.D., D.P.H. Medical Officer of Health, and Public Analyst, Colchester, etc. London: H. K. Lewis, 1906.

THE size of this book precludes an exhaustive presentation of the matter with which it deals. It makes no pretense of bringing much that is original, nor does it depart from the general plan upon which books of this sort are generally written. Within the space allotted, however, the little work is exact and up to date. The chapters on the colon and typhoid groups are excellent summaries of these difficult subjects. Too little space is given to the streptococcus group, though this is excusable by reason of the confusion in which this variety of organisms still finds itself. Throughout the book, however, the most recent researches and methods have been utilized; though in many places they cannot be more than indicated. A gratifying feature, all too rarely found in writings published in foreign countries, is a thorough acquaintance with the work of American scholars. The tone of the book is critical and unwarranted conclusions are avoided throughout. For this reason, if for no other, the little treatise is well worth reading and constitutes a valuable addition to the literature of the subject.

VOICE PRODUCTION IN SINGING AND SPEAKING, based on Scientific Principles, by WESLEY MILLS, M.A., M.D., etc., Professor of Physiology in McGill University, and Lecturer on Vocal Physiology and Hygiene in the McGill University Conservatorium of Music. Philadelphia and London: J. B. Lippincott Co., 1906.

THIS book is written by one who is at the same time an eminent authority in his special field of medicine and a trained musician. His preface informs us that his purpose has not been to write an exhaustive work on vocal physiology, but to keep in mind, as he has penned his chapters, the real needs of the practical voice user, and to give him a sure foundation for the principles that must underlie sound practice. The consequence is that his pages are attractive to the laryngologist, who sees in them sound, common sense, and attractive also to the singer, who receives much valuable information. He considers the lack of good actors and singers of the present day, as compared with former times, due to the fact that we do not to-day pursue right methods for a sufficient length of time. Especially is this true with reference to breath control. "In this alone singers to-day are far behind those of the old Italian period, not because they do not know how to breathe, but because they are often unwilling to give the time necessary for the full development of adequate breathing power and control." In other words, singers are apt to fall into the "rush" methods which have come to be characteristic of the present age in almost every line of endeavor. The book is well illustrated and well printed. As is usually the case with such a technical subject, there are here and there statements with which perhaps not every teacher of singing would agree, but the range of topics considered is wide, their exposition is lucid, and the advice given to voice users is intensely practical.

PRACTICAL DIETETICS, with Reference to Diet in Disease. By ALIDA FRANCES PATTEE, Graduate, Boston Normal School of Household Arts. Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City. Special Lecturer at Bellevue, Mount Sinai, Hahnemann, and the Flower Hospital Training Schools for Nurses, New York City; St. Vincent de Paul Hospital, Brockville, Ontario, Canada. Fourth Edition. New York: A. F. Pattee.

THIS is intended primarily as a dietetic guide to the sick, but it is an excellent cook-book for those in health as well. The first part contains a general disquisition on food and food values, general rules for feeding the sick, directions for serving, and a brief chapter on measurements, in which is a useful table of the equivalents of the saltspoon, teaspoon, tablespoon, cup, and other domestic units of measure. The second part contains numerous recipes for the drinks (soft), soups, meats, bread, and sweets, which may be needed for the sick and those with delicate appetites that require coaxing. These recipes are excellent, and could be used by any plain cook or housewife, with gratification to the master of the house. The only criticism we have to offer is that the author almost always specifies some particular make of olive oil, chocolate, grape juice, etc. If there were but one make that could be relied upon this might be necessary, but where there are many of each of these just as good and honestly made as those mentioned, the specific designation smacks a little of the advertisement. The third part is devoted to a combination of the foods and special diets called for in individual diseases. In this the physician will find many hints enabling him to prescribe the appropriate diet without wearying his patient with the monotony of milk and beef broth. Nurses will also find much that is helpful in the book, and many a patient, wanting something, yet not knowing what he wants, will thank the author for the suggestion of a dainty dish.

GENITOURINARY DISEASES AND SYPHILIS. By HENRY H. MORTON, M.D., Clinical Professor of Genitourinary Diseases in the Long Island College Hospital, etc. Second Edition. Revised and Enlarged. Philadelphia: F. A. Davis Co., 1906.

THE second edition of this book was made necessary by the numerous changes and advancements which have been made in this subject within recent years, chief among which are the developments in the surgery of the prostate and the kidney. In the treatment of gonorrhea the author favors the methods used by the Berlin school of investigators, whose opinions are also largely quoted throughout the book. The chapters on syphilis are very satisfactory, presenting the subject in a concise, yet sufficiently complete manner to afford to the student a very comprehensive idea of this important subject. The book, although by no means a manual, presents in a sufficiently complete manner the modern status of genitourinary surgery.

DIE THERAPIE DER HAUT UND GESCHLECHTSKRANKHEITEN. Für praktische Aerzte; von Dr. REINHOLD LEDERMANN, Specialarzt für Hautkrankheiten in Berlin. Dritte durchgesehene und erweiterte Auflage des Therapeutischen Vademekum der Haut und Geschlechtskrankheiten. Berlin: Verlag von Oscar Coblentz, 1907.

THE changes from the previous edition consist in the addition of paragraphs on treatment by means of light and other forms of radiant energy, by cold, and by local hyperemia, and in the addition of most of the newer remedies used in these classes of disease. In his judgment of the various methods the author is quite fair and impartial. But the *x*-ray treatment of tinea tonsurans, now generally accepted as altogether the most efficacious, is barely mentioned, and is recommended only for severe cases, while the treatment of lupus erythematosus by the high frequency current is omitted altogether. Contrary to the general belief in this country, electrolysis is placed ahead of the electrocautery in the treatment of nævus vasculosus. The characteristics of the book have not been altered with its change of name: it is still chiefly a collection of valuable formulæ and therapeutic hints, with enough text to bind the whole together.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held February 7, 1907.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

Regulations Endorsing State Law to Regulate the Practice of Midwifery.—The resolution was offered, seconded, and unanimously carried that midwives should be regulated and supervised by competent authorities. The resolution favored the enactment of a State law to regulate midwifery and to provide for examination for licenses following the precedent set by States in the Union, by Germany, and other countries. This resolution advising or indorsing the enactment of a State law was presented to the Council and was accepted by the Council and recommended to the Academy of Medicine for its concurrence.

The Bacteriology of Influenza.—Dr. MARTHA WOLLSTEIN read this paper. She said that the organism which was present in such large numbers in the sputum of influenza patients was one of the smallest known. It was two or three times as long as wide, with rounded ends, sometimes forming threads, Gram negative, and non-motile. No spores were formed and the organism was strictly aërobic. It grew only upon media containing hemoglobin. The colonies were small and dewy in appearance, colorless and transparent, and showed little tendency to become confluent. The bacillus grew between 42° and 26° C., and therefore in this climate the temperature was too low to permit its flourishing outside the body. An exposure to 43° C. for a few hours killed it. Pfeiffer's experiments proved that it quickly died in water and that in sputum the bacilli were probably alive and infectious for fourteen days, if protected from drying. Development outside the body in water or soil was not possible; the spread of influenza by means of dried sputum particles was possible only to a minimum degree, and contagion took place, as a rule, by means of fresh particles of moist nasal or bronchial secretion. The bacilli were present in large numbers in the sputum in the early stage of the disease. The influenza bacillus had a special predilection for the mucous membranes of the respiratory tract, and usually entered the body through them, attacking, as a primary point of infection, the nose, nostrils, larynx, bronchi, or lungs. Hence the necessity of disinfecting all linen and all eating utensils used by the patient. More rarely the eye might be involved first. The involvement of the ear was always secondary. The bacillus of influenza was a facultative pus producer, and suppurative inflammation of the serous membranes had been reported. The bacillus had never been demonstrated in the digestive tract. It had been demonstrated in the blood of living adults in two cases only. In her experience the influenza bacillus was not found in the throats of healthy children nor in the throats of children in whom lesions of the respiratory tract did not exist. Rabbits were rarely killed by one inoculation of influenza bacillus, either intraperitoneally or subcutaneously; but they bore repeated inoculations badly, becoming emaciated and very weak. The blood of influenza patients agglutinated influenza bacilli in low dilutions and rarely in the early days of the disease. The absence of agglutination with the serum from cases of acute influenza was to be explained probably by the fact that the agglutinins develop slowly. Rabbits required many inoculations before the agglutinins began to appear. Thus far all attempts to produce an active immunization to the toxins of influenzal bacillus had failed.

Dr. WM. HALLOCK PARK said that Dr. Wollstein had done a great deal in the study of the bacteriology of influenza and, therefore, he hesitated in entering upon a discussion with her. He spoke of the diagnostic import of finding the influenza bacillus, personally he did not think it amounted to much unless the symptoms of the disease were present. In cases of suspected influenza bacterial cultures gave little aid in the diagnosis or the treatment. If the symptoms were not striking and characteristic, the finding of the influenza bacillus did not suggest much, as there were many differences in virulence of different strains, and cultures showed nothing concerning virulence. Mixed infection was always present and often most important. In bronchopneumonia at present the pneumococci gave similar symptoms. During the pandemic the cases presented markedly typical symptoms; but in the years between these striking symptoms were not shown. In the Adirondacks the presence of influenza bacillus was studied in those living there; in nearly all the tuberculous cases this bacillus was found. The influenza bacillus was like the pneumococcus in many things. It caused meningitis and cerebrospinal meningitis in not a few cases.

Influenza in General Practice.—Dr. W. H. KATZENBACH said that influenza was an acute infectious and contagious disease caused by the Pfeiffer bacillus. This bacillus was found in all cases of uncomplicated influenza in the nasal and bronchial secretions in almost pure culture, and in the bronchial tubes and lungs in the pulmonic complications. It disappeared with convalescence. Epidemics had been frequent since the fourteenth century, the first one that was carefully described being in 1577. Since the pandemic of 1889-1890 the disease had occurred in epidemic waves in this and other cities. But in the intervals of the epidemics sporadic cases had been frequently observed at all seasons, which in every respect resembled those of the epidemic. The account of the rapidity with which the infection was carried in epidemic seasons made it appear that the bacillus was air-borne and entered the human subject through the inspired air. During an epidemic influenza attacked all classes and all ages, though the young were less susceptible. No one could consider himself immune. Relapses were frequent, and one attack did not confer immunity against others. The period of incubation was from one to three or four days. In all epidemics the local symptoms were so varied that although attempts had been made by most authors to group the disease into several clinical types, yet one or more of these types frequently existed in combination. After describing the symptoms, diagnosis, and prognosis of these various types of influenza, he took up a consideration of the treatment. During the prevalence of an epidemic of influenza, the old, the chronically feeble, and those suffering with cardiac, pulmonary, or nephritic troubles should be guarded against any and all depressing influences. The patient should be isolated, and confined to bed in a warm and well ventilated room and protected from draughts. He should be kept at rest and in quiet, and visits of friends and relatives should be prohibited. The nasal and bronchial secretions should be disinfected. The indications were to control the pain, quiet the cough, control the fever, maintain nutrition, eliminate the toxins, and induce sleep. The treatment might be begun with a dose of calomel and saline unless contraindicated. If pain was severe and nausea was present a moderate dose of morphine would relieve, given under the skin. A single dose of phenacetin with codeine would quiet the cough, relieve the pain, reduce the temperature, and induce sleep. This might be followed by one of the alkaline salts. Alkaline waters should be freely given. Antipyretics should be avoided, except possibly a moderate dose at the beginning. If the temperature was high and delirium present, a cool pack was of value. If the temperature was moderate and the skin moist, baths could be dispensed with. While fever was present milk and vichy, buttermilk, kumys, or zoolak in small quantities, and if tolerated eggnog, later eggs, raw or cooked, and during convalescence scraped

beef, chicken, beefsteak, chops, green vegetables, bread and butter might be given. Convalescence was often protracted and was frequently characterized by nervousness, insomnia, anorexia, vasomotor, or cardiac weakness.

Dr. Morris Manges believed that we underestimated the ultimate mortality in influenza. Very little care was given by physicians to prevent the spread of this disease, and the more polite use of handkerchiefs should be asked for. The disease was carried largely in the moist secretions from the mouth. A diagnostic point which he considered of importance was the sticky râles heard at the base of the lungs; these râles he believed to be quite characteristic of the disease. They were rather loud, bubbling râles and sticky in character. Therefore, when ever in doubt as to the existence of this affection he said that we should search for these râles at the base of the lungs and posteriorly. Dr. Manges said that he knew of few problems in diagnosis more difficult than differentiating a case of grippe from the early stages of typhoid fever. This was especially so as the rash occurs in grippe more often than usually taught. In a large number of cases albumin was present in the urine and this persisted for a longer or shorter period of time This had been considered by the various insurance companies.

Influenza in Its Relation to Diseases of the Nervous System.—Dr. Joseph Collins read this paper (See page 337).

Dr. B. Sachs said that any one who had had experience in studying diseases of the nervous system knew that the influence of influenza in them had been greatly overestimated, and so far as his own experience was concerned he had yet to see a single case in which a nervous disease could be positively established as being due to the influence of the Pfeiffer bacillus. A recent experience helped to indorse this view. A child was supposed to have an influenzal meningitis. A lumbar puncture was done and the meningococcus found, thus disproving the influenzal nature of it. In all probability there were cases of meningitis due to the influenza bacillus, presenting all the signs of a basilar meningitis, the entire course of the disease being milder than they were accustomed to see in a tubercular meningitis, and the disease ending in recovery. In speaking of the nervous symptoms due to the influenza bacillus one should bear in mind the persistent headache and insomnia, the former largely due to a subacute meningitis due to the influenza bacillus, the latter due to the active hyperemia in all probability. Myelitis and neuritis due to the influenza bacillus were rarely met with, although it was extremely difficult to prove. In myelitis a diagnostic point was the repeated attacks and rapid recovery.

Influenza in Children.—Dr. Henry Dwight Chapin said that the difficulty of recognizing influenza in children depended upon two factors, whether the disease was prevalent or not, and the age of the patient. Young children did not seem to be so susceptible to the disease as adults. The fact that influenza might take on a grave form or be followed by serious sequellæ emphasized the importance of an early diagnosis. The younger the child the more severe usually was the infection. Catarrhal disturbances of the respiratory tract predominated in children, and were more virulent than the ordinary inflammations met with in this region. This was not only seen locally, but in the disposition of the catarrhal process to extend downward. In some ways this was analogous to the course in measles. The larynx, trachea, and bronchi were quickly involved, but, in many cases, the inflammation did not extend below the larger or median sized tubes. In others there was an involvement of the small tubes and alveoli coming on soon after the onset of the disease. This type of bronchopneumonia was much like the ordinary form so far as the physical signs were concerned, but early prostration was more marked, and the temperature was usually irregular and higher than the local lesion would seem to warrant. True lobar pneumonia was also not infrequently seen and, as in other influenzal conditions, exhibited disturbances of temperature and circulatory and nervous depression out of proportion to what would be expected from the pulmonary signs. Perhaps the most frequent exhibition of pneumonia was seen in the form of irregular patches with sneaking invasion and where it was very difficult to decide whether the process was catarrhal, croupous, or both. Various grades of pleurisy were frequent accompaniments of all the forms of pneumonia, and empyema might be the terminal condition. The latter was even more insidious than usual, especially in infants, and Dr. Chapin had seen more of this disease in the past two months than usual. In cases where the gastrointestinal disturbances predominated there might be severe vomiting and the passage of loose, undigested stools, which later might contain mucus and even blood. The cases in which pure nervous disturbances predominated over the catarrhal symptoms did not seem to be so common in early life. Some severe cases might start with convulsions and simulate meningitis, with photophobia, stupor, and, in older children, headache and delirium. In influenza the fever was apt to be irregular and at times very high, especially in young infants. In some cases fever and prostration with little evidence of any local inflammation would be the principal symptoms. In other cases an irregular fever might last for several days and simulate typhoid fever. The skin was sometimes covered with various forms of erythema, which might at times simulate measles or appear in scarlet form. The urine frequently showed traces of albumin. In diagnosing influenza the bacteriological aid was not as great in practice as it was in theory. The bacilli were difficult to discover and frequently disappeared early in the disease. In the great majority of the cases the physicians must depend entirely on clinical signs for a diagnosis. In some cases he must depend largely on a process of exclusion. The disease was highly contagious.

Dr. L. Emmett Holt said that influenza was highly contagious, and in the family the adults were apt to be first infected and the children secondarily. He had seen several cases of influenza occurring in young children, the disease having been caught from the nurse. The general practitioner did not sufficiently take into consideration the importance of isolating nurses who had the care of young children. The catarrhal cold was a menace to the child with whom the nurse lived constantly. It was impossible to differentiate the ordinary catarrhal colds from those due to the influenza bacillus. Therefore, it was better to isolate half a dozen cases of ordinary colds than to run the chance of exposing the young to one case of influenza. In most cases of influenza he had seen the temperature was out of proportion to the other symptoms. If the temperature ranged up to 102°, 105°, or even 106°, with very few local symptoms, or none at all, he always looked upon a diagnosis of influenza as the most probable. Cases of persistent temperature with a little ear trouble, the temperature going up because of the influence of the influenza bacillus, and not because of the ear trouble, were very important from the standpoint of the otologist. Such a temperature continuing called for a mastoid operation. Cases of uncomplicated influenza might run high temperatures for days, and he had seen cases with fever continuing for five or six days, the temperature being disproportional to the other symptoms.

Some of the Lesions of the Middle Ear Due to Influenza.—Dr. Gorham Bacon said that at the New York Eye and Ear Infirmary there had been, in 1897, 161 mastoid operations; in 1889 the number had rapidly increased, while in 1905 there had been 555 operations. Influenza played an important part in the acute inflammations of the middle ear, and children were more frequently affected than adults. The pain was slight even in the severer cases. The sticky

sanguinolent purulent discharge was quite characteristic in children, and in examining the pus or serum, one found usually a mixed infection. The staphylococcus might be the cause of the severe inflammation. After incising the drum membrane the temperature usually fell, the discharge became purulent, and the disease ran a course of from ten days to three weeks, the temperature ranging from 101° to 105°. It was in this class of cases that the otologist should exercise great care, and if a simple bronchitis was present, it was not wise to administer an anesthetic for fear of setting up a pneumonia. Incise the drum membrane without a general anesthetic; but if it was absolutely necessary to use one, he advised chloroform. After incising the drum head the high temperature might be due to mastoid involvement, or to a deep-seated pneumonia. The knowledge of the exact nature of the infection he considered important. The mastoid involvement or infection might be different type on either side. In cases of sinus thrombosis, Dr. Bacon said he had seen a case in which the temperature remained high. Since the influenza otitis was apt to be of a severe type, it was wise to make an early incision in the drum membrane, even if there was but little bulging. It was a difficult matter to formulate exact rules for one's guidance for operating in cases of otitis following grippe; but, as a rule, it should be performed early if the temperature remained up. Examinations of the blood should be frequently made to see if there was a leucocytsis or not. In some cases a mastoid operation could be avoided by making incisions into the drum membrane. After mastoiditis, septic thrombosis and sigmoid disease were the most frequently met complication. Attention should be directed to thrombosis of the jugular bulb in children as well.

Dr. E. GRUENING said that since the discovery of the influenza bacillus, in 1892, they had looked for it in vain in the discharges of affected ears. If the diagnosis of influenzal otitis depended on the bacteriological proof, its existence would be problematic. In the paper read by Dr. Martha Wollstein on the bacteriology of influenza, it was stated that the influenza bacillus affected the ear secondarily. This, he understood to mean that Dr. Wollstein, in all her researches, did not find the influenza bacillus in the ear. This statement he could confirm, inasmuch as in the epidemics of influenza which they had had since 1890, the bacteriological department of Mt. Sinai Hospital never reported the finding of the influenza bacillus in the ear. What was found was in most cases the streptococcus, and only occasionally the pneumococcus. It was asserted, especially by the Halle school of otology, that the otitis of influenza did not differ in its clinical manifestations from other forms of otitis. Those who practised otology in New York before the great epidemic of influenza in 1889-90, know that the hemorrhagic forms of otitis characterized by blood containing blebs in the auditory canal and on the drum head were much more frequently observed during the prevalence of influenza than at other times. Inasmuch as the bacillus was not found in the ear, they must ascribe to the toxins of the bacillus a certain disintegrating action upon the walls of the blood-vessels. The statement made by Dr. Holt that the otologist incised the drum-head when the patient complained of pain in the ear, and the drum-head showed some redness, was erroneous. Pain in the ear and redness of the drum were no indications for paracentesis of the drum-head. The indications for the incision were given by Dr. Bacon. In order to open the drum-head, it must bulge, showing that there was fluid behind it. This fluid was either infected serum or pus, and the old principle, *ubi pus, ibi evacua*, held good, especially in that particular case. Dr. Holt's assertion that, should pain in the ear and high temperature persist after incision of the drum-head, the otologist without other indications immediately proceeded to the opening of the mastoid process, was again not borne out by actual practice. He again referred to the paper of Dr. Bacon, who gave precise indications for this operation. The otologist who would open the mastoid merely because pain in the ear and high temperatures existed, lacked both the science and the conscience of the true physician.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Special Meeting, Held January 30, 1907.

FIRST VICE-PRESIDENT, DR. H. SEYMOUR HOUGHTON, IN THE CHAIR.

Presentation of a Specimen.—Dr. EDEN V. DELPHEY presented a monstrosity.

The Medical Staff and Its Functions; A Study in Hospital Organization.—Dr. S. S. GOLDWATER presented this paper. He considered (1) the medical staff in relation to the needs of the patient; (2) the medical staff in relation to medical education; (3) the medical staff in relation to hospital economy; (4) the medical staff in relation to the rights of its members. One of the first necessities in medical organization was a system of examining candidates for admission which would guarantee a fair and intelligent treatment of all who applied. This could only be accomplished through a physician of first-rate ability and character, owing to the complex and often vital interests of applicants. Here rapid changes in office and the introduction of men of immature judgment must be avoided. Hence, in a large hospital the admitting officer must be ready to put aside the claims of private practice and to devote a large part of his time to the hospital, and the hospital should not hesitate to pay him a salary commensurate with the services demanded. In the grouping of patients and the assignment of attending physicians the hospital should avoid any undue exaltation of specialism, and yet there must be so much recognition of specialism as would encourage the development of the finest skill in diagnosis and treatment. The psychological tendencies of specialism furnished one reason for establishing such sweeping oversight of the various clinical departments as would promote their active and continuous cooperation. A single chief in command of the medical and one in command of the surgical department could do much to enhance the efficiency of the visiting staff and its subordinates. A proper organization would provide a sufficient number of attending physicians to insure prompt and efficient attention to every patient. The attending physician or surgeon should have only as many beds as he was able to keep under his eye during every day of his official duty. Once in every twenty-four hours the visiting officer must see every patient, and as much oftener as circumstances required. If this made too much of a demand on the visiting physician, let him have an adjunct or associate. Two visits daily constituted the minimum for the senior interne of the division. If in addition to the senior resident and his first assistant the house staff included at least one physician for every ward unit of twenty or thirty beds, the patient would be on a fair way to receive proper routine medical treatment. It was a wise rule which divided equally between the medical and surgical wards the work of all new men during the first year. There should be an understanding with members of the house staff that each subperiod of service would be regarded as a probationary period, and that advancement depended upon proof of fitness. The efficiency of house and visiting staff depended upon facilities for scientific investigation. In the patient's interest there must be a competent pathologist, having control over all laboratory work of the house staff. The usefulness of this department could be enhanced by admitting volunteer workers under suitable conditions. If specialists were not included in the regular visiting staff the way should be open for the utilization of their talents by naming them as a consulting staff, and they should be subject to control by the division chief similar to that of the visiting

staff. The patient's own physician should not only be tolerated in the ward, but should be welcomed both for the welfare of the patient and because he is entitled to follow his case. Upon the discharge of a patient from the hospital it was the duty of the hospital to see that he was guided into the care of the family physician or directed to the proper division of the outdoor department. An interchange of clinical records between the outdoor department and the hospital was desirable. Unity of control of indoor and outdoor departments was necessary to good hospital government. In large hospitals the supervision of the discharge of patients should be entrusted to an executive officer, preferably a medical man, who should be in touch with all charitable relief agencies in the community which were capable of dealing with any phase of physical or social needs of former patients. Hospitals which were engaged in the promotion of medical education were subject to the keenest criticism both from within and without, and owing to the rivalry among teaching institutions, were bound to favor any policy that would enhance their efficiency. So manifest were the benefits derived by the inmates of a hospital from the school atmosphere that hospitals which endeavored to promote medical education did not need to justify their policy. We were bound to recognize the training of the physician, the promotion of scientific medicine, and the dissemination of its teachings as legitimate hospital functions. The prejudice against the admission of students to the wards of the hospital was due to mistaken ideas concerning the functions and privileges of medical students in hospital wards. A belief existed that students were permitted to do much as they pleased with hospital patients, and that patients were subjected to dangerous experiments. Rational experiments in therapy and constant study of the sciences underlying the treatment of disease marked the progress of every practitioner who was successful in the better sense of that term. The presence of the student admonished the physician to exercise his best care and judgment, since to fail before a critical audience was to suffer injury to his professional reputation. The refusal of the majority of hospitals to open their doors to the students of medicine introduced unwieldly groups of learners into the few hospitals which maintained an educational policy. Once all the hospitals were brought into proper relation with the medical schools the necessity for overcrowded clinics would disappear. There was no great difference between admitting advanced students to the wards and accepting new graduates as internes. The value to medical science which lay in the carefully prepared clinical records and in the intelligent compilation of statistics must not be overlooked. This work should not be entrusted to untrained juniors or uncomprehending clerks. The association of the attending physician and surgeons with medical schools and other hospitals should be encouraged for the purpose of multiplying the sources from which knowledge might be derived. In order to extend the privileges and hospital advantages to a wide circle of the medical profession, it was advisable to limit the number of beds assigned to individual attendings and to provide a substitute for each attending. This plan was superior to one that included larger individual service with frequent rotation of duty as frequent changes interfered with continuity of study and observation which best promoted discovery. In regard to hospital economy, Dr. Goldwater said that true success of a hospital was measured by the good accomplished, and not by the assets accumulated, and the only admissible test for appointments was fitness for work. In one form only was the acceptance of money from medical workers justifiable, and that was when fees were paid by medical students in whose interests facilities for teaching were maintained. This was because of the high cost of a teaching hospital. In regard to the admission of private patients from which many hospitals derived a considerable portion of their income, he said that in charitable institutions the charity patient must not be sacrificed in the interest of income. In planning the organization of such a department the hospital would do well to extend its privileges to a circle sufficiently wide to guarantee a self-supporting department. This could be done without detriment to the charity service. While it was customary to assume that the attending staff was careless of hospital supplies, and while no doubt this was true, the underlying cause of unduly large expenditure was a disregard of economic facts in the medical organization of the hospital. There should be a chief executive officer on economic as well as other grounds. It was not reasonable to expect visiting physicians and surgeons to devote their time to a study of the details of hospital expenditure; but they should be expected to familiarize themselves with facts ascertained through systematic records showing by comparison of ward with ward the amount expended for supplies. As to the question of medical salaries: With every medical appointment there should go a suitable reward for the service exacted. For the attending physician who received opportunities for study, teaching, and prestige, there need be no question of salary; for the house staff the professional rewards were commensurate with the sacrifices made; but medical men who devoted all or a large part of their time to executive work or to laboratory duties were entitled to be paid in money. As to the rights of the medical staff, patients in private wards should pay the attending physician, but no fees should be tolerated from charity patients. There should be due recognition in annual reports of work done by the medical staff; many medical men would always contribute to the hospitals far more than can ever be repaid, and to these honor should ungrudgingly be given. Permanency of tenure should be guaranteed to those whose duties were faithfully performed. To give freest play to intellectual powers proper facilities for scientific research should be provided, and compulsory vacations should be given both for the protection of the self-forgetful worker and to give the assistant preliminary training. The physician should also have a right to participate in hospital councils.

The Medical Staff in Relation to the Needs of the Patient.—Dr. A. Alexander Smith opened the discussion on this phase of the subject. He said that the admission of patients was one of the most difficult questions in connection with hospital administration. At Bellevue it was found that the work was too much for the House Staff, and now there were four salaried physicians each on duty for six hours, thus covering the entire twenty-four hours of the day. He indorsed the plan of having a general medical and surgical chief, but thought the place a difficult one to fill. The expert surgeon too often thought his work done after he had performed the operation, while he ought to see that the patient was properly supervised. Applicants for positions on the House Staff ought not to be chosen because of their ability to pass a mental examination alone. Moral qualifications and general fitness were also essential. The attending physicians were compelled to make daily visits at Bellevue, and each attending physician had his substitute.

Dr. William P. Northrup said one secret of success in hospital service was to idealize the service. He thought twenty to thirty beds enough for one physician to visit. If the service was too large it was bad for both physician and patient. He sometimes visited his wards two, and even three times daily. These frequent visits kept nurses and staff up to the mark. The function of the hospital was to do the best that possibly could be done by the patient, and this was done when the student was admitted, as it stimulated the physician to do his work well. The visit of a body of students stimulated the whole hospital personnel as well as the physician. He was more hopeful on the subject of a general manager than Dr. Smith. He thought that the doctors had enough to do as consultants without looking out for the financial side of hospital administration. In one hospital it was the rule that physicians must first agree among themselves as to what they wanted, and then petition the lay board. This plan had worked well.

Dr. S. Lloyd disagreed with Dr. Northrup as to the mat-

ter of having doctors on the hospital board, and thought that the board should be composed entirely of physicians and surgeons. When a physician had once mastered business principles he was better qualified for hospital management than a layman. As to having a medical and surgical chief, he thought the best results could be obtained where there was such an officer, and the specialist was called in when needed. He thought there was a need for better discipline in the hospitals, and that a daily visit from the visiting physician was not as essential as thorough organization. The making of histories should not be entirely intrusted to the junior, but should be supervised by a competent physician. He thought there was too much hurry and the patients were regarded as so much machinery, and their individuality overlooked. The nervous hysterical patient needed the encouragement of the attending physician. There was a tendency to reduce the number of members of the house staffs, while we should rather seek to increase their number.

The Medical Staff in Relation to Medical Education.—Dr. SAMUEL W. LAMBERT opened the discussion on this topic. He said that this relation had always existed, and from the point of the school the desirability was self-evident and beyond discussion. The necessities of the hospitals themselves called for properly qualified graduate and undergraduate students. Teaching properly done was a help to the hospital and to the patient. In Germany both hospitals and schools were government institutions. In France their relation was recognized, and in England the school was the outgrowth of the hospital and not *vice versa*. Medical practice was of such a nature that it must be learned by experience. Most hospitals in New York City considered the practice of admitting students as a necessity to be endured rather than an advantage to be fostered. Dr. Lambert suggested that another grade be added to the regular staff known as medical clerks and surgical dressers to be filled by fourth-year students. Let the work of these helpers be such that the medical schools could accept this service in lieu of part of the fourth year's course. The mere attendance at a hospital in indiscriminate service, without any definite relation to the subject matter being studied, would be of little use; such work would have to be arranged so as to supplement the school course. While the hospital management, as a rule, did not consider that the hospital had a teaching function, the visiting staff recognized that this system was advisable.

Dr. EGBERT LEFEVRE thought Dr. Lambert's plan was not comprehensive enough. It seemed that under his plan the student was not in the hospital as a learner or observer, but simply as a clerk or dresser. The hospital should establish a regular teaching course that was definite and comprehensive. If this course could be standardized the medical college could accept it as part of the regular course. The fee paid to the hospital should be deducted from the fourth year tuition.

Dr. WILLIAM K. POLK said that as the time had come when the practitioner was expected to know more than was regarded as necessary a few years ago, likewise sanitary requirements were becoming more insistent in all parts of the country, and if the medical profession was to hold its position in the eyes of the public we must give the young practitioner the opportunity to acquire the knowledge expected of him. The profession, as a whole, was far too indifferent to medical education; that it did not seem to recognize the duty of educating those with whom it came in contact. The hospital management was apt to attribute the desire for enlargement of its field of usefulness as desired on grounds of personal exploitation, forgetting that personal exploitation was back of all success. The crying need, not only of the medical school but of the County Medical Society, was education, and this could not be had away from the bedside. It was difficult to find a satisfactory plan, as many men who were excellent visiting physicians lacked the faculty of imparting their knowledge. He thought there should be a greater use of adjuncts and shorter terms for internes as well as more internes. In regard to the undergraduate question, those who taught must show that their object was for the good of the patient rather than for the student. Bellevue was an illustration of how one of the largest clinics in the city was built up in the interests of teaching.

The Medical Staff in Relation to Hospital Economy.—Dr. A. G. GERSTER said that lack of economy in hospital administration was due to lack of stability, the constant change of staff. The House physician was there for the purpose of acquiring knowledge, and not of practising economy. The nurses were also always changing, but he thought the visiting staff ought to give the subject more attention, for if they took no interest in economy no one else would. The visiting staff should not only spend more time in the hospital, but should have regular visiting hours. Hospital expenses were increased by keeping patients too long under observation in the hospital. The dispensary should form an integral part of the hospital, and every large hospital should have a convalescent home in the country, where the patient could be well taken care of at one-half the cost of maintenance in the city.

The Medical Staff in Relation to the Rights of Its Members.—Mr. LEO ARNSTEIN said that the hospital existed for the communal good in the widest sense of that expression. If the supposed rights of the staff interfered with this communal good they were not rights. As the hospital was dependent upon the medical staff, no demand that staff could make was too great provided it did not interfere with the communal good. He did not believe in a board composed entirely of medical men; usually it was safe to leave the good of the community in the hands of a third party, and this should be the lay board.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON DERMATOLOGY.

Stated Meeting, Held January 8, 1907.

DR. A. R. ROBINSON, IN THE CHAIR.

Neurotic Eczema with General Alopecia.—Dr. BULKLEY presented this patient, a girl fourteen years of age. Her father was said to have had eczema in childhood, and her mother was nervous. The patient had measles and varicella in childhood, but never diphtheria. For about two years, from two to four years of age, she had a generalized eczematous eruption. Her teeth and finger nails had always been bad, and she had noticed no change in them as a result of the present disease. She had always been nervous, but had had no serious illness. Her menses were regular and painless. She had never noticed either axillary or pubic hair. The present eruption began last August, coming first on the abdomen, then on the arms and neck, and in October or November spreading all over the body. There was no history of nervous shock, but at the time of the onset she was overtired from loss of sleep. The hair began to fall in October, beginning on the vertex, and reached the present condition in about six weeks. When presented before the Section, the scalp showed several large, very irregular, but fairly sharply defined areas over which the skin was smooth, slightly atrophic, and bald, while between these areas the skin was thicker, and showed a good many stubs and a few long hairs. Scattered over the scalp were the stains and dry crusts left by the antecedent eruption. The eyebrows were gone, the eyelashes were thin, and there was no hair in the axillæ, or over the pubes. All the finger nails, except that of the middle finger of the right hand, were pitted, the pits being arranged roughly in parallel horizontal lines. The distal half of each incisor tooth was badly eroded. Scattered over the whole surface of the body were irregular, poorly defined areas of eruption, consisting of itching red pupules and papule vesicles. Where the eruption was more intense the elements ran together to form weeping surfaces, as in the bends of the elbows and over the manubrium sterni.

Dr. Pollitzer said the case was not one of typical alopecia areata. He thought the condition was due to some form of intoxication.

Dr. Holder agreed with Dr. Pollitzer that a general toxic disturbance would account for the universal change in the skin. The skin on the back seemed to have the follicles plugged by horny tissues, giving the skin an appearance of unusual roughness.

Dr. Leviseur, from the anemic appearance of the patient, believed this case to be one of leukemia, and the skin affection, as well as the loss of hair, to be one of those cutaneous complications not infrequently appearing in connection with leukemia and pseudoleukemia. He asked if a blood examination had been made.

The Chairman believed also that some profound disturbance or intoxication was present to account for some of the conditions. As regarded the alopecia, the facts that there were no circular bald patches, that bald patches did not form by falling out of hair at the periphery, and, finally, that very many of the hairs were broken off, would, in his opinion, exclude the diagnosis of alopecia areata. He regarded the alopecia as connected with organisms in the scalp, and probably the same ones as caused the seborrheal eczema.

Dr. Bulkley, closing the discussion, reminded those present that the structure of the hair, nails, and epidermis were all much the same, and that they had all shared in the same degenerative process. He also called attention to the teeth, which were all misformed, indicating that a depraved vitality had been in operation for some time. He did not look upon the girl's condition as due to toxemia, or autointoxication, like that found in urticaria, and did not believe that a toxemic condition could produce such profound alterations. The entire condition could come from some nervous shock or strain, affecting the nutrition of the tissue, a degenerative neurosis. She had an early history of eczema, at four to five years of age, and the skin was likely to take on eczema again, so that he would regard the present condition of the skin as a neurotic eczema, with possibly alopecia areata of the eyebrows, but the loss of the hair on the scalp could hardly be regarded as the latter. The patient had just only entered the New York Skin and Cancer Hospital, and had had very little treatment as yet. While the history presented stated that the disease dated back only a few months, he felt sure from the teeth, nails, and hair that some disturbance of nutrition, probably of neurotic nature, had been going on for a long time.

Lupus Vulgaris.—Dr. Bulkley presented this patient, a woman, thirty-four years of age, from Dr. Fox's service at the New York Skin and Cancer Hospital. She had had the disease since three years of age, and had been subjected to much treatment. Some of the diseased tissue was removed and skin grafting performed eight years ago. For two years she had been in the New York Skin and Cancer Hospital, under the care of Dr. Fox, who had treated many of the lesions with the dental burr, and more recently had treated the lesions on the mucous surface of the upper lip with electrolysis. When shown before the Section, the condition was largely the result of the past disease and of treatment, there being few lesions which could be recognized as lupus vulgaris. The nose was greatly disfigured, a good part of the right ala being gone. The affected area covered also most of the left side of the face, which was irregularly scarred, with great ectropion of the left eye, for which a plastic operation had been performed, with partial success.

Dermatitis Papillaris Capillitii.—Dr. Leviseur presented a man thirty-five years old, who five years ago had what was supposed to be a boil on the vertex of his scalp. It was an elevation the shape of a cherry, not painful, and discharged a sticky material. As local applications did not benefit it, the tumor was opened extensively, the operation leaving a keloidal scar three inches long and a quarter of an inch in width. From time to time, in the vicinity of this bald spot, there appeared rather suddenly pea-sized nodules, which grew, opened, and discharged a small amount of pus. Some of them disappeared occasionally; others remained and became covered with wart-like excrescences rather hard, and perforated by a number of hairs bunched together. When the patient first came to Dr. Leviseur on November 25 he had five distinct lesions aside from the keloidal scar, two immediately at its border, the others scattered about, but not far removed. It was quite easy to puncture the lesions, some of which had no opening, and the probe went in very deep, particularly on the tumor covered with papillomatous formations. The patient's hair was very coarse. He was a letter carrier and wore a tight-fitting cap. The sebaceous follicles connected with the hairs all over the scalp presented a comedo-like appearance. The diagnosis dermatitis papillaris capillitii was made, although the localization was rather exceptional. The lesions, particularly those covered with warty growths, were cauterized with nitric acid and disappeared, but a few follicular nodules formed again, always in the vicinity of the old lesions. The hair had grown somewhat thin in the whole region. Microscopically there were no changes in the hair. Thorough destruction of the individual spots seemed to be the only therapeutic measure which benefited the patient.

Dr. Lapowski said that he did not consider the case to be one of Kaposi's dermatitis papillaris capillitii, but thought it to be an infectious folliculitis. In Kaposi's disease the lesions were harder and more infiltrated. In cases which had come under his observation, he had not seen such lesions as appeared in this case. He would like to see the appearance of these lesions after being treated for a month with mild antiseptics only.

Dr. Bulkley said that, while the condition present might in a measure suggest dermatitis papillaris capillitii, he did not feel that it could quite properly be classed with those cases thus described—although undoubtedly there was a dermatitis. He regarded the trouble simply as one due to ordinary pus infection, modified by treatment. The sebaceous glands of the scalp being very large and deep seated, there was always deep inflammation when they were thoroughly infected, and this he had often seen to be a very chronic nature: the results of inflammatory action could readily give rise to the apparently papillomatous condition.

Dr. Leviseur, closing the discussion, said that the papillomatous feature of the lesions was missing on account of the removal of the warty excrescences by strong caustics, and apologized for showing the case in this condition. The duration of the disease, five years, its localization near the keloidal scar, its resistance to ordinary treatment alone, seemed to him to militate against a diagnosis of simple folliculitis or sycosiform staphylococcus infection.

Raynaud's Disease Probably of Syphilitic Origin.—Dr. Lapowski presented a man thirty years of age, a Pole by birth. He was married and had two children, three years and one year old respectively, and his wife had had no miscarriage. Both family and personal history were negative, there being no history nor visible symptom of any form of intoxication in the patient, who was a man of temperate habits, a clothing-cutter by occupation. His present trouble had begun in the winter three years before, with pain in the tip of the middle finger of the right hand. The pains were remittent, and appeared without any premonitory symptoms, accompanied by a very cold feeling in the finger tips. The finger nail was removed by a physician, and gradually a gangrenous condition developed in the third phalanx, necessitating its amputation. Dr. Lapowski saw him for the first time at the Good Samaritan Dispensary in the winter of 1905, with pain and slight suppuration of the tip of the middle finger of the left hand. The patient was then given potassium iodide, but he disappeared, returning after several months of great improvement; the tips of the fingers were thinner, only slightly cyanotic, neither ulcerated nor painful. This improvement was the result of anti-

syphilitic treatment (inunctions, injections, and potassium iodide) which he had received at the Mount Sinai Hospital. Two months later the tip of the right ring finger became cyanotic and swollen, but improved under antisyphilitic treatment. Two months ago he began to have pains in the left second toe, accompanied by a cold feeling. Since 1905 he had been sexually impotent. When shown before the Section, he was pale and tired looking. The middle finger of the right hand lacked the terminal phalanx, which had been amputated three years before. The stump was cold to the touch, swollen, slightly cyanotic, and the skin was tight, so that he could not bend the phalangeal joint. The metacarpo phalangeal joint was normal. On the right index finger the nail bed was white from the lunula to the anterior third; the surface of the nail was smooth. The terminal phalanx of the fourth finger of the right hand was cold and swollen, the peronychium and the part around the lunula were red. The entire nail was raised from its bed, the entire matrix hypertrophied, and the space between the body of the nail and the matrix filled with dry, whitish, hard particles. The right little finger was slightly cyanotic. The left index finger had a thin conical terminal phalanx, and the patient could not bend the joint between it and the second phalanx; there was only the remnant of a nail. The first phalanx of the big toe of the left foot was swollen, cyanotic, painless to the touch, and cold. On the lower surface of the toe there was a pea-sized ulcer, with grayish floor, and sharply cut edges; neither the surrounding tissue nor the base was infiltrated. The sore was painful to the touch. The second toe of the left foot had a round infiltration, occupying the region over the joint between first and second phalanges. In the center there was a pea-sized ulcer with a necrotic center and slightly raised edges. The whole toe was cold to the touch, cyanotic, and painful. The right little toe was cyanotic. The nose and ears were normal. The pulse was small and hardly perceptible in either the radial or the perineal arteries. There was no albumin in the urine. The heart and lungs were normal.

Dr. Holder said that the case was undoubtedly one of Raynaud's disease. The improvement under antisyphilitic treatment suggested a syphilitic origin in spite of the failure of Dr. Lapowski to obtain a history of syphilis in his patient. The coldness and cyanosis of the fingers indicated some interference with the arterial circulation, and were the most important symptoms in making the diagnosis of Raynaud's disease.

Dr. Bulkley remarked that we did not yet know the entire clinical history of syphilis. He regarded it as an important fact that the man, although he denied syphilitic disease, was born in Russia. There were areas in Russia where there were great numbers of syphilitics; indeed in some districts almost the entire population had been at some time infected, many being infected in infancy by household utensils, nursing, etc. These cases were frequently untreated, and showed the results of syphilis in later life. He recalled the fact that Dr. Fox showed a case at a meeting of the New York Dermatological Society, some time ago, in which a similar condition was going on in the toes. One of the toes had been amputated, and gummatous tissue was forming around. The case was originally shown as a possible case of Raynaud's disease, with cold toes, etc. This man was entirely cured with antisyphilitic treatment, the speaker himself having watched the case with interest in the New York Skin and Cancer Hospital. Syphilitic arteritis manifested various symptoms, some of which easily resembled Raynaud's disease, for this in reality was often only a name to cover a certain group of symptoms. He thought that some of the lesions on the toes suggested diffuse form of gummatous syphilitic infiltration; he would put the patient at once on a strong mixed treatment, and believed that he would recover completely.

The Chairman agreed with the diagnosis of Raynaud's disease or local asphyxia. He was not so positive that the gangrenous lesions were to be regarded as simply gummatous, that sections would show the anatomical character of ordinary gumma. As regarded the treatment of these cases, he would state that the first case under his observation had a syphilitic history and was treated by iodides without any benefit, but perhaps the dose given was too small. The patient was a physician, and the first post mortem made in this disease was upon this patient.

Dr. Lapowski, closing the discussion, said that when the patient came to the Good Samaritan Dispensary in 1906 with a gangrenous condition of the finger tips, there was not the slightest clinical resemblance to syphilis. Nevertheless, a great improvement followed the use of antisyphilitic treatment. This showed that in cases of so-called Raynaud's disease, even if there were no specific symptoms, it was advisable to use mercury. He promised to give this patient inunctions and calomel injections, and to present him at the next meeting.

Dr. Lapowski reported that the man presented by him October 30 as a patient with a tuberculide, had received four calomel injections. There was great improvement after each injection, but a new eruption appeared on the arms and thighs, starting with the sudden appearance of a tubercle under the skin; the skin itched and the epidermis was scratched off, leaving a slightly depressed center, which gradually underwent necrosis. He had never seen such an eruption in syphilis. He would give him no more injections, and hoped to present him at the next meeting.

Dr. Lapowski also reported that he had found the *Spirochæta pallida* in each one of the three chancres on the man presented at the December meeting.

The Williamsburg Medical Society.

At the first regular meeting of this society, held January 9, 1907, the President, Dr. Leon Loeria, in his inaugural address, explained that the aims of this new society were not merely to provide a lecture room for favored speakers, but mainly to establish a forum in which all its members could voice their opinions. Besides inviting the aid of outside medical forces, and the views of specialists in medicine, it was to reserve the larger part of its program for its own members, who, although affiliated with other organizations, rarely took part in their discussions. It was urged that those whose opportunities for hospital and research work were limited, were nevertheless fitted to speak with the authority that bedside observation conferred, for this observation was the source of most medical knowledge. The recital of a case was usually the means of bringing forth new light and discovering new ideas. Dr. Jacob Fuhs presented and gave the history of a case of "Raynaud's disease." The patient, a girl nineteen years old, at the age of [illegible] had an arrest of growth. Four years later she was treated for rheumatic pains in the hands and feet. A year later she complained of her stomach, had a [illegible] and passed per rectum as much as a quart of blood. A possibility of typhoid had been suggested. Four years later, complaining of epigastric pain, she had come under the care of the speaker, and improved under a diet and with alkalies. Under thyroid medication she had grown four inches. For past two winters she had noticed that when placed in water her fingers and toes would turn white and lose all feeling. This had not occurred during the summer. During the past winter some of the fingers and toes [illegible] were purple, and subsequently gangrenous spots appeared on the hands and feet. Apart from these [illegible] manifestations of local syncope, asphyxia, and gangrene, examination revealed nothing except the [illegible], height and a slight enlargement of the [illegible] and duplication of the second pulmonic sound. There was [illegible] anæmia. Dr. Fuhs also read a paper on "Ulcerations of the Stomach," based on three cases that he had recently seen.

The lesion revealed a chronic catarrhal gastritis with chronic interstitial infiltration with, in one case, atrophy of the glands. Although epigastric pain was not, as a rule, severe, epigastric tenderness was present in all cases, but this was not located at Boas' point. Usually there was moderate emaciation. The diagnosis depended on finding pieces of gastric mucosa in the stomach washes, the epigastric tenderness, and the persistence of the disease for years. It was necessary to distinguish this disease from cancer and ulcer. The treatment included diet, rest, and the use of bismuth and silver nitrate. Dr. SAMUEL M. BRICKNER of New York read a paper entitled "The Rational Treatment of Fever in the Puerperium." He deprecated the unnecessary labeling of most diverse conditions as "puerperal sepsis," and emphasized the importance of making a pathological diagnosis. Apart from other conditions, such as lobar pneumonia, pulmonary infarct, mastitis, thrombophlebitis, typhoid fever, malaria, or any other acute infectious, fever in the puerperium was due to any one of many lesions in the genital tract, which were classified under the heading puerperal sepsis as distinguished from extragenital sepsis. Of the former, one had to consider extrapelvic and intrapelvic lesions. The extrapelvic lesions included vulvar and vaginal forms of sepsis and conditions in the abdominal wall. The physician frequently succeeded in carrying, by means of the intrauterine douche, an infection from the vulva, where it was harmless, to the uterus, where it would become fatal. For the vaginal and vulvar lesions mild antiseptic douches were all that was necessary, with a gauze drain and a wet dressing to the vulva. Of the intrapelvic lesions, the speaker confined his remarks to only three conditions. One of these was uterine sepsis resulting from premature rupture of the membranes, with delay in the onset of labor beyond eighteen to twenty-four hours, and the introduction of septic material from without. To avoid this he advocated the induction of labor. The next form was that due to retained secundines. It was a false theory that advised entrance into the uterus for a small piece of placenta or a shred of membrane. These usually came away by themselves. The third condition discussed was that of retroversion or retroflexion of the uterus, causing retention of lochia.

Status Lymphaticus; Its Significance in Sudden Death Following Serum Injections and in the Treatment of Diphtheria.—A. P. Ohlmacher defines status lymphaticus as a so-called constitutional disorder whose chief anatomical characteristics are a persistent or hyperplastic thymus and general lymphadenoid hyperplasia, frequently associated with hypoplasia of the arteries and heart, and the osseous or other changes of rickets. Many competent authorities ascribe to the lymphatic state a distinct relationship with certain neuroses, including the so-called "thymic" sudden death. As to the treatment of this condition, aside from measures indicated for rickets when this disorder exists, there are no therapeutic resources. The writer believes that it is entirely justifiable to conclude that most, if not all, of the fatal accidents of serum therapy are examples of lymphatic sudden death. The status lymphaticus predisposes to an enfeebled resistance against infections, particularly against diphtheria. Information concerning status lymphaticus and its neuroses, especially those in the category of sudden death, should be more widely disseminated. The writer concludes that no questionable case in which death has followed a serum injection should be permitted to close without a thoroughgoing autopsy, having in view the possibility of disclosing the anomalies of status lymphaticus. And both to protect the reputation of the specific remedy for diphtheria—the antidiphtheritic serum—and that of the physician, the significance of status lymphaticus as modifying the prognosis, course, and treatment of diphtheria should be kept clearly in view.—*Detroit Medical Journal.*

Surgical Suggestions.

Rectal Feeding.—The conditions that must be present in order for attempts at rectal feeding to be successful are summed up by Becker as follows: (1) The rectum must be in a fairly normal condition. Inflammation of any kind, especially eczema, internal piles, or pressure by the fundus or cervix uteri upon the rectum, must be absent. If such conditions do exist, they must be ameliorated if possible. (2) The rectum and descending colon must be free from contents. (3) The composition of the food introduced must correspond to physiological exigencies of the rectum and colon. (4) The food must contain as much nutrition as possible, condensed to as little volume as possible. The volume should never exceed 250 c.c. (5) The temperature of the food is of great importance. It should range between 42 and 45 degrees C. (6) The rectum and the colon should be quieted an hour before and a few minutes after the meal with an opium and belladonna suppository—not morphine, which has a tendency to produce vomiting.—*Wisconsin Medical Journal.*

Iodine Catgut.—The value of the iodine method of sterilizing catgut is being universally recognized, and Burmeister states that he has obtained the best results by using a solution containing 1 g. of iodine in 15 c.c. of chloroform. The catgut is immersed in this solution, and is ready for use at the end of a week. He considers that catgut prepared in this way is superior to that made by using aqueous or alcoholic solutions of iodine, in tensile strength, absence of irritating qualities, and in the fact that it does not swell in the tissues.—*Zentralblatt für Chirurgie.*

Bichloride Gauze.—According to Powell, the following is a convenient method of preparing this surgical dressing: Take ordinary cheese-cloth and boil in water made alkaline by the addition of common washing soda; wring the cloth out in hot water; boil again in plain water; then run through a bichloride solution 1:200 and pack away moist in sterile jars. This gauze, immediately before using, should be wrung out in a solution of bichloride, 1:1000.—*The Clinical Review.*

Tattoo Marks.—Variot of Paris proceeds as follows: Apply under antiseptic precautions a concentrated solution of tannin to the skin and work it in as in tattoo operation. Then rub skin with pencil (or solution) of silver nitrate until the tattoo marks stand out as black points on the silver tannate. Excessive fluid should be removed; the surface turns black and moderate inflammation follows. In fourteen days the eschar drops off, leaving a red superficial cicatrix which fades in seven or eight weeks." This plan is safe and sure—but painful and tedious. Ordinary slight tattoo marks (powder marks, etc.) may often be removed by pricking in peroxide of hydrogen. Another plan is to tattoo well over mark with needles dipped in a solution of chloride of zinc thirty parts, distilled water forty parts. Eschar drops in two weeks. Then dress area with simple cerate. The fact that the insoluble substances which are used in tattooing become encapsulated explains the difficulty experienced in their removal. Under the microscope excised portions of tattooed tissue show large particles of pigment situated part in the corium but more generally in the subcutaneous connective tissue itself. In the method by electrolysis the needle is attached to the negative pole of a battery with a current of from two to ten milliamperes and inserted at various points about the periphery of stained area till reaction is marked enough to insure destruction of involved tissue. The dry superficial eschar falls in a few days and the process may be again employed over the adjacent skin.—*The American Journal of Clinical Medicine.*

Irritation of the Epiglottis for Resuscitating the Apparently Asphyxiated.—Tickling the epiglottis with the finger has been found by Friedenthal to be a highly effective method of resuscitating those who are in a state of asphyxia from drowning, anesthesia, etc. He describes the procedure in this way. The method, he says, consists in introducing the hand into the mouth of the patient until you feel the epiglottis and then moving the index finger to and fro over the epiglottis. Thus a very powerful effect is exercised directly upon the nerves to be considered in this connection, viz., the glossopharyngeal supplying the anterior surface of the epiglottis and the inner branch of the superior laryngeal nerve supplying the posterior surface of the epiglottis, the base of the tongue, etc. The epiglottis is that organ of the human body which is particularly capable of inducing reflex action on the least irritation, and we all know how much difficulty we often have to avoid this irritability in laryngeal work. And this is just what we need in asphyxial conditions whatever be their cause.—*St. Louis Medical Review.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

VERMONT STATE BOARD OF MEDICAL REGISTRATION.

January, 1907.

CHEMISTRY.

1. (*a*) Discuss the chemical characteristics of a good drinking water. (*b*) State the most important fact about hydrogen.
2. Name two gases that have not been liquified.
3. (*a*) How is H_2O_2 made? State strength. (*b*) Name four alkali metals and give symbol of each.
4. (*a*) Mention the principal proteids of nerve tissue. (*b*) What is saccharin?
5. (*a*) Define urobilin, urochrome, uroerythrin. (*b*) What leaves the body mainly through urea? (*c*) Give test for urea and state number of grains normally excreted in twenty-four hours.

MATERIA MEDICA.

1. (*a*) State dose and strength of dilute hydrocyanic acid. (*b*) What preparations used in medicine contain it?
2. Give the composition, uses, and dose of the following preparations: (*a*) Spirits of Mindererus, (*b*) compound syrup of squills, (*c*) Pearson's solution, (*d*) Griffith's mixture, (*e*) brown mixture.
3. Name the alkaloids, preparations, and doses of ipecac.
4. (*a*) Give the source, dose, and action, of the following alkaloids: sparteine, berberine, atropine, narceine. (*b*) Give the strength of the following: tincture of capsicum, tincture of rhubarb, tincture of colchicum seeds, tincture of digitalis, tincture of aconite, tincture of hyoscyanus, tincture of veratrum viride, tincture of belladonna.
5. Discuss the composition and physiological action of ergot.

THERAPY.

1. Briefly explain:—natural therapeutics, empirical therapeutics, rational therapeutics.
2. Write a formula for each of the following: acne rosacea, hysteria, angina pectoris, bronchiectasis, chronic nasal catarrh, enuresis, diabetes insipidus, hepatic cirrhosis, hiccough, influenza.
3. How would you treat and manage a case (*a*) of infantile convulsions? (*b*) of renal and vesical calculi?
4. Mention the indications for the following drugs: potassium chlorate, salicylic acid, phosphorus, chloral, cantharides, carbonate of ammonia, potassium bromide, elaterium, guaiacol carbonate, stramonium.
5. Give your drug and dietetic treatment of typhoid fever.

ANATOMY.

1. Describe the bones of the foot, giving their divisions and articulations.
2. Describe the occipitoatloid articulation.
3. Name the superficial muscles of the neck and scalp, and give the origin, insertion, and nerve supply of any one of them.
4. Describe the portal system of veins.
5. Give the origin, course, and termination of the thoracic duct.
6. State the origin, course, and distribution of the sixth pair of cranial nerves.
7. Describe the special organs of taste, and give their nerve supply.
8. Name the coverings of femoral hernia from without inward.
9. Describe the prostate gland and give its relations.
10. Give the normal position, size, form, ligaments, blood, and nerve supply of the uterus

PHYSIOLOGY.

1. Give the classification of nerves.
2. Of what does the cerebrospinal axis consist?
3. Name the coverings of the brain, and describe them.
4. Describe and give location of the corpora quadrigemina, also give function.
5. Describe healthy urine, and give constituents.
6. What are enzymes? State the special functions of each enzyme concerned in digestion.
7. Describe the proteid digestion, and name the ferments concerned therein.
8. Into how many classes are food stuffs divided? Name them.
9. What is meant by the automatic action of the spinal cord? Give three examples.
10. Name some of the kinds of cells found in man. What is epithelium? What are its varieties?

HYGIENE.

1. What is meant by personal, domestic, and public hygiene?
2. What is the distinction between sewer air and sewer gas? What gives sewer gas its peculiar odor?
3. Give the hygiene of the secretory organs.
4. How do disease germs produce their characteristic effect on the system?
5. What constitutes a thorough inspection of milk as to food value and purity?

BACTERIOLOGY.

1. Classify bacteria, and state the difference between a saprophyte and a parasite.
2. State the difference between a toxin and a ptomain. Give five sources of ptomain poisoning.
3. Describe the gonococcus, and give method of staining the same.
4. State microscopical appearance, and staining peculiarities of the tubercle bacillus.
5. What evidences of contamination of drinking water may be obtained by bacteriological analysis? Compare the value of chemical analysis with that of bacteriological analysis.

PATHOLOGY.

1. Give the pathological difference between moist and dry gangrene.
2. Give the pathological anatomy of lobar pneumonia.
3. Give the pathology of carcinoma.
4. Give the pathology of typhoid fever.
5. Give the pathology of chronic arteriosclerosis.

PRACTICE.

1. Give the treatment, including preventive treatment, of typhoid fever, also that for the more common complications of this disease.
2. Give the etiology of, and describe the different types of influenza.
3. Give the differential diagnosis (*a*) between rubeola and rubella, (*b*) between rubeola and scarlatina.
4. Give differential diagnosis between variola and varicella.
5. Give the period of incubation of the diseases mentioned in questions 3 and 4, also the proper period for quarantine in each.
6. (*a*) Mention the different types of pneumonia; (*b*) give its treatment.
7. Differentiate betwixt cardiac hypertrophy, cardiac dilatation, and pericarditis with effusion.
8. Write a short article on hemophilia.
9. How would you manage a case of chronic interstitial nephritis?
10. Give the symptomatology of tabes dorsalis.

SURGERY.

1. What are toxins, antitoxins, and phagocytes?
2. Describe four methods of reducing dislocation of the shoulder.
3. How would you treat a fracture of the elbow joint?
4. What is septicemia and pyemia? Give causes.
5. Differentiate between acute ovaritis of the right side and appendicitis.
6. Describe the mastoid operation for suppuration.
7. Name and describe four forms of talipes.
8. Describe fistula in ano, and give treatment.
9. Give symptoms of acute cystitis, and write a prescription for same.
10. Describe in detail Bassini's operation for inguinal hernia.

OBSTETRICS.

1. Enumerate signs of pregnancy and indicate relative importance.
2. Describe the management of a case of R. O. P. presentation.
3. Give symptoms, diagnosis, and treatment of placenta previa.
4. Give causes and treatment of mastitis.
5. What, how often, and how much would you feed a baby one week old?
6. Name at least six of the most common conditions calling for the use of forceps.
7. Give management of a case of miscarriage.
8. Give prophylactic treatment of postpartum hemorrhage.
9. Give treatment of puerperal sepsis
10. Give diagnosis and treatment of extrauterine pregnancy after rupture.

GYNECOLOGY.

1. Describe the uterus.
2. Give causes and treatment of ovaritis, acute and chronic.

3. Give symptoms and treatment of retroversion of uterus.
4. Give contraindications for use of uterine sound.
5. Give symptoms and treatment of acute vaginitis.

LEGAL MEDICINE.

1. Give a definition of a medicine, also of a poison.
2. Give examples of mania, monomania, dementia, and idiocy.
3. What is the difference between civil and criminal malpractice?
4. Give your reasons that a child had been born alive.
5. Describe a bullet wound, entrance and exit.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

VERMONT STATE BOARD OF MEDICAL REGISTRATION.

January, 1907.

CHEMISTRY.

1. (*a*) It should be colorless, odorless, cool, limpid, soft; it should have an agreeable taste, neither sweet nor salty nor flat; it should dissolve soap readily without formation of a curdy precipitate; it should contain not more than twenty-five to thirty grains of harmless solids per gallon, and should not be contaminated with sewage, lead, or other poisons, or pathogenic bacteria.

(*b*) There is no most important fact about hydrogen; the following are all of them facts, the relative importance of which must be decided by the examiner for himself: Hydrogen is a necessary element in the composition of all acids, also of water; the weight of its atom is the unit by which all atomic weights and molecular weights are measured; it is the lightest known substance.

3. (*a*) H_2O_2 is made by adding barium dioxide to a solution of dilute hydrofluoric acid. The strength is a ten to twelve volume solution.

(*b*) Lithium, Li.; Sodium, Na.; Potassium, K.; Rubidium, Rb.

4. (*a*) Albumin, globulin, nucleoproteid, and neurokeratin.

(*b*) Saccharin is benzoyl sulfonic imid, or anhydro-ortho-sulphamine-benzoic acid

5. (*a*) *Urobilin* is a brownish pigment found in the urine, the feces, and sometimes in the blood.

Urochrome is a yellow pigment of the urine.

Uroerythrin is a reddish pigment sometimes found in the urine.

(*b*) Nitrogen.

(*c*) A comparatively easy test is that of Fowler, based upon the loss of the specific gravity of the urine after the decomposition of the urea by hypochlorite. "To apply this method the specific gravity of the urine is carefully determined, as well as that of the liquor sodæ chlorinatæ (Squibb's). One volume of the urine is then mixed with exactly seven volumes of the liquor sodæ chlorinatæ, and, after the first violence of the reaction has subsided, the mixture is shaken from time to time during an hour, when the decomposition is complete; the specific gravity of the mixture is then determined. As the reaction begins instantaneously when the urine and reagent are mixed, the specific gravity of the mixture must be calculated by adding together once the specific gravity of the urine and seven times the specific gravity of the liquor sodæ chlorinatæ, and dividing the sum by eight. From the quotient so obtained the specific gravity of the mixture after decomposition is subtracted; every degree of loss in specific gravity indicates 0.7501 gram of urea in 100 cc. of urine. The specific gravity determinations must all be made at the same temperature, and that of the mixture only when the effervescence of gas has ceased entirely." (Witthaus' *Manual of Chemistry*.)

MATERIA MEDICA.

1. (*a*) Doses: [illegible] of minims; *strength* is two [illegible]

(*b*) [illegible] Salicylic [illegible] benzoic

[illegible] of Hydrastis Canadensis

2. (*a*) *Solutio* of Mindererus [illegible] solution of [illegible] per cent.

[illegible] of the [illegible] carbonic acids

[illegible] four drams.

(*b*) *Compound syrup* of *squill's* contains fluid extract [illegible] of senega, tartar emetic, sugar, chloric phos[illegible] water. Dose, half a dram

(*c*) Pearson's *Solution* solution of sodium arsenate, [illegible] of the alcohol water. Dose, three minims.

(*d*) *Griffith's mixture* is compound iron mixture, and contains ferrous sulphate, potassium carbonate, myrrh, sugar, spirit of lavender, and rose water. Dose, four drams.

(*e*) *Brown mixture*, is compound mixture of glycyrrhiza, and contains extract of glycyrrhiza, syrup, acacia, wine of antimony, spirit of nitrous ether, camphorated tincture of opium, and water. Dose, two drams.

3. *Alkaloids:* Emetine, cephaeline, and a third, unnamed alkaloid.

Preparations and Doses: Fluid extract, ♏xv; powder of ipecac and opium, gr. viiss; syrup of ipecac, ♏xv, as an expectorant, ℥iv as an emetic; wine of ipecac, ♏xv; tincture of ipecac and opium, ♏viij.

4. (*a*) *Sparteine*, from scoparius, sparteine sulphate, gr. 1/5; *berberine*, from hydrastis, calumba, berberis, and other plants, berberine sulphate, gr. ss. to gr. jss; *atropine*, from atropa belladonna, gr. 1/100; *narceine*, from opium.

(*b*) The tinctures of capsicum, colchicum seeds, digitalis, aconite, hyoscyamus, veratrum viride, and belladonna are ten per cent. strength; tincture of rhubarb is twenty per cent. strength.

5. The composition of ergot is indefinite; the chief constituents are: Ergotine, ergotinine, ecboline, sphacelic acid, ergotinic acid, cornutine, tannic acid, and other substances. Most of these ingredients contract the blood-vessels; the cornutine, in addition, is credited with the chief part in contracting the uterus.

THERAPY.

1. *Natural therapeutics* comprises the processes which may be included under the general heading of the healing or recuperative powers of the organism itself, independently of any outside aid. Rest and sleep are examples.

Empirical therapeutics is a term applied to such remedies as are used simply because they have been found beneficial in certain cases.

Rational therapeutics means the use of remedies based on a combined knowledge of their physiological action and of the pathological condition present in the patient.

2. For *acne rosacea:*—℞ Zinci sulphatis
Potassii iodidi āā ℥ss
Aquæ rosæ, q. s. ad ℥iv. Misce
Sig: Use as a lotion.

For *hysteria:*—℞ Tincturæ asafœtidæ
Tincturæ valerianæ ammoniatæ āā ℥j
Aquæ camphoræ, q. s. ad ℥iij. Misce
Sig: One tablespoonful every hour.

For *angina pectoris:*—℞ Pearls of nitrate of amyl, ♏iij. No. x.
Sig: Crush one and inhale when required.

For *bronchiectasis:*—℞ Potassii iodidi ℥j
Glycerin ℥iij
Syrupi senegæ ℥j
Aquæ destillatæ q. s. ad ℥iij. Misce.
Sig: A dessertspoonful one hour after meals.

For *chronic nasal catarrh:*—℞ Sodii boratis
Sodii bicarbonatis āā ℥ss
Phenol gr. xv
Glycerini ℥ss
Aquæ destillatæ O. j. Misce.
Sig: Use as a spray.

For *enuresis:*—℞ Potassii citratis ℥ss
Spiritus etheris nitrosi ℥vj
Aquæ destillatæ q. s. ad ℥ij. Misce
Sig: A dessertspoonful every four hours.

For *diabetes insipidus:*—℞ Fluidextracti ergotæ ℥iss
Aquæ destillatæ q. s. ad ℥iv. Misce
Sig: One teaspoonful, three times a day.

For *hepatic cirrhosis:*—℞ Potassii iodidi ℥ijss
Aquæ destillatæ ℥ij. Misce
Sig: One teaspoonful in a tumbler of water one hour before meals

For *hiccough:*—℞ Spiritus etheris compositi ℥j
Sig: One teaspoonful in a glass of ice-water.

For *influenza*—℞ Quininæ hydrobromatis
Sodii benzoatis
Caffeinæ āā gr. xx. Misce, et fiat massa in pilulas No. xx, dividenda
Sig: Take one three times a day.

ANATOMY.

8. Skin, superficial fascia, cribriform fascia, crural sheath, septum crurale, subserous areolar tissue, and peritoneum

PHYSIOLOGY.

1. Nerves are classified as—I. Efferent nerves, or centrifugal nerves, which may be motor, accelerator, inhibitory, secretory, or trophic nerves. II. Afferent nerves, or centripetal nerves, which include nerves of general sensation, special sense and of pain. III. Intercentral nerve fibers, which connect different parts of the nervous system.

4. The corpora quadrigemina are four small rounded eminences situated over the aqueduct of Sylvius. They are arranged two on each side behind the pineal body, and are separated from each other by a crucial depression. They are white on the surface, but contain gray matter in the interior. As to their *function*, they contain centers for the contraction of the pupils and for the coördination of the movements of the eyeballs.

6. Enzymes are unorganized ferments which are the result of the activity of special cells of the animal body.

	ENZYME.	FUNCTION
Saliva	Ptyalin.	Changes starches into dextrin and sugar.
Gastric juice	Pepsin.	Changes proteids into proteoses and peptones in an acid medium.
	A curdling ferment.	Curdles the casein of milk.
Pancreatic juice	Trypsin	Changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; in an alkaline medium.
	Amylopsin	Converts starches into maltose.
	Steapsin.	Emulsifies and saponifies fats.
	A curdling ferment.	Curdles the casein of milk.

8. Food stuffs are divided as follows:—

I. Inorganic: Water. Salts.

II. Organic: Non-nitrogenous: Carbohydrates. Fats. Nitrogenous—Proteids.

9. By automatic action of the spinal cord is meant that property of the nerve cells of the cord by virtue of which they become active as the result of changes within the cord, and without any external stimulus. Some of the centers in the cord may act automatically, but as a rule they act as reflexes in response to external stimuli. Examples are parturition, defecation, and micturition.

HYGIENE.

2. *Sewer air* is atmospheric air with its oxygen diminished and its carbon dioxide increased from 0.04 per cent. to 0.4 per cent., and contaminated with more or less marsh gas, sulphuretted hydrogen, ammonium sulphide, etc.

Sewer gas "is but a mixture of a number of gases, such as carbonic acid, carburetted hydrogen, ammonium and hydrogen sulphide, nitrogen, etc., together with a considerable amount of fetid organic matters, the volatile or semi-volatile products of animal and vegetable decomposition, varying according to the condition of the sewer, the kind of matter received therein, the amount of surplus water, etc." (Egbert's *Hygiene and Sanitation.*)

4. Disease germs must first effect an entrance into the body; they then grow, multiply, and produce toxic substances which are absorbed and distributed throughout the system. Sometimes purely local effects are produced, such as the plugging up of small vessels or causing changes in the cells and tissues. Occasionally, as in anthrax, the disease germs invade the various tissues, and cause disturbances more by their presence and multiplication than by their toxic products.

5. The inspection should include:—the color, reaction, specific gravity, sediment, taste, odor, total quantity of solids and of water; the percentage of cream, fats, lactose, casein, and ash; the presence or absence of preservatives, coloring matter, added solids, and dilution. There should also be thorough investigation as to its source, the cows and their environment, the method employed in caring for, milking, storing and transporting the milk.

BACTERIOLOGY.

1. Bacteria are classified as:—1. Cocci; 2. Bacilli; and 3. Spirilla.

Saprophytes are bacteria that derive their nutriment from dead organic substances; *Parasites* derive their nutriment from **living tissues.**

2. "A *ptomain* is a basic substance, contains nitrogen, is found in putrefaction of proteid matter, and resembles alkaloids in its action, combining with acids to form salts; at one time considered the essential element in bacterial intoxication. *Toxins* are formed by most all pathogenic bacteria, both by analysis and synthesis, in the living organism; do not act like basic bodies, cause symptoms like animal and plant alkaloids (snake venom, abrin, strychnin), and vary with the source, each kind of bacteria having its own specific toxin; their effect on the human organism is immense in minutest dosage, not only constitutionally but also locally to less degree" (Thayer's *Pathology*).

Common sources of ptomain poisoning are:—putrid fish, meat, sausages, cheese, milk, and ice-cream.

5. The presence of *Bacillus coli communis* indicates the possibility of any organic contamination. Therefore the finding of this one bacillus, with or without any pathogenic bacteria is evidence of the contamination of the water. It is difficult to make an accurate estimate of the relative values of a chemical and a bacteriological analysis of water. Both methods are necessary, neither method is infallible, and each may help the other. Water may be pure from a bacteriological standpoint and yet the chemical analysis may show that it should be condemned. The chemical analysis is probably the more valuable to decide as to the quality of a drinking mater.

SURGERY.

1. *Toxins* are poisonous products of bacteria See answer to No. 2 in Bacteriology, above).

Antitoxins are substances elaborated in a living body to counteract the poisonous effects of toxins.

Phagocytes are cells that devour and destroy microorganisms.

5. Both conditions are characterized by sudden onset, pain, tenderness, rise of temperature, and rapid pulse. But *appendicitis* will be accompanied by history of intestinal disorders, rigidity of abdominal muscles, chiefly the right rectus, possibly vomiting and constipation, the right iliac fossa is the site of the pain and tenderness; in *acute ovaritis* there will probably be some menstrual disorder, the ovary will be tender on pressure, and unless there are adhesions it is mobile, the tenderness and pain are nearer the median line, there is generally either salpingitis, endometritis, gonorrhea, or septic infection. In case of doubt an exploratory incision will clear up the difficulty.

7. (1) *Talipes varus*, in which the inner edge of the foot is drawn up, the anterior two-thirds is twisted inwards, and the outer edge rests on the ground.

(2) *Talipes valgus*, in which the outer edge of the foot is drawn upwards, and the inner side of the foot and ankle rest on the ground. This condition is the reverse of *talipes varus*.

(3) *Talipes equinus*, in which the heel is raised and cannot be brought to the ground, and the patient walks on the toes and on the distal ends of the metatarsal bones.

(4) *Talipes calcaneus*, in which the toes are raised and the heel depressed, so that the patient walks on the latter. This condition is the reverse of *talipes equinus*

OBSTETRICS.

5. A baby one week old should be nursed at the mother's breast regularly every two hours between the hours of 5 A.M. and 11 P.M. It should receive about an ounce or an ounce and a half at each nursing.

6. Uterine inertia, pelvic deformity, persistent posterior position of the occiput, eclampsia, face presentations, arrest of the after-coming head in breech cases, hemorrhage.

8. During pregnancy the patient should be put in as good a physical condition as possible; the uterus should not be emptied too rapidly; the patient should not be allowed to become exhausted; after the birth of the child the fundus of the uterus should be grasped and held till the placenta is expelled; after the expulsion of the placenta the patient should receive a dram of the fluid extract of ergot, and an abdominal binder should be applied. The physician should not leave till at least an hour after the conclusion of the labor, and not even then if the patient's pulse is too or over.

GYNECOLOGY.

4. (1) The least suspicion of even the possibility of pregnancy; (2) menstruation; (3) acute endometritis; (4) malignant disease of the uterus or vagina; (5) acute pelvic inflammation.

LEGAL MEDICINE

1. A *medicine* is anything that possesses or is supposed to possess remedial properties.

A *poison* is any substance which, on being in solution in the blood, may produce death or serious bodily harm.

3. Malpractice is a failure on the part of a medical practitioner to use such skill, care and judgment in the treatment of a patient as the law requires; and thereby the patient suffers damage. If due to negligence only, it is *civil* malpractice. But if done deliberately, or wrongfully,

or if gross carelessness or neglect has been shown, or if some illegal operation (such as criminal abortion) be performed, it is *criminal malpractice*.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.	
Alabama*	W. H. Sanders, Montgomery	Montgomery	April 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	April 1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April 9
California	Chas. L. Tisdale, Alameda	San Francisco	April 16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April 2
Connecticut*	Chas. A. Tuttle New Haven	New Haven	March 12
Delaware	J. H. Wilson, Dover	Dover	June 18
Dis. of Col'bia	W. C. Woodward, Washington	Washington	April 11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May 15
Georgia	E. R. Anthony, Griffin	Atlanta	April —
Idaho	J. L. Conant, Jr., Genesee	Boise	April 2
Illinois	J. A. Egan, Springfield	Chicago	April 17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May 28
Iowa	J. F. Kennedy, Des Moines	Des Moines	March 19
Kansas	T. E. Raines, Concordia	Topeka	June 11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April 23
Louisiana	P. A. La Rue, 211 Camp St., New Orleans	New Orleans	May 9
Maine	Wm. J. Maybury, Saco	Portland	March 5
Maryland	J. McP. Scott, Hagerstown	Baltimore	June —
Massachusetts*	E. B. Harvey, State House, Boston	Boston	March 12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	O. E. Linjer, 24 South Fourth Street, Minneapolis	St. Paul	April 2
Mississippi	J. F. Hunter, Jackson	Jackson	May 14
Missouri	J. A. B. Adcock, Warrensburg	St. Louis / Kansas City	April 16
Montana*	Wm. C. Riddell, Helena	Helena	April —
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	May 6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July 9
New Jersey	J. W. Bennett, Long Branch	Trenton	June 18
New Mexico	B. D Black, Las Vegas	Santa Fe	June 3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	May 21
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May —
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April 2
Ohio	Geo. H. Matson, Columbus	Columbus	June 11
Oklahoma*	J. W. Baker, Enid	Guthrie	March 26
Oregon*	B. E. Miller, Portland	Portland	April —
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg,	June —
Rhode Island	G. T Swarts, Providence	Providence	April 4
S. Carolina	W. H. Lester, Columbia	Columbia	June —
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July 10
Tennessee*	T. J Happel, Trenton	Memphis, Nashville, Knoxville,	May —
Texas	T. T. Jackson, San Antonio	Austin	April 30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April 1
Vermont	W Scott Nay, Underhill	Burlington	July 9
Virginia	R. S Martin, Stuart	Lynchburg	June 18
Washington*	C. W. Sharples, Seattle	Seattle	July 2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April 9
Wisconsin	J. V. Stevens, Jefferson	Madison	July 9
Wyoming	S. B. Miller, Laramie	Cheyenne	

*No reciprocity recognized by these States.
†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State

REQUIREMENTS FOR MEDICAL LICENSURE.

In the following table the States requiring of the candidate both a diploma from a recognized college and an examination are printed in roman; those requiring either a diploma or an examination, in italics; those requiring an examination only, in small capitals

STATE	FEE	STATE	FEE
ALABAMA	$10.00	Nebraska	$25.00
Arizona	10.00	Nevada	25.00
ARKANSAS	10 00	New Hampshire	10 00
California	20.00	New Jersey	25.00
Colorado	25.00	*New Mexico*	25 00
Connecticut	15.00	New York	25.00
Delaware	10.00	North Carolina	10 00
District of Columbia	10 00	North Dakota	20.00
Florida	15.00	Ohio	25 00
Georgia	10.00	Oklahoma	5 00
Idaho	25.00	OREGON	10 00
Illinois	10.00	Pennsylvania	25.00
Indiana	25 00	RHODE ISLAND	10 00
Iowa	10.00	South Carolina	10 00
Kansas	15.00	South Dakota	20.00
Kentucky	10.00	TENNESSEE	10 00
Louisiana	10.00	TEXAS	15.00
Maine	10.00	Utah	25 00
Maryland	15.00	Vermont	15.00
MASSACHUSETTS	20.00	Virginia	10.00
Michigan	25.00	Washington	25 00
Minnesota	10.00	WEST VIRGINIA	25 00
MISSISSIPPI	10.00	Wisconsin	10 00
MISSOURI	15.00	Wyoming	25 00
Montana	15.00		

Wisconsin.—The State Board of Medical Examiners is actively enforcing the medical laws of the State. Warrants have been issued for the arrest of several illegal practitioners, some with fake diplomas, and some who indulge in indecent quack advertising.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending February 23, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	360	220
Diphtheria	277	46
Measles	259	10
Scarlet Fever	298	13
Smallpox	1	—
Varicella	76	1
Typhoid Fever	45	12
Whooping Cough	66	5
Cerebrospinal Meningitis	13	12
Malarial Fever	. .	. .
Totals	1395	319

Verminous Appendicitis.—Ragaine believes that the presence of worms in the intestine may become the immediate cause of appendicitis. These parasites provoke an ulceration of the mucosa of the cecum, thus opening a portal of entry for infection. Search should be made in a case of appendicitis for the possible presence of intestinal worms. The physician could often discover the presence of ascaris, trichocephalus, or oxyuris. This would be a most valuable indication. Appendicitis of verminous origin may sometimes be cured by the expulsion of parasites alone.—*La Presse Médicale.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 22, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS
Florida, Lakeland	Jan. 26–Feb 2	6	
"	Feb. 9–16	3	.
Georgia, Augusta	Feb. 5–12	3	.
Illinois, Chicago	Feb. 9–16	1	.
Indiana, Indianapolis	Feb. 3–10	4	..
Maryland, Baltimore	Feb. 9–16	1	..
Minnesota, General	Dec. 1–Jan. 28	277	1
Missouri, St. Louis	Feb. 9–16	1	.
Montana, Helena	Jan. 1–31	1	..
North Carolina, Charlotte	Feb. 9–16	1	.
Utah, Ogden	Jan. 1–31	3	..
Washington, Spokane	Feb. 2–9	13	..
Ohio, Cincinnati	Feb. 8–15	2	.
Utah, Ogden	Jan. 1–31	3	.
Washington, Spokane	Feb. 2–9	13	

SMALLPOX—FOREIGN.

Argentina, Buenos Aires	Dec. 29–Jan. 5	1	..
Brazil, Bahia	Dec. 29–Jan. 12	6	..
Canada, Toronto	Jan. 9–26	2	.
China, Shanghai	Jan. 6–13	1	..
France, Paris	Jan. 19–26	10	.
Great Britain, Cardiff	Jan. 19–Feb. 2	2	1
Hull	Jan. 19–26	.	1
Liverpool	Jan. 19–Feb. 2	2	..
Southampton	Jan. 26–Feb. 2	1	..
India, Calcutta	Dec. 29–Jan. 5	..	12(epid'c)
Rangoon	Dec. 29–Jan. 5	..	1
Mexico, Vera Cruz	Jan. 26–Feb. 2	1	1
Netherlands, Rotterdam	Jan. 26–Feb. 2	5	1
Russia, Moscow	Jan. 5–26	11	8
Odessa	Jan. 12–19	13	5
Turkey, Constantinople	Jan. 20–27	..	1

YELLOW FEVER.

Mexico, Tuxpam	Jan. 22–29	1	1

CHOLERA—INSULAR.

Philippine Islands, Provinces	Dec. 15–22	10	10
"	Dec. 22–29	20	11
"	Dec. 27–Jan. 5	21	12

CHOLERA—FOREIGN.

India, Bombay	Jan. 8–15	..	3
Calcutta	Dec. 29–Jan. 5	..	76
Cochin	Dec. 28	..	1
Rangoon	Dec. 29–Jan. 5	..	18

PLAGUE.

Egypt, Ismailia	Jan. 25–29	1	1
Assiout Province	Jan. 24–29	1	.
India, General	Dec. 29–Jan. 5	1291	10363
Bombay	Jan. 8–15	..	33
Calcutta	Dec. 29–Jan. 5	.	19
Rangoon	Dec. 29–Jan. 5	..	13
Japan, General	Jan. 1–19	9	..
Mauritius	Dec. 13–Jan. 3	55	43
Siam, Bankok	Nov. 21	..	1

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Original Articles.

THE SALT-FREE DIET IN CHRONIC PARENCHYMATOUS NEPHRITIS.*

By GEORGE L. PEABODY, M.D.,

NEW YORK

The benefit to be derived from the administration of food containing only a minimum of sodium chloride in cases of anasarca due to parenchymatous nephritis seems to have been independently discovered by several observers. My purpose in drawing attention to it to-night is to ask its trial in a condition which is always distressing and which, by other means, is often rebellious to treatment.

The literature on the subject, which dates only a few years back, is not voluminous, but almost all who have published accounts of systematic trial of the method have been astonished at the good results which have attended their efforts in properly selected cases. In this country attention has been called to it by A. O. J. Kelly and Charles A. Fife of Philadelphia, and Joseph L. Miller of Chicago.[1] Miller gives references to the bibliography. Since the date of these papers (1905) not very much has been written upon it.

In opposition to most writers, Ferramini[2] considers that salt is often beneficial in "kidney diseases," and that its withdrawal is nonsense, although he admits that its administration is often followed by a temporary increase in the albumin and in the kidney elements in the urine.

Rumpf[3] undertook to throw light on the etiological relation of salt-retention in nephritis by ascertaining by chemical analysis whether in various organs salt is present in undue amount after death; and also whether pericardial, pleural, and peritoneal fluids contained an undue amount of salt in the cases of kidney disease that he examined. He did not confine his investigations to cases of parenchymatous nephritis, however, but used the material from all sorts of cases of nephritis.

He found (*a*) that in adults in many cases the salt content of the kidneys exceeded that of the blood and other organs, (*b*) in many cases the salt content of the blood and tissues was increased in amount beyond the normal; (*c*) the pericardial, pleural, and peritoneal fluids showed no uniformity in their salt content, and (*d*) the peritoneal fluid in cases other than nephritis often showed a high salt content.

Widal[4] was one of the earliest observers to advocate a salt-free diet in this form of nephritis, and in a recent article read before the seventh French congress for medicine, he repeats his views and gives his later experience. He considers the object of the treatment to be twofold: to free the system as much as possible from salt, and therefore from water; and when this has been accomplished to bring about a balance between the salt in the body and the permeability of the kidneys for salt. He believes that the patient's food should contain only the natural amount of salt, *i.e.* that none should be added artificially by either cook or patient. In this way the patient will take only about one and a half grams a day.

My experience accords with his, that in many cases, very soon after the beginning of the treatment, edema, and therefore body weight, will diminish rapidly. This occurs more promptly and more completely if the patient remain absolutely at rest in bed. In some cases edema of the lower extremities does not entirely disappear, and in these diuretics must be employed. In general, he says, the effect is much more marked in parenchymatous than in interstitial nephritis. I have had scarcely any success with well marked interstitial cases.

In some cases of parenchymatous nephritis, after the edema had disappeared, he allowed patients to take a little salt, even as much as five, eight, or ten grams a day, if urinary analysis showed that it was all excreted. In my experience, a return to an ordinary diet is likely to be followed by a recurrence of edema.

It seems to be doubtful if diaphoretics are of much assistance, for in removing water they remove but little salt. Saline purgatives remove salt as well as water, but they cannot be used with sufficient frequency to be of much assistance. Widal thinks that some diuretics are of material help in removing the salt, especially the cardiac diuretics, inasmuch as the arterial tension is often low. Widal and Javal found squill of little use. Potassium acetate was better, but very uncertain. Digitalis alone was often of no value, and of course was contraindicated if the tension were high. When this was low theobromin alone or associated with digitalis was often of great assistance.

Boyd[5] in Edinburgh noticed that a patient with general anascarca conceived a violent dislike of foods containing salt, and upon following his inclination in this matter he was surprised to find a marked diminution in his edema. Boyd's attention was attracted to the subject in the literature, and he subjected a patient suffering from diffuse nephritis with anasarca to the influence of salt-free diet. Besides the anasarca, his patient had serious effusions in both pleural cavities and the peritoneum. All his food was prepared without salt, and his fluids were restricted. In two days improvement was noted. His urine became doubled in amount and he eliminated large quantities of chlorides. The diuresis continued until all edema had disappeared. In this case a patient who had been edematous for years lost all edema in seventeen days.

Miller[1] discusses the rationale of the condition and then records his own experience. He notes that Widal and Javal[6] have "called attention to the inability of many nephritics to eliminate sodium chlorid in a normal manner. The salt retained in the tissues required a certain amount of water to main-

*Read at a meeting of the Practitioners' Society of New York, on Friday, February 1, 1907.

tain it in the proper molecular concentration, thus leading to edema, and he suggests this as the probable explanation of dropsy in nephritis. This chlorid retention was found chiefly in acute and chronic parenchymatous nephritis, and especially in patients who were edematous. The retention was not found in the interstitial form, and we know that edema, when it develops in these cases, is usually of cardiac origin. They, furthermore, decided that the impermeability of the kidney to urea and salts did not necessarily go hand in hand, as in the terminal period of Bright's disease there may be marked retention of chlorids, but none of urea, phosphates, or sulphates. They report a case of uremia with daily elimination of 28 grams of urea, but only 0.39 gram of sodium chlorid. For this reason they consider the chlorid elimination as a better index of the functioning power of the kidney than the excretion of urea, and that the unfavorable prognosis of a case is associated with reduced chlorid elimination."

To quote from another part of Miller's paper: "Only small amounts of sodium chloride are essential for the animal economy. According to Bunge, a person upon a mixed diet requires daily 1 or 2 grams; most people, however, consume 10 or 20 grams. The excess of chlorid is eliminated chiefly through the kidneys."

The feces and skin eliminate relatively very small amounts. The daily elimination of sodium chloride varies widely under unchanged circumstances in the same individual without apparent cause.

If salt is increased in amount in the food of patients suffering from chronic parenchymatous nephritis, edema develops or increases, albumin in the urine increases, headache, nausea, and stupor may develop. "Widal and Javal were able to make the edema appear and disappear at will by increasing or withdrawing the chlorides."[1]

Numerous investigators have confirmed and amplified these statements, and it has been shown that sodium chloride, however administered, whether in food or subcutaneously, or by enema, is capable very clearly of inducing or aggravating many of the symptoms of these patients.

Patients can become more edematous without any increase in the intake of fluids or any diminution in the elimination of water by other channels, particularly by the skin.

Miller's conclusions are as follows: "In patients with moderately severe nephritis associated with edema, the ingestion of large amounts of sodium chlorid is followed by chloride retention. The patient gains in weight, the edema becomes more marked, the albuminuria increases, and symptoms may develop resembling uremia.

"In patients with very severe nephritis, and especially those with uremia, chlorid retention is very marked, as scarcely any of the extra chlorids administered is eliminated.

"Individuals with apparently healthy kidneys, following the ingestion of sodium chlorid, there is a chloride retention equal to that of mild nephritis. The individual gains in weight, but there is no visible edema, no albuminuria, and no uremic symptoms."

A year later than the paper by Widal and Javal[7] quoted by Miller, they showed that in a case of small, contracted kidney albuminuria could be increased or diminished uniformly by increasing or diminishing the amount of sodium chloride in the food. They concluded that the albumin in the urine was entirely uninfluenced by the albumin in the food, as has long been believed.

It has been suggested[8] that an explanation of the belief of many clinicians that in cases of kidney disease white meats are better borne than dark meats, is to be found in the habit of using more salt in the preparation of the dark meats than in the light ones.

Interesting in connection with the general subject of this paper is a case of persistent edema in an otherwise healthy person who had acquired the habit of eating salt inordinately. This case is reported in the *Practitioner* by S. H. Bryant.[9] The patient was a physician, forty years of age, who sought medical advice on account of persistent edema of the feet and legs, fearing that he had kidney or heart disease. He had never been ill before, but had noticed trifling varicose veins which had never caused any trouble. Shortly before he sought medical advice he noticed, in addition to his edema, a feeling of weight in his legs and a sense of undue fatigue on slight exertion. Careful examination showed his organs to be sound, especially his heart and kidneys. Inquiry into his habits showed an inordinate fondness for salt, which he added even to salt meat and salt fish, and he confessed to the habit of completely emptying the saltcellar twice a day at his two principal meals. His urine contained nearly three times as much sodium chloride as normal, and had a specific gravity of 1.028. It cost him much effort to abandon his salt, but in two weeks the edema had perceptibly diminished, and in three weeks it had disappeared. He was not weighed, but he felt that he had lost weight as he lost edema.

My colleagues in the New York Hospital, Drs. S. W. Lambert and L. A. Conner, and myself have tried the effect of the salt-free diet as a means of removing fluid in cases of anasarka of various kinds, and I am much indebted to their efforts for experience and for clinical material in this subject, and we have all been greatly aided by the careful observation of the cases, as well as by the full and accurate notes made by a very efficient resident staff, and especially by the house physicians, Drs. Edward Cussler and Frederick H. Bartlett. In anasarca due to heart causes or to combined failure of heart power and interstitial nephritis, I have accomplished very little with it. Although the statement has been made that it causes a lowering of blood pressure in high tension with arteriosclerosis,[10] such has not been my experience. The results of carefully conducted observations in cases of this class have been almost uniformly disappointing in my wards. The diet is not unpalatable, and can be made sufficiently varied to be well borne for weeks if necessary, though ordinarily a few days will suffice to remove the edema, or greatly to diminish it.

Unsalted bread is very palatable, especially if made with milk instead of water. Made in this way, it does not become hard or dry, if not too long kept. The bread that I show you this evening was made with water and is several days old, and, except on the surface, is not dry or hard.

It will be observed that the expression "salt-free" is not literally correct. Most of the articles that enter into the diet contain the small amount of salt with which nature has supplied them. This is merely intended to convey the idea that no salt is artificially added to the food. We have usually made some attempt at the same time to limit the quantity of fluids ingested, but it is not necessary to carry this part of the plan to the extent of making the patient uncomfortable. The daily bill of fare admits of great variety. We have generally found the following sufficient:

Breakfast.—Coffee or tea, eggs, cereals, cream, fresh butter, fruits, bread made without salt.

10 A.M.—A glass of milk.

Dinner.—Chicken, fish, potato variously prepared, bread made without salt, ice cream, jelly, fresh butter, cocoa ℥viii.

3 P.M.—A glass of milk or water.

Supper.—Eggs, chicken, bread without salt, jelly, custard, cream, fresh butter, tea ℥viii.

8 P.M.—A glass of milk or water.

Almost any kind of meat or vegetable can be given to which salt is not added. I wish again to emphasize the fact that it is especially in cases of general anasarca from chronic parenchymatous nephritis, with failing heart power, that it is to be highly recommended. In many of these cases its effect is perhaps enhanced by the simultaneous administration of heart tonics. Of these I have chiefly used digitalis and theobromin. Of these two theobromin, in the form of diuretin, is perhaps to be preferred, but careful observation in my cases justifies the belief that they really did not contribute to the relief of the patients, for they raised blood pressure in none of them. In some cases its operation is facilitated and aided by stimulating elimination by the skin by hot packs given every other day, although, as I have already said, but little chloride is thus disposed of. In some cases we have called to our aid irrigation of the colon by hot water, to which sodium bicarbonate, half an ounce to the pint, has been added, instead of the more usual chloride, which is omitted for obvious reasons. It is important to raise the density of the water used for colon irrigation by some such indifferent agent, because water alone is irritating to the mucous membrane. Catharsis helps in some cases, for which purpose the compound jalap powder has been much used, but I am convinced that the most important agent is the negative one of which I am writing; and in some cases, without other aid, it will cause a rapid disappearance of edema.

After complete removal of the edema I am now administering progressively increasing daily quantities of salt to these patients, carefully watching for any recurrence of this symptom, the endeavor being to ascertain for each patient what his salt equilibrium may be, but I am not yet prepared to report results of these observations.

By far the best way of ascertaining the exact amount of water lost by such a patient is by weighing him. Measurement of the circumference of his abdomen and of his extremities is of little relative value. Unless some other illness supervenes, he loses no weight except water, for he is very well nourished by the food that he takes, so that by weighing him we have a fairly exact means of ascertaining the result that we are bringing about.

The change in his appearance is usually very striking. In a few days a patient whose eyes were almost closed by facial edema often shows no puffiness of the face at all.

It is of interest that the disappearance of edema is not always accompanied by any very obvious increase in the amount of urine passed, though this sometimes also happens. He must lose water in other ways, and he often loses both salt and water by the bowel.

Case I.—William C, age 24, a carpenter, entered the hospital August 3, 1906. He had edema of the legs and scrotum, and penis, besides a large amount of fluid in his left chest. His urine was of high specific gravity, and contained a large amount of albumin and hyaline, and granular casts. His blood pressure was low and continued so, from 100 to 120 mm., as a rule.

Under cardiac stimulation by digitalis, or diuretin, colon irrigation by salt solution, to which potassium iodide and purgation were added, his edema fluctuated in amount, and finally returned, and fluid accumulated in both sides of his chest and his abdomen, necessitating frequent tapping of the chest. On one occasion two quarts of fluid were withdrawn from his abdomen.

Up to the 14th of September, 8,850 c.c. of fluid were mechanically withdrawn from his serous cavities, and dyspnea had become urgent. He was then put upon the salt-free diet, and his fluids were restricted to between 40 and 50 ounces a day. His weight at this time was 160 pounds, in spite of the fact that within the previous seven days 3,150 c.c. of serum had been withdrawn from his cavities, or a little over six pounds in weight.

He had been six weeks under the usual treatment of the condition without any but transitory improvement in his symptoms. During these six weeks 16 pounds of fluid in all were mechanically removed from his cavities. After the salt-free diet was commenced his chest required only two tappings, by which 4 pounds of fluid were withdrawn; and then, coinciding with the rapid disappearance of edema, there was no recurrence of fluid in any of his cavities. Under this diet he lost in twenty days 32 pounds in weight, which I believe it fair to consider 32 pounds of fluid; he felt well, looked like a different man, was up and about all day, and left the hospital on the 8th of October without any appearance of edema, and weighing 128 pounds as compared with 160 pounds three weeks previously.

In him blood pressure seemed to be uninfluenced by any treatment to which he was subjected, and this accords with the fact that he was only little improved by cardiac stimulants and the other therapeutic efforts until the salt-free diet was tried. The results following upon this fact would seem to justify the assumption that it was the chief cause of his recovery.

Case II.—Was an Italian, Antonio G., a gilder by occupation, 40 years of age. He entered the hospital on the 27th of July with fluid in both chests and the abdominal cavity, and edema, which was especially marked in the abdominal wall, genitals and lower extremities.

His urine, 28 ounces on admission, always contained albumin. Before the salt-free diet was commenced this reached the amount of .6 per cent.; hyaline and granular casts were abundant, and its specific gravity fluctuated between 1,008 and 1,025. His blood pressure was not uniform, but fluctuated, without obvious cause, between limits as wide as 140 and 210 mm., and when high it failed to respond to the dilators. Under symptomatic treatment which was intelligently tried for seven weeks, the edema was at times diminished in amount, but it always returned to the original extent when he was allowed to get up. Headache was very troublesome throughout this period.

The salt-free diet with restriction of fluids was tried from the 15th of September to the 8th of October, when he left the hospital greatly improved. In these three weeks he lost 22 pounds in weight, his headache and dyspnea disappeared, all the fluid left his serous cavities without tapping, and the edema vanished. In this case the urine became and remained higher in amount than it had been under symptomatic treatment, its fluctuation being between 35 and 71 ounces.

The hot pack was used throughout his treatment, and in it he perspired freely; but, as in the last case, no complete alleviation of symptoms took place until the salt was withdrawn from his food.

Case III.—Another, Antonio G., a Spaniard, a

cook by occupation, 39 years of age, was admitted on November 30, 1906. He had been twice in the hospital before, and we knew him well. His urine contained .3 per cent. albumin and hyaline and granular casts, and had a specific gravity of 1,018, and he was passing 57 ounces. The last time he was in the hospital he was discharged improved on November 14, 1906, with the diagnosis chronic nephritis, chronic myocarditis, and dilatation of the heart, and cirrhosis of the liver.

His distress was great on his readmission, and was sufficiently accounted for by the presence of fluid in both pleural cavities and abdomen, as well as by edema in his arms, abdominal wall, genitals, and lower extremities. His blood pressure was 126 mm. He was at once put upon a salt-free diet, together with a mixture containing in each dose two minims of the fluid extract of digitalis, twenty of the fluid extract of convallaria, and five grains of potassium iodide. At first he was too ill to be able to stand on the scales for the purpose of being weighed, but after three days of treatment he weighed 147 pounds. In four days the improvement in his general appearance was very obvious, and in ten days his edema was practically all gone, and he had lost fifteen pounds in weight. He was then up and about the ward without any return of it for five days more, when he felt so well he went to his work.

His blood pressure was not raised by the treatment, and was usually below the level recorded on his admission, fluctuating generally between 90 and 110 mm. His urine increased from 57 ounces to 72 ounces a day as the edema left him.

He told us that his weight of 132 pounds, which he reached on the tenth day of treatment, was his normal weight.

Case IV.—Andrew K., a laborer, a native of Austria, 20 years of age, was admitted on October 5, and remained until December 10, 1906.

He was suffering from chronic parenchymatous nephritis with anasarka and double hydrothorax and ascites. On admission his entire body from his eyes down was edematous, his genitals being especially so. His urine was of low gravity and contained .9 per cent. albumin and hyaline, granular and epithelial casts, some blood cells, and some pus. His blood pressure was 130 mm. on admission, and it usually fluctuated between that and 160 during his treatment, except during the occurrence of an attack of colitis, when it fell to 100, and remained between that and 110 for twelve days.

His case is of unusual interest, because while under treatment, and while showing marked improvement in the extent of anasarka, he developed an acute and severe colitis. Before this occurred he had lost 51 pounds of fluid, his weight having fallen from 215 pounds to 164 pounds in about six weeks. During this time the improvement in all of his worst symptoms was very marked, in spite of the fact that he developed incidentally acute pleurisy and pericarditis. During the colitis his diet was necessarily changed, and salt was not withheld. At first, after this change, he continued to lose weight—what we might call "good" weight as distinguished from fluid—and his nutrition suffered severely. He lost thus sixteen pounds which he could ill afford. During his convalescence from the colitis on an invalid diet from which salt was not excluded, he gained twenty-three and a half pounds, and again showed evidences of considerable anasarka. When he had completely recovered from his colitis, the salt-free diet was resumed, and he sustained a loss of weight in two weeks of twelve pounds. His total net reduction in weight was thus fifty-five pounds. This was not all due to his diet, for the reason that his chests required frequent tapping, and thus large amounts of fluid were withdrawn; but until the influence of the diet was felt the fluid thus removed reaccumulated rapidly. Besides this, it must be said that, in this case as in most of the others, reliance was not placed on the diet as the sole means of treatment, for hot packs, colon irrigation with hot sodium bicarbonate solution, and purging with compound jalap powder were all resorted to. As the result of it all, his edema disappeared, and the fluid ceased to recur in his chests, and he held the ground that he had gained, although allowed to be up and dressed and about the ward. On his discharge he declared that he felt better than he had for months. The amount of his urine fluctuated very widely, between 33 ounces on admission and 152 ounces after his convalescence from colitis.

Case V.—One of our most striking cases was Joe L., a boy nine years of age, whose kidneys had been decapsulated four times in the preceding two years to aid in the removal of general anasarka which was always associated with almost complete suppression of urine. On each of these occasions the result had been satisfactory, though it was in part due to other means besides the operation, such as hot packs and cardiac stimulation.

His original kidney trouble was a parenchymatous lesion following scarlatina. On this latest occasion, it was concluded to try, instead of surgery, the salt-free diet with colon irrigation and hot packs, as well as cardiac stimulation. It was found by trial that he did much better on this combination than he did when treatment was confined to the diet alone. In a month he lost twelve pounds, which was about 20 per cent. of his total weight. His abdomen contained a large amount of water when treatment was begun. This entirely disappeared without tapping and its circumference diminished by five inches.

Inasmuch as he was a growing boy of nine years, and inasmuch as he visibly increased in height during the two and a half months that he was under observation, his total loss of twelve pounds, or 20 per cent. of his body weight, is probably really much larger than it would appear to be from the figures.

From a pitiably quiet, somnolent, dull boy, who could hardly open his eyes at all on account of facial edema, he became as bright and talkative, and active as any child in the ward. His urine increased from 5, 10, and 15 ounces just after his admission to 35, 40, and 50 ounces as his treatment progressed. On former occasions decapsulation was always finally resorted to after failure to relieve him by all the other means to which resort was had on this occasion, except the diet, and it seems fair to assume, therefore, that on this occasion the diet replaced the surgical procedure which had become usual with him. In other children the effect has been more marked and more prompt.

Case VI.—John R., age 10, was admitted on the 4th of January, 1907. Five months previously, without known exposure to any of the exanthemata, he began to grow weak, pale, and short of breath. One month before admission his ankles began to swell, and soon thereafter his face, eyelids, all of his extremities, the skin of chest and abdomen, as well as of his genitals, became much swollen. His parents brought him to the hospital on account of the general anasarca and dyspnea. Besides fluid in the subcutaneous tissues, it was found on examination that there was fluid also in his abdomen and his right chest. His blood pressure was 100 mm., and it did not vary materially from that level. His urine contained a considerable quantity of albumin, and hya-

line and granular casts. He passed during the first two days 9 and 16 ounces, respectively. His weight on admission was 65½ pounds. He was put upon a salt-free diet, colon irrigation, and, every other day, hot packs. Diuretin, digitalis, and strychnine were given at different times, but it is very doubtful if they were of any assistance, for the blood pressure did not vary appreciably while they were taken.

A few days after his admission 600 c.c. of fluid were withdrawn from right chest by aspiration.

The fluid did not recur in his chest and disappeared from his abdomen, and in less than two weeks his anasarca had completely disappeared, his color had improved, he felt bright and well, and was allowed to use a wheel chair, and then to walk about. His urine increased in amount from 9 to 20, 30, 40, and as a maximum 51 ounces.

His kidney condition, of course, is not cured, but his edema has entirely disappeared, and though somewhat pale he looks like a well boy.

CASE VII.—Lucy P., age 5 years, was admitted on January 9, 1907. She was perfectly well until six months ago. Her father is a telephone operator in a hospital for the exanthemata, and, though she is not known to have had any illness since her babyhood, one must suspect the possibility of her having contracted one of the exanthemata without its having been recognized.

Six months before her admission she began to complain of abdominal pains, and then soon after, puffiness of the eyes was noticed, and later her ankles and legs, and abdomen had become swollen. Of late she had been passing only a small amount of urine.

On admission she presented all of the evidences of anasarca noted above. Her eyes were almost closed; her abdomen contained a small amount of fluid, but not enough to give a fluid wave on percussion. Her urine could not be measured, as it was in part passed involuntarily, but it was clearly small in quantity. It contained a considerable quantity of albumin, and hyaline and granular casts. Blood pressure was 105 mm.; weight was 36 pounds.

Treatment, which was begun at once, consisted in salt-free diet, diuretin, hot pack every second day, colon irrigation, and small doses of compound jalap powder.

Improvement began on the second day, and by the eighth day the edema had entirely gone, and her general condition was correspondingly improved. She was allowed to get up and play about the ward with the other children, and left the hospital on the fourteenth day, looking apparently well, although her kidney lesion of course persisted.

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Appendicostomy.—Drawing the appendix out through a laparotomy incision and fixing it in this position after cutting off its tip has already been found of great service for the purpose of performing irrigation of the colon in cases of obstinate colitis, but Gil suggests that by this means intestinal distention of a serious grade may be combated, and also that rectal artificial feeding can be more effectively carried on through the appendix than through the rectum.—*Revista de Medicina y Cirujia de Madrid.*

INFLUENZA; MASTOID ABSCESS; LEPTOMENINGITIS; NINE-DAY UNCONSCIOUSNESS; THREE OPERATIONS; DEATH; AUTOPSY.*

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THE points of especial interest in the case we are about to report are the following: Attack of influenza, followed by mastoid abscess; suppuration and necrosis of the ethmoid; relief of symptoms, except headache, following operation; sudden development of violent pain in the head; unconsciousness for nine days; restlessness; high remittent temperature; no palsies or other localizing symptoms; purulent leptomeningitis; pus in the cerebral ventricles; death; autopsy.

L. J., male, thirty-nine years; foreman in a clothing manufactory, first consulted Dr. Mills May 21, 1906. For several days he had had chills, sore throat, headache, backache, and legache, but no cough, nausea, or perspiration, and no appetite; bowels open freely; temperature, 102°; pulse, 102; diagnosis, influenza. The facial expression was that of a very sick man; he was ordered to bed, and treatment prescribed. The following day he was somewhat improved and reported having had a good night, but was complaining of some aching in the right ear. The treatment was continued and hot water bag applied to the ear. The following day he complained of considerable pain on the top of the head, and excessive discharge from the right ear, which, in spite of local and constitutional treatment, continued for ten days, with a temperature and pulse each averaging about 100. Suddenly, on June 3, 1906, ptosis of the right eyelid developed, with increased headache, and Dr. Ward was called in consultation. The conditions which led to the decision for prompt mastoid operation were the ptosis of the right eyelid, the swelling of the right cheek, excessive and increased pain, radiating over the right half of the head, and persistence and increase of the enormous discharge. There was a large perforation in the posterior inferior quadrant of the tympanic membrane, but no bulging. The internal posterior wall of the canal, which forms the anterior wall of the mastoid antrum, was red and tender, but no sagging of any part of the canal. Slight edema over the mastoid and slight tenderness on deep pressure. Throughout the disease, and increased that day, there was a continued soreness over all parts of the cheek, gums, and tongue of a neuralgic character. On examination of the mouth there was not sufficient evidence to account for the pain, and as stimulation of the tympanic nerve in the tympanum caused a prickling feeling in the tip of the tongue, we attributed the soreness to the pus in the tympanum. Uranalysis made just before the operation was negative, except for an excessive amount of uric acid.

First Operation.—June 4, 1906, Dr. Ward, assisted by Dr. Carle Lee Felt, operated on the mastoid. The cortex was exceedingly thick and dense; cells small; septi resistant, the chisel was required

*Reported at a meeting of the Philadelphia County Medical Society.

to break them down, pus was found near the surface at the middle and tip; it was thick and yellow and in drops, showing recent formation. There were dark spots in various parts of the bone. No necrosis and no dead or bare bone in the antrum. The whole cancellous tissue, including the tip, was removed. The usual dressing was applied. At the close of the operation the temperature was 98.8°, pulse 124, respirations 26. At midnight the temperature was 102.6°, pulse 132, respirations 24. After a restless night, at 9 A.M. the temperature was 98.2°, pulse 112, respirations 22; June 6, the lowest temperature was 99.6°, pulse 110, respirations 24; the highest temperature was 103.6°, pulse 108, respirations 22, where it stayed with slight remissions until June 7, at 3 P.M., when the wound was dressed for the first time; in splendid condition. June 8, at 12 M., the temperature was normal, pulse 98, respirations 20; the highest for the day at 3 P.M., temperature, 102.4°; pulse, 96; respirations, 18. The wound was dressed, followed by a drop to normal on June 9, at 7 A.M. At 3 P.M. the temperature was 99.4°, pulse 110, respirations 20. June 13, at 7 A.M., the temperature was normal; at 1 P.M., 99 2-5°; pulse, 94; respirations, 18. The patient had been out of bed a part of each day after June 11; had gone to the toilet; was sleeping through the entire night and feeling comfortable. The conditions were considered favorable and the services of the nurse were dispensed with. From June 13 to 16 no temperature chart was kept; when the temperature was taken at irregular intervals, it was normal or only a fraction above. The appetite was very much improved; bowels, freely open; nights, fairly restful, and the patient was decidedly hopeful.

After increasing the amount of time out of bed each day, on June 16, at Dr. Mills' visit, the patient inquired as to how soon he could go downstairs and out of doors, and was making plans to take his family out of the city. Dr. Mills told him that he could do so the next day, if it met with the approval of Dr. Ward. In spite of the patient's good record, he wore a very anxious expression, and on close questioning admitted that he was not feeling as well as he would have one believe. At Dr. Ward's visit, four hours afterward, the patient having had a short sleep, felt much refreshed, seemed rather cheerful, and, without referring to the conversation with Dr. Mills about going out, asked when he could do so, and was told, if he felt as well the next day, he could go downstairs; but if the exertion caused much fatigue, to at once return and lie down. The wound was dressed; it was in excellent condition; no more discharge than could be accounted for by the forming granulations.

During the entire illness and, in spite of local and constitutional treatment, at no time was he apparently free from pain on the top of the head, worse during the higher temperatures and most severe during coughing or sneezing.

Sunday, June 17, at about 5 A.M., after sleeping soundly all night, the patient was awakened suddenly by a severe and excruciating pain in the head, which became unbearable. At 7 o'clock a messenger was sent to Dr. Mills' office, stating that the patient was almost insane from pain, and demanding some relief. Six tablets, each containing 1-20 of a grain of morphine, were sent, with instructions to give two every half hour until relieved. Before the messenger returned the wife had given the patient 1-4 of a grain of morphine which she found left from a previous prescription. Four of the tablets sent were given, making total of 9-20 of a grain of morphine administered by the mouth in the course of about an hour, following which the patient went into a sound sleep, from which he never awoke. Four hours later, Dr. Mills called and found the patient sleeping soundly; pupils evenly and moderately dilated; pulse rapid, regular, and strong; respirations regular and deep; skin moist; facial expression that of a man sleeping normally. The family were advised to leave the patient undisturbed until later in the day. The inability of the family to rouse the patient, together with the fact that, the day being Sunday, many relatives and friends were at the house, and, each expressing a different opinion, added to the anxiety caused by the long sleep; they became alarmed, and at 2 P.M. sent or Dr. Mills. As he could not be immediately gotten, Dr. H. N. Abbott, a nearby physician, was hurriedly sent for, and at that time, and at 6 P.M., when he was called again, the following was his opinion: "The condition of the patient was practically the same at both visits; that is, one of profound stupor, and when aroused he would at once relapse into his former condition. The pupils were normal; he was slightly feverish; respirations, somewhat hurried; circulation in the extremities not very good. Shortly before my first visit the patient experienced a severe vomiting spell, without regaining consciousness. Excluding the kidneys and considering the marked drowsiness, my opinion was that the stupor was due to the effect of the morphine, and, acting on that assumption, I recommended the administration, by mouth and per enema, of black coffee."

Dr. Mills called about 6 P.M., and finding Dr. Abbott there, a conference was held. It was believed that the sleep was the result of the morphine, and the black coffee was ordered continued. Dr. Mills returned later in the evening and found the patient still sleeping soundly. There was no indication for treatment other than that employed, which was continued. At about 11 P.M., a consultation over the telephone was held between Dr. Mills and Dr. Ward, the latter being out of the city and not accessible during the day; the treatment outlined was approved.

Monday, June 18. The patient had been in almost constant motion since midnight, requiring the closest watching by two attendants to keep him from rolling out of bed, and, on this account, a nurse was hurriedly gotten. There being no localizing symptoms, or other indications for intervention, we decided to continue the expectant treatment. At 12 M. the temperature was 102°, pulse 84, respirations 36. Especial attention is called to the fact that this and all subsequent temperatures were taken in the axilla. At 3 P.M. and at 9 P.M. the temperature was 103°, pulse 108, respirations 36. At midnight, temperature 102°, pulse 66, respirations 24. On dressing the wound granulations were found to be healthy. No swelling along the line of the internal jugulars, though both sides were equally tender; the breath was fetid; no discharge from the nostrils. Beginning, Sunday, June 17, and continuing until death, there was incontinence of urine and feces. The pupils varied frequently, but equally; sometimes dilated, at others contracted, with the greater tendency to dilatation; at all times acting together. There was no nystagmus at any time during the progress of the disease.

Tuesday, June 19, at 6 A.M., temperature 99.5°, pulse 74, respirations 20. At 1 P.M. a consultation was held between Drs. Mills, Ward, and Felt; temperature, 102°; pulse, 88; respirations, 26. The

patient resisted the examination, pulled away, and tried to get out of bed on the opposite side. He was permitted to place his feet on the floor and sit on the side of the bed, and was held in that position. Eyes, nose, and throat were examined. On attempting to use the ophthalmoscope, the light caused severe pain, the lids had to be held forcibly open, the eyes were in constant motion. It was impossible to get a view of the nerve head; the media were clear; vessels in various parts of the retina could be distinctly seen; no abnormal conditions detected. The breath was very fetid. In the right nostril the middle turbinal was swollen and edematous; pressure produced pain as compared to examination of the left nostril, which was normal. Examination indicated suppuration of the right ethmoid, and possibly involving the sphenoid sinus. When the examination was completed the patient stood up, which we permitted him to do in order to determine whether there was any incoordination or vertigo; he looked around in a vague, staring manner, as if endeavoring to locate the bed, turned, drew the covers back, crawled into bed, and lay down in the proper position; all without any apparent consciousness. There was not the least incoordination, nor did he seem to experience the slightest sensation of vertigo, although assuming the erect position comparatively suddenly and unassisted. There was no evidence of any twitchings, palsies, awkwardness in movement, or tenderness in any part of the body, although the sensory reflexes seemed exaggerated; no swelling or cord-like sensations along the line of the internal jugulars. The patient held his hand on the top of his head, as if in pain; but there was no evidence of its being increased by exertion or by pressure or tapping. It was our opinion that there were no indications for opening the skull; but, on the contrary, such a course would have been unwarranted.

Second Operation.—At 4 P.M. the patient was again etherized, and Dr. Ward, assisted by Dr. Felt, removed the anterior end of the right turbinal and opened the ethmoid. Pus and necrosed bone were found in the posterior ethmoid cells. The dead bone was removed and the curette forced back into the sphenoid. The condition of the sphenoid, as well as could be determined by the sense of touch transmitted through the probe and curette, was that the membrane was thickened and swollen; no necrosed or bare bone. A strip of iodoform gauze was inserted to facilitate drainage, and not to prevent hemorrhage and thus dam back the pus, free hemorrhage being rather desired to wash out any drops of pus that might have been left after the curettage. The mastoid wound was dressed and was in excellent condition. At 6 P.M., at the close of the operation, temperature 102.4°, pulse 137, respirations, 35. The temperature rose, and at 9 P.M. it was 104.6°, pulse 120, respirations 36. Upon coming out of the anesthetic, the restlessness again became very marked, keeping the nurse constantly going from one side of the bed to the other, not to keep the patient from getting out of bed, but to prevent him from rolling out.

June 20, at 7 A.M., temperature 102.2°, pulse 114, respirations 37; there were only slight changes during the day. During the afternoon the patient changed the position of his hand, which had been almost constantly at the vertex, to the forehead. This change was not due to weakness, as at times he would cross both hands, and rest them on the pillow above his head, as if to assume a more comfortable position. There was also noticed a modified Cheyne-Stokes breathing. The respirations declined until very weak; without a pause the cycle was terminated by one or more deep full inspirations, when the succeeding decline began. This character of breathing continued, more or less marked, until death.

June 21, at 9 A.M., temperature 102°, pulse 114, respirations 28, with only slight changes during the day. The patient showed the most rational signs of semiconsciousness that were present at any time during the sleep. He apparently recognized a relative for a moment, and, in response to questions, repeated the last word of the question. When requested by the nurse to turn over, would at first resist, but afterwards made efforts to assist her. Upon dressing the mastoid wound, the muscles at the back of the neck were rigid. Attempts to lift the head from the pillow caused much pain, a minute later the muscles had relaxed, and there was no difficulty in raising the head to apply the dressings. This was the first time that retraction of the head and muscular rigidity had been observed; it became permanent during the night, and continued throughout the remainder of the illness. The nurse noticed that considerable restlessness preceded such urination, and, after several attempts, succeeded in collecting a small quantity, which showed albumin for the first time (about one-half bulk), and, as before, a very heavy uric acid deposit; no casts nor any other abnormalities. There having been no improvement in his condition, except for the more favorable pulse and temperature, members of the family becoming more anxious at the prolonged sleep, and being disappointed that there should have been so little improvement in his mentality, following the second operation, it was decided to have the opinion of a neurologist to assist in determining the advisability or not of trephining; at least there would be the satisfaction of making sure that the opinions and treatment thus far were correct and nothing had been left undone. Dr. Luther C. Peter was called in consultation at 8.30 P.M. After a careful examination the following was his opinion:

"On examination of L. J. I find the following conditions: He is restless in the dorsal decubitus, moves extremities constantly, presses hand to head, and, from the facial expression, it is quite apparent that he is suffering from intense pain in the head. His breathing is not heavy; he lies in a semistupor, from which he can be partially aroused by talking, and by moving any part of his body, which he strongly resists, giving evidence of pain. Under close questioning he can, for a moment, comprehend and answers in monosyllables; but very quickly relapses into a semiconscious state. There are no palsies of the arms, legs, or face; but the left side of the body is more resistant to passive movement than the right. The deep reflexes are all present, more marked on the right, and increased in the upper extremities, as compared with the knee jerks. The Babinski reflex is absent. Kernig's sign, inability to flex the thigh on abdomen, with legs extended, is present, and attempts to forcibly flex the legs at right angles to the body cause pain. Touch and pain are apparently recognized. No muscular rigidity, save in the post-cervical muscles, which are in a state of spasticity. Attempts to raise the head cause the neck muscles to be held rigidly and the entire body is lifted; there is a tendency to retraction of the neck and head, when the patient is at rest; incomplete ptosis of both upper eyelids, but no other extraocular palsies; the left pupil is larger and responds more sluggishly to light; respirations irregular; an attempt at Cheyne-Stokes

breathing. The marked pain in the head, cervical rigidity, Kernig's sign, ptosis, and rapid pupillary phenomena, together with the temperature record, rapid pulse, and irregular respirations point to a basal meningitis of the middle fossa. Pus in the brain itself, if present at all, is masked by the meningeal symptoms, and in the absence of localizing symptoms, other than those of the basal meningitis, operative interference for the intracranial disease is not indicated. The diagnosis is basal meningitis, beginning possibly in the temporal lobe on the right, adjacent to the mastoid area, and a sequence or a complication of the mastoid disease."

At the time of the consultation it was agreed, in spite of the absence of indications for intracranial interference, that should the patient show no improvement or further signs of returning consciousness, at the worst it could do no harm and might be warranted in an effort to obtain relief from the pressure symptoms.

June 22. Starting at 6. P.M. on June 21, the temperature gradually rose, and at 4 P.M., on June 22, it was 104.8°, pulse 120, respirations 24. At 1 P.M. we saw the patient. It was apparent that, since the time of the consultation with Dr. Peter, he had lost considerable ground. He was more profoundly unconscious; restlessness replaced by quietness, and a continuous rise in temperature. We explained the conditions fully to the family, who strengthened our partial decision to take further surgical measures by urging that we should take any chance which seemed at all warranted, or in the least indicated. A uranalysis was made, which showed considerable phosphatic excess for the first time: albumin present, somewhat less than at the previous examination: and, also, for the first time, a large amount of indican, and an occasional finely granular tube cast. It was decided to open the frontal sinus, as all the symptoms had been referred over the distribution of the fifth nerve, and as dead bone was found in the ethmoid, although none in the sphenoid, it was thought that there might be suppuration in the frontal sinus, with perforation and extension to the meninges.

Third Operation.—At 4 P.M. the patient was etherized for the third time, and Dr. Ward, assisted by Dr. Felt, opened the frontal sinus from the anterior surface. There was free bleeding; no pus, necrosis, or bare bone; gauze drainage and dressing applied. The mastoid wound was dressed; granulations looked healthy. The drainage in the nasal cavity had been, and was, satisfactory; marked diminution in the fetor of the breath. At 6 P.M., at the close of the operation, the temperature was 103°, pulse 120, respirations 42; at midnight, temperature 100.8°, pulse 116, respirations 38.

June 23. The temperature gradually rose from midnight. At 11 A.M. it was 104.8°, pulse 144, respirations 46, followed by slight changes, until it dropped at 7 P.M. to a temperature of 102°, pulse 138, respirations 54. During the twenty-four hours following the third operation, with the exception of the pulse and temperature variations, there was little or no change in the patient's condition. He was restless throughout the night; acted as if it hurt him to swallow. This difficulty in swallowing appeared greater as the night wore on. Examination of the throat by Dr. Ward showed marked dryness, but nothing further to account for the difficulty in swallowing. Respirations, at irregular intervals, became more distinctly Cheyne-Stokes; the pain in the head and rigidity of the neck became very marked. He strongly resisted all efforts to turn him in bed. The pupils responded to bright light, but not to that of a match or candle. We discussed the advisability of lumbar puncture as a means of relieving the intracranial pressure.

At 1 P.M., according to a previous arrangement made by members of the family, Dr. Frank White, the wife's physician, met us in consultation. The history of the case in detail, together with the nurse's record and the temperature charts, were gone over with him. He was especially requested to make any criticisms of the treatment to date, and particularly to offer any suggestions for further treatment. Dr. White was inclined to lean towards more surgical interference. He felt as we did, and as members of the family had frequently expressed themselves, that almost anything for which there seemed to be the least excuse or indication was not only excusable, but warranted. When pressed, however, to designate the kind and location of further surgical procedure, particularly its nature and locality, he admitted that he felt exactly as we did, viz., that there was no positive indication for any intracranial interference.

From 7 P.M. to midnight the temperature varied, with quick changes, from 102.4° to 104.8°, pulse 120 to 132, respirations 44 to 50. The patient had several sinking spells, one of them during Dr. Mills' visit, at 9 P.M., and the nurse was instructed to report to him, by telephone, the patient's condition at 11 P.M., which she did. Dr. Mills tried to reach Dr. Ward by telephone, but could not locate him. He then called Dr. H. P. McAniff, and they visited the patient and punctured the spinal canal at the juncture of the second and third lumbar vertebræ, but even after applying suction to the needle not a drop of fluid was obtained; the operation was repeated, with no greater success. As it was evident the needle had entered the canal, the failure was attributed to the coagulated condition of the spinal fluid. The patient gave slight evidences of pain upon the insertion of the needle, but offered almost no resistance; no signs of discomfort followed the operation.

June 24 temperature varied from 102° to 104.2°, pulse from 130 to 168, respirations 46 to 67. We called at 12.30 P.M. The mastoid and frontal wounds were dressed; the latter was in excellent condition. The former for the first time showed increased discharge, which continued until death. No evidence of increased inflammation in or about the wounds. The breath was again extremely fetid; profound general depression. At that time, and also the day before, Dr. Ward noticed the right side of the face was drawn, indicating irritation of the facial nerve; in a few moments it was relaxed. During the afternoon the difficulty in swallowing grew less, and in its place, when taking nourishment, there was more or less coughing, as if it gagged him. In spite of this he took his nourishment fairly well. At 9 P.M. he was unable to swallow any food, and did not during the remainder of the illness, nourishment being given entirely by enemas, which were all retained.

June 25. Temperature varied between 102° and 103.6°, pulse 150 to 168, respirations 52 to 66. At 2 A.M. the respirations became very shallow, pulse very weak; the patient was perfectly quiet; the eyes were open during the entire night. During the early morning the patient made several attempts to clear his throat, but without apparent result. At 8 A.M. the pulse became intermittent. At 11 A.M. shallow stertorous breathing developed, which continued until death, at 3 P.M.

Autopsy.—On the evening of Monday, June 25, the date of death, an autopsy was performed, Drs.

Felt, McAniff, Abbott, Mills, and Ward being present. Unfortunately, it was not possible to locate Dr. Peter in time for him to be there.

On removing the calvarium there was nothing particularly striking about the superficial surface of the brain other than the presence of purulent leptomeningitis, the pus being diffused over the whole surface of the brain, extending down into each sulcus, more particularly noticeable over the left frontal and precentral lobes. Careful examination was made of all the venous sinuses to ascertain whether or not there had been sinus thrombosis, with entirely negative results. Upon raising the brain from the base of the skull, it was observed that the subarachnoid space was completely filled with thick, yellow pus, entirely surrounding the medulla and extending down the side of the cord as far as could be observed. The nerves and vessels appeared as if macerated by the pus surrounding them, and very little traction was needed to tear them loose; the spinal cord alone required to be cut. As permission to take away any part of the body was not obtained, histological examination of the brain structure could not be made. Coronal sections through all parts of the brain were made to determine the condition of its interior. The cortex seemed very much softened and pulpy and had the appearance of pus along the vessel sheaths. The white matter of the brain was less dense than normal. The ventricles, especially the lateral, were widely distended with thick, greenish pus, and upon section of the posterior cornua of the left lateral ventricle, the pressure of the pus contained therein pushed out the choroid body. The walls of the ventricles were softened and showed evidences of inflammation. Unfortunately no bacteriological examination was made; this would have been of particular interest, as it would have determined whether it was a pure or mixed infection. The upper end of the spinal cord, at the point of severance, was in the same softened, macerated condition as the superficial surface of the cerebrum. The medulla was softened, but to a less extent than the cerebrum or spinal cord. The cerebellum was in fairly good condition; far better than any other part of the brain. The thick pus in the meninges of the cord at once explained the failure in obtaining fluid from the lumbar puncture, it being evident that the circulation of the cerebrospinal fluid had been entirely eliminated. From the examination of the brain structures it seemed inexplicable how the man had lived during the last few days.

Upon examination of the interior of the skull no necrosed areas or perforations were found; in fact, the internal table of all parts of the skull bore a normal appearance. The frontal sinuses were normal. In the sphenoid sinuses the lining membrane was in an inflammatory condition and infiltrated, but no pus was found. The left ethmoid sinus was normal; the right ethmoid showed a certain amount of necrosis, as had been revealed at the operation. The left middle ear and mastoid were normal; in the right middle ear no necrosed spots were observed. Not being satisfied as to how the infection had extended into the cranial cavity, the top of the petrous portion of the right temporal bone was cut away, and in several parts, more marked in the region of the labyrinth, dark spots were found, varying from slight discoloration to almost black. These spots followed along the course of the facial and auditory nerves, determining the fact that that intracranial invasion had been an extravasation along the sheaths of these nerves and the lymphatics. This would seem to justify Macewen's observations that infiltration along the sheaths of the facial and auditory nerves to the cranial cavity is much more prone to end in purulent leptomeningitis, involving the internal and external cerebrospinal fluid, and seldom causes brain abscess.

Conclusions.—The question naturally arises, would intracranial interference have availed anything? It was the unanimous opinion of all present at the autopsy that it would not, and the pathological conditions found proved beyond all question that our opinion, formed while watching the progress of the case, was correct, viz., that at no time did the indications warrant trephining. We are aware that a few cases of suppurative meningitis involving the subarachnoid fluid have recovered after operation and drainage. All the cases we found in a hurried search of the literature, which were three in number, followed chronic otitis, while those that followed acute otitis died, autopsy revealing general leptomeningitis. Symptoms of intracranial disease are so varied as not to be an index to the actual conditions present; this is proven by all statistics, where the symptoms were recorded during life and autopsies held to determine those conditions. In those cases that recovered, we can only conjecture as to the extent of the meningitis. The fact that the pus areas were drained and recovery followed undoubtedly proves the meningitis was local. Ballance has well asked the question, "How could the subarachnoid space be drained?" and adds: "The arachnoid spreads from convolution to convolution, and every space between each convolution would have to be opened. When the pus is underneath the visceral arachnoid drainage is impossible."

Macewen has observed that "if the pathological matter enters the subarachnoid space before adhesion with the pia mater has been formed, leptomeningitis is apt to be set up; in which case the whole of the cerebral and cerebellar meninges are apt to be involved, the inflammation spreading with the greatest rapidity along the areolar tissue of the arachnoid. . . . On the other hand, if adhesion between the different layers of the meninges takes place before the infective material reaches the subarachnoid, for a time at least the suppuration will be local."

The symptoms in this case are to be explained by: (1) Increased intracranial pressure. (2) Disturbance of cerebral function. (3) Suppurative leptomeningitis, involving the cerebrospinal fluid.

The consistency of the brain, according to von Bergmann, is such that pressure exerted at any part is transmitted and equally diffused to all parts of the cranial cavity. The effect will be earliest manifested upon the more easily compressed tissues. The walls of the veins have less resistance than those of the arteries and will suffer most. Their points of exit from the skull are bony foramina, which prevent sufficient dilatation to permit the outflow of blood to maintain circulatory equilibrium, resulting in slowing of the circulation and increased congestion. The two conditions reacting, each intensifying the other, cause increased intracranial pressure. So long as the cerebrospinal circulation is maintained, the greater part of the excess of cerebrospinal fluid will be absorbed by the capillaries in the spinal meninges; but as soon as this circulation is obliterated intracranial pressure will be rapidly increased. "If the circulation of the brain becomes gradually slower, the order of the centers affected is as follows: The cortex, corona radiata, gray matter of the spinal cord, region of the pons, and finally the medulla oblongata. . . . Consciousness is more rapidly lost than any other func-

tion, and returns only after the circulation has been fully restored. . . . The persistency of pressure is as dangerous as an exceedingly high degree of pressure" (von Bergmann).

The clinical manifestations of cerebral pressure are divided into two stages: (1) The stage of stimulation. (2) The stage of depression.

We will now attempt to explain the obscure symptoms manifest in our case. The sequence of tissues involved were undoubtedly as given by von Bergmann, cited above.

1. *Pain.*—The pain was due to basilar meningitis. It varied in degree and character until the morning of the 17th, when the infection probably had extended to the cerebral ventricles, and the resulting thick pus obliterated the cerebrospinal circulation. The rapidly increasing pressure caused thereby produced the violent pain, which drove the patient frantic. The morphia quieted him until the increasing pressure became so great as to produce unconsciousness, which continued. The lessened pressure caused by the hemorrhage at the second operation was followed by some improvement in his mentality. We believe the soreness in the mouth was due to irritation of the fifth nerve by the ethmoiditis and basilar meningitis.

2. *Restlessness.*—The pressure produced irritation and, therefore, stimulation of all centers, which stimulation caused restlessness and increased sensory reflexes to the stage of depression, when finally all were abolished.

3. *Temperature.*—High remittent temperature was due to meningitis and absorption of the septic material.

4. *Pulse.*—At first slow from stimulation of the pneumogastric, causing cardiac inhibition: later increased pressure destroyed irritability of this nerve and rapid pulse followed, augmented by the high temperature: the period of slow pulse was unusually short.

5. *Respiration.*—Varied with temperature and cerebral pressure; became Cheyne-Stokes from pressure upon the medulla by the pus in the cerebral ventricles and subarachnoid space.

6. *Absence of Vertigo and Vomiting.*—This was probably due to the gradually increased pressure with no sudden variations in the circulation

7. *Absence of Localizing Symptoms.*—The pressure was exerted equally over all parts of the cortex and therefore produced no localizing symptoms, and was insufficient to cause general convulsions.

TYPHOID FEVER COMPLICATED BY MULTIPLE ABSCESSES OF THE KIDNEYS AND BY LOBAR PNEUMONIA.

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The physician is ever alert for the development of the renal complications common to typhoid fever. A simple albuminuria (probably febrile in origin) is to be expected during the fastigium in nearly every case of typhoid infection. The amount of albumin excreted through the urine as the result of fever is always small and usually gives a feeble reaction either by heat or by any one of the contact methods.

Acute nephritis may develop at practically any state of typhoid fever, and is placarded by a diminution in the quantity of urine, albuminuria, and the presence of renal casts. With the development of nephritis all the symptoms of typhoid fever are aggravated. Both simple and diphtheritic pyelitis are known to follow typhoid infection.

Judging from the mention made by the different authors of multiple abscesses of the kidneys as a complication of typhoid fever, this must be rather unusual. I have been privileged to study four cases of typhoid fever in which there was anuria lasting for a period of twenty-four hours.

The patient, a clinical and pathological study of whose maladies forms the subject matter for this report, was a German woman, twenty-five years of age, who was admitted to my service at the Philadelphia Hospital, August 26, and died September 10, 1906. At the time of her admission she presented a clinical picture of typhoid fever, and while she was unable to speak English the history obtained pointed rather clearly to the fact that she had been indisposed for about a week.

A physical examination showed the heart and lungs to be normal; the urine was practically normal, and the temperature was 101.4° Fahr. The symptoms of typhoid fever grew worse, and three days after her admission there was pronounced tympany, marked intestinal pain, especially with each movement of the bowel, and extreme tenderness in the right iliac fossa and along the ascending colon. At this time there was a rather liberal eruption over the abdomen and chest.

During the third day of her stay in the hospital she was seen to be somewhat cyanosed, respirations were hurried, the pulse increased from 106 to 120 per minute, and numerous râles were audible at the base of the right lung. The urine contained a trace of albumin.

The fourth day (approximately the twelfth day of the fever) delirium became maniacal, and it was found necessary to administer a portion of the medication hypodermically every four hours during the following day. Each hypodermic contained digitalin gr. 1-100, strychnine sulphate gr. 1-48, and nitroglycerin gr. 1-120. Three or four times daily she was given an enema of milk, to which had been added a liberal quantity of milk of asafetida, with a view to reducing the abdominal distention, which was perceptibly lessened after each enema. Stimulants and codeine sulphate were given by mouth whenever possible.

The lung condition progressed from bad to worse until there was consolidation of the lower half of the left lung. Singularly during the fifth day in the hospital (twelfth or thirteenth day of fever) the patient did not void any urine, nor was there any urine found in the bladder upon catheterization. The temperature ranged near 103° Fahr. and was of the continued type.

Early the following day she voided three ounces of dark urine which was rich in albumin. Throughout the day cyanosis increased and the pulse became weak, thready, rapid, and irregular. The delirium ameliorated some, but there was still evidence of a migratory pneumonia which was spreading, and anuria obtained most of the day.

In consequence of the temperature having risen to 104° Fahr. the patient was given a cold sponge bath, to which she reacted very unfavorably, becoming pulseless, with cold extremities, temperature 99° Fahr. (by vagina), and marked cyanosis.

The bath, while it was borne badly, may have exercised some influence upon the action of the kidneys, since the following day the patient voided 49 ounces of urine. The patient's general condition

was much improved twelve hours after the cold sponge bath, and the kidneys were functionating actively.

The urine was highly acid, specific gravity 1.014, gave a decided reaction for albumin, and the diazo-reaction was present. Microscopically there were found many short and long hyaline renal casts, many both broad and narrow granular casts, numerous leucocytes, and a few red blood-cells. Epithelial cells were present in great numbers, but they were never found intimately connected with renal casts, consequently it was impossible to say beyond question of a doubt that they were renal in origin.

Surrounding the site of puncture of each hypodermic there was a small hemorrhage in the skin, and these hemorrhages varied in size according to the time since the hypodermic had been given. Ecchymoses from hypodermics given during the previous night did not exceed one-eighth of an inch in diameter, while those which corresponded with the hypodermics given forty-eight hours earlier varied from one-half to one and one-half inches. The cause of these cutaneous hemorrhages was not satisfactorily explained, since they continued to form even when digitalin and nitroglycerin were not administered with the hypodermics. The cutaneous hemorrhages must, therefore, have depended for their production upon the local irritation excited by the puncture of the hypodermic needle, and further upon a predisposition of the patient toward the development of cutaneous ecchymoses.

Two days later, and for a second time, the patient displayed the symptoms of uremia, in addition to those already present resulting from the double croupous pneumonia and typhoid fever. The respirations, which were 45 per minute, were reduced to 38, and the pulse of 140 and of low tension became stronger and of better volume at 120 beats per minute. Increased arterial tension and lessened frequency in the respirations may be a precursor of grave renal complications in acute fevers. Again, for a period of twenty-four hours the patient did not void any urine, and during this apparent recurrence of renal involvement she entered into a semicomatose state, which was soon followed by general collapse.

The post mortem made upon the body of this patient was conducted by Dr. Joseph MacFarland, Pathologist to the Philadelphia Hospital, who gave a pathological diagnosis of "Typhoid fever, pulmonary infiltration with atelectasis, parenchymatous nephritis with infectious emboli of the kidneys, parenchymatous degeneration of the liver, and acute splenic enlargement." I have abstracted from the pathological records such points as have special bearing upon the general symptomatology of the case under discussion.

The pericardium and leaflets of the heart were normal, although the cardiac muscle showed some evidence of degeneration, but nothing more than is to be expected in severe febrile conditions.

The left lung weighed 360 gm. The superior lobe and one-half of the inferior were involved by an acute pneumonic process, while the remaining portion of the lung was collapsed. Excised fragments from the consolidated portions of the lung sank immediately when placed in water.

The right lung weighed 440 gm., displayed a few pleural adhesions at the base, and the inferior lobe was completely involved by an acute pneumonic process which was apparently identical with that displayed by its fellow.

The spleen weighed 280 gm. and measured 11x14x3½ cm. Its edges were blunt and decidedly thickened, the organ was soft, and upon section the cut surface was purplish red and fairly characteristic of that found in typhoid fever.

The condition of the kidneys was equally striking in interest with that presented by the lungs. The left kidney weighed 230 gm., was slightly enlarged, and presented a smooth slate-colored surface. Upon section the organ cut easily and its capsule stripped readily, leaving behind a highly congested surface. Both upon the cut surface and underneath the capsule there were seen a number of small septic infarctions, which appeared to be rather evenly disseminated throughout the greater portion of the cortical (medullary) substance of the kidney. At one point there was a swelling about 1 cm. in diameter, due to an aggregation of minute abscesses. The cut surface of the kidney was decidedly grayish in color and displayed extreme congestion at the base of the pyramids. The pyramids also showed some striation as the result of septic emboli.

The right kidney weighed 240 gm. and generally speaking the lesions presented by it were identical with those found in its fellow.

The liver weighed 1,690 gm. and its surface was decidedly nutmeg in appearance; the organ was somewhat softened as a result of congestion.

The colon, from the ascending portion onward, displayed only a moderate degree of congestion. The ascending colon presented a few ulcers, which were about 1 cm. in diameter. At the cecum there was a marked aggregation of small ulcers, which covered more than one-half of the mucous surface, and there was also extensive ulceration at the ileocecal valve. The first 10 cm. of the ileum was almost entirely occupied by an extensive ragged ulceration resembling that found in the cecum, and beyond this point there were many deep, ragged ulcers, corresponding to the situation of Peyer's patches. A few of the ulcers were situated transversely to the intestine (a feature characteristic of tuberculosis and not of typhoid fever), but I am inclined to regard this peculiar arrangement of the ulceration as dependent upon extensiveness of the process and not due to tuberculosis.

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THE PREVENTION OF DISEASE.*

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In order to discuss intelligently the prevention of disease it is necessary to classify all diseases with reference to their causation. For the purpose of this paper, all disease is due either to some inherent degenerative change or error of metabolism, or to some extraneous cause introduced into the system. To the latter class belong the infectious and contagious diseases, so called. As these terms are often loosely applied, I shall adopt the suggestion of Rosenau and speak of them as "communicable" diseases. In this paper I shall assume that the discussion of communicable diseases only is intended, as they are from a sanitary standpoint the only preventable ones. The communicable diseases I shall divide for convenience into two classes:

1. Those diseases caused by animal parasites.
2. Those caused by bacteria.

The animal parasites are divided into three subclasses:

*Read at the "Symposium on Preventive Medicine" of the Virginia State Medical Society at its annual meeting at the University of Virginia, October 9 to 11, 1906.

A. The various parasitic insects, as fleas, bedbugs, pediculi, ticks, etc.

B. The helminths, as lumbricoides, ascarides, teniæ, ankylostoma, etc.

C. Protozoa, which require for their development and transmission a separate cycle of existence in an intermediary host, as the hæmatozoa of malaria, yellow fever, rabies, filariasis, and some of the trypanosome diseases, and probably smallpox and relapsing fever.

It is obvious that in diseases of such dissimilar origin many of the measures adopted for the prevention of one class will be totally useless in the other.

It is not within the scope of this paper to enter further into the etiology of these diseases. As far as possible it will be attempted to deal with a class rather than with a single disease.

Among the protozoan diseases yellow fever occupies a prominent part, being the disease most dreaded in our Southland. It has been demonstrated to the satisfaction of the large majority of nosologists that the only method of convection of yellow fever is through the medium of the *Stegomyia fasciata*. Of course, then, our efforts should be directed first towards preventing infection of mosquitos, and secondly towards their destruction. The first is accomplished by screening all patients sick with yellow fever for the first three days of the disease (after which time they become noninfective to mosquitos), screening of all doors and windows to prevent ingress and egress of all mosquitos which might have become infected, and destroying them after removal of the patient. The material which seems most efficacious in their destruction is "culicide," a preparation consisting of equal parts of camphor gum and crystalized carbolic acid (by weight) rubbed together, forming a liquid which is colored with methylene blue, eight grains to the gallon, and volatilized by heat.

After a room has been exposed to the fumes of culicide (4 fluid ounces to 1,000 cubic feet), the mosquitos fall to the floor and are swept up and burned. Culicide was mainly used in the epidemic of yellow fever in Louisiana last winter, and I am informed by one of the officers of the Public Health and Marine Hospital Service, who had charge of the disinfection of houses, etc., that it was very efficient in destroying the various forms of animal life, but was in no way harmful to even the most delicate fabrics. Of course, the propagation of the mosquito should be prevented as far as possible by screening cisterns and rain barrels, filling all holes, and destroying all broken bottles or other empty receptacles in which stagnant water might be found, and oiling those pools of water which cannot be filled, in order that the larvæ may be destroyed. Upon the appearance of yellow fever in a community, that community should be quarantined at once by Federal authority, camps established, and if, after five days' detention of persons desiring to leave, no symptoms appear, such persons should be allowed to travel anywhere without restriction. Their baggage and the cars in which they travel should be fumigated in order to destroy all stegomyiæ present. The method used in yellow fever for destroying mosquitos should be used in malarial cases also, as the two diseases have many points of resemblance with regard to causation and symptomatology, and I believe the time is not far distant when the yellow fever germ will be discovered and shown to have characteristics similar to those of the hæmamœba malariæ. The *Stegomyia fasciata* is a domestic mosquito and does not fly far away from its birthplace, consequently, by destroying their breeding places around dwellings, we practically eliminate the danger of a spread of yellow fever.

Authorities differ as to the domesticity of the *Anopheles*. Howard says: "They have always been found in more or less permanent pools of water, either in the bed of an old canal, or in spring-fed woodland streams, or in the side pools or shallows of field springs, or in artificial excavations filled with surface water. They are rarely found in water in barrels or troughs, and rarely found in the same water with larvæ of *Culex*." This would seem to show that they are to a great extent wind borne, especially as malaria usually seems worse on the north side of a stream, the prevailing winds in summer and fall being southerly.

I am not aware that any experiments have been made with regard to the period during which a malarious person is infective to mosquitos, although that would seem to offer a fruitful and interesting field for scientific research.

The efficacy of the method adopted for preventing malaria in the Campagna by administering quinine and screening patients has been fully demonstrated, and has accomplished more for that purpose than all the previous draining of the marshes. The same method used by the German government in Africa has been productive of similar beneficial results. It would then seem to be an easy matter to rid our country of malaria by carefully screening patients and others, rendering them noninfective to the anopheles, and destroying the mosquito.

Rosenau has shown that of the chemicals used for fumigation sulphur fumes are most destructive to the various forms of animal life, while formaldehyde is the better disinfectant for bacteria. Since that time culicide seems to destroy small animal organism even better than sulphur. According to Councilman, Guarnieri and others, smallpox is caused by a protozoon, as is also rabies. It is unnecessary to suggest to this intelligent body that smallpox can be easily stamped out by vaccination and isolation; there are few diseases which can be so satisfactorily and easily prevented. The limits of this paper prevent the discussion of the diseases caused by the other animal parasites. I will, however, suggest that ankylostoma seems to be threatening the South Atlantic and Gulf States, as shown especially by the intelligent investigations of Charles Wardell Stiles.

The Various Bacterial Diseases.—It will be necessary to class under this head many diseases whose specific germs have not yet been isolated, but whose symptomatology and course resemble so closely bacterial diseases as to prevent their being classified elsewhere; *e.g.* measles, and diseases caused by spirochætæ.

Methods of Convection.—(1) Mediate or immediate personal contact with patient. (2) Through invected environment (fomites). (3) Food or water supply. (4) Through medium of rats and domestic animals, flies and other insects. (5) Through desiccated or partially desiccated bacteria in dust, taken into the system through the respiratory or digestive tract. (6) Through abrasion in the skin, as in pyogenic diseases, diphtheria, syphilis, ankylostoma, etc.

Our possessions in the Philippines, West Indies, and Panama, and our increasing commercial relations with South America and the Orient, constitute a menace to our country in the importation of tropical diseases. Not only may the disease-carrying animal and various bacteria be kept alive during

the continually shortening voyages, but many persons resident in the tropics may bring within their systems the various trypanosomes and other organisms and infect the fauna of this country. The best method to prevent the ingress of these diseases is to inspect all such travelers at the point of departure, and also upon their arrival at quarantine. A strict, intelligent quarantine will keep out most of the so-called quarantinable diseases—cholera, typhus fever, smallpox, leprosy, plague, and yellow fever. Of these the one to be most dreaded is plague, on account of its greater insidiousness, greater difficulty of extermination, and higher rate of mortality.

According to Kitasato the pest bacillus is carried by raw cotton or grain. The infected grain is eaten by rats, which thus contract the disease. The sick and dead rats are eaten by others, so that in a short time the entire rat colony is infected. Thus the bacilli are disseminated and enter the system through abrasions of the skin or by the respiratory passages or alimentary canal, or through the bites of fleas.

Kitasato advises the thorough disinfection and fumigation of premises, destruction and cremation of rats, building of rat-proof houses, and cremation of all persons dead of the disease.

It is assumed that the usual course of fumigation and disinfection during and after the course of the communicable diseases is so well understood by the average practitioner that reference will not be made to it further than to mention under certain diseases some special measure peculiar to the convection and prevention of each.

And here I would state that for the purpose of fumigation formaldehyde is more destructive to bacteria than culicide or sulphur dioxide, while the reverse is true in the case of animal parasites of all kinds. In the fumigation of houses, ships, and railroad cars, paper should be pasted over all cracks around windows and doors to prevent the escape of the fumes, and the room kept closed for twenty-four hours, in order that all bacteria may be destroyed. The methods of generating the fumes of formaldehyde adopted by the Illinois and other State boards of health is so simple and practical that I shall insert it here. It requires no heat, but a somewhat larger percentage of potassium permanganate should be used (about 8 ounces to get the best results). The method is very simple, requiring no apparatus except a tin pail of sufficient capacity, best made with flaring top. It is made with a double bottom with one-quarter inch air space between the layers of tin, and is entirely covered on the outside with asbestos paper. Instead of this apparatus an ordinary milk pail set into a pulp or wooden bucket will answer every purpose.

The room is sealed, fine needle-shaped crystals of potassium permanganate (3½ ounces to each 1,000 cubic feet of air space) are placed in the container. Over this salt is poured 40 per cent. solution of formaldehyde (1 pint for every 1,000 cubic feet of air space). The operator should leave the room quickly, as large quantities of gas are at once evolved. The results of laboratory experiments have shown that the gas thus evolved acts more thoroughly on account of its great concentration, and kills very resistant microorganisms, even when concealed under several thicknesses of cloth. The Maine Board of Health recommends 6½ ounces of permanganate and two pints of formaldehyde solutions for every 1,000 cubic feet. Presence of moisture in the air is essential. The disinfection of the room, the woodwork, furniture, and floors with liquid disinfectants (mercury bichloride, 1 to 1,000) is as important in this mode of disinfection as in any other. The method requires the use of common and relatively cheap chemicals, so that it is estimated that the disinfection of 1,000 cubic feet costs about 75 cents. Based on this method, proprietary preparations are on the market under fanciful names, and for which extravagant claims are made, but they are in no way superior to the simple methods, and their use should be avoided because of the uncertainty as to the amount of gas they will evolve.

Next in importance is cholera, but owing to its severe and easily recognized symptoms, and the much feebler vitality of the spirillum, its prevention is accomplished with less difficulty. Cholera is acquired through drinking water. However, the spirillum is kept alive upon fruits and other edibles. The usual precaution of isolating the patient should be taken as far as possible. This is usually easily done in the more acute communicable diseases, as smallpox, diphtheria, cholera, etc., but it is not practicable in the venereal diseases. Pneumonia and typhoid fever should by all means be isolated. Physicians and others who come into enforced contact with such cases should disinfect themselves thoroughly before mingling with other persons. The patient infects his surroundings through the feces and urine, expectoration, vomitus, breaking down of abscesses, as in streptococcus infection and bubonic form of plague, and probably in all of the exanthemata by desquamation. These bacteria are of varying degrees of vitality, the spore-bearing bacilli, such as tetanus and anthrax, being the most hardy, and often retaining their vitality on clothing and other fabrics, in dust and in water or food. Even so delicate a germ as the cholera spirillum is not killed by considerable exposure. The proper disinfection of cups and other utensils used by patients, the destruction of all food left by them, the disinfection of all excreta before leaving the sick room, should be strictly insisted upon. Carbolic acid or trikresol, rather than bichloride, should be used for disinfection of stools, urine, or sputum.

Dr. Doty's method of disinfection of stools, as quoted by Dr. Grandy in the *Virginia Bulletin of Health*, seems to be an admirable one. He makes the following solution: Copper sulphate, 1 pound; lime (unslaked), 1 pound; water, 10 gallons. Put the copper sulphate in cotton bag and hang it in 6 gallons of water. Pour the rest of the water on the lime, and mix the two solutions. Stir well before using. This solution should be kept on hand, and should be poured over and thoroughly mixed with the typhoid urine and stools, which should stand in it for at least half an hour. It is not only a good disinfectant, but a deodorant, and might well be generally used in country privies, from which germs can easily be carried to the kitchens by flies. This is a source of typhoid infection which is often overlooked, but which was responsible for typhoid epidemics among our soldiers during the Spanish War, and which is probably often the cause of cases which appear in the house with a convalescent typhoid fever patient, whose urine and stools are not disinfected. While this applies especially to the rural districts, typhoid urine and stools should also be disinfected before being emptied into the city sewers, as these often flow into rivers from which other towns draw their water, or into bays from which oysters are taken.

In all the respiratory diseases the sputum should be received on cloths and immediately destroyed by burning. Sweeping should be avoided as far as possible in a sick room, and all dust removed with

a damp cloth. Many germs are doubtless expelled through the "insensible expectoration" during coughing in tuberculosis, influenza, and the pneumonias, and probably also in typhoid fever. Since the latter disease is known to be a septicemia, with a probable first infection in the lung in many instances, it is fair to presume that its bacillus does undergo a desiccation or partial desiccation, and it is to that extent a wind-borne disease. The *Bacillus typhosus*, according to Park, has been kept alive sixty-four days in dust. In cities dust should be prevented as far as possible by sprinkling the streets and sweeping and removing the dust before it dries. It should be remembered that the typhoid bacillus remains in the urine and feces of a patient for weeks after recovery.

Droppings from horses should be removed from the streets at once, as they are a breeding medium for flies. Flies breed usually in and around stables, preferably in the dung of the horse, and also in garbage. It is therefore necessary that garbage be collected and destroyed as rapidly as possible. Flies carry infection by lighting upon a patient or the infected excreta and afterwards falling into water or food and infecting it. There is evidence that some flies play the part of an intermediary host and convey the disease by biting the patient, as in the case of the Tsetse fly, which carries the trypanosome of sleeping sickness. Flies should be excluded from houses as far as possible by screens, and killed by fumigation with culicide or sulphur. Fleas, bedbugs, etc., act as carriers of infection, and should be exterminated.

Milk being an excellent culture medium for many of the pathogenic bacteria, is a fruitful source of infection in a number of the communicable diseases. Rosenau says (Disinfection and Disinfectants, page 214): "Of all foods, milk is most likely to be infected. It is a very good culture medium for almost all the pathogenic bacteria; for instance, fresh milk contaminated with a few typhoid, diphtheria, cholera, or plague bacilli, will in a few hours at ordinary temperatures have every drop teeming with many of these organisms without appreciably altering the appearance of the milk. It is easy to understand how readily the infection of typhoid fever, cholera, diphtheria, or plague may get into the milk. The exanthematous diseases have frequently been traced to the milk supply. The possibility of tuberculosis being conveyed in the milk is ever present. The milk supply in a large city is always under suspicion, so frequently does it carry disease." The source of the milk supply should be thoroughly examined. Every case of sickness among the attendants of dairies and their families should be carefully investigated. Cows should be examined for tuberculosis and other sickness, and all ailing ones killed, or sent away. They should be well fed, well bedded, kept thoroughly clean, and given plenty of good clean water. No water closets should be allowed near the dairy nor its water supply. Milking should be done, after thorough cleansing of the udder, in a clean separate milking room, into covered buckets, or the milk should be strained through sterilized cloth. The milk should be placed where it cannot be contaminated by dust, and marketed in bottles sterilized by steam and never refilled from the wagon.

Epidemics.—In the case of epidemics it is necessary to prevent public gatherings. In the smallpox epidemic in Norfolk, in 1899, it was found that after a severe cold spell the number of cases of the disease among the negroes was always increased. This was attributed to their huddling together in barrooms and other such resorts for warmth.

The schools, public and private, should be carefully watched for communicable diseases, and no pupil residing in a house where such diseases exist should be allowed to attend, nor should any person not vaccinated be admitted. In all schools pupils should be taught at least the elementary rules of sanitation and hygiene. They should be instructed in the danger of expectorating on floors, of swapping chewing gum, and of other sociable but pernicious practices. Individual drinking cups should be used. The same rules should apply to factories, department stores, and other places where people most do congregate. Such places should be supplied with fresh air and sunlight as far as possible.

In conclusion I desire to say that in epidemics of cholera, plague, or yellow fever, the federal government should take charge of all cases and be given full power to stamp out the disease and regulate travel. Witness the good work done in the yellow fever epidemic in New Orleans last year, with no return. How much delay and interference with traffic could have been avoided but for the concealment of the disease in the first intance, and the consequent illogical and useless gunshot quarantine. Quarantine should mean the maximum protection to health with the minimum interference with business.

THE HAND OF IRON IN THE GLOVE OF RUBBER.*

By ROBERT T. MORRIS, M.D.,

NEW YORK

In the Middle Ages there was an ogre on the other side of every hill.

People gradually overcame their fear of ogres, and began to get scared about witches.

After witches had been duly burned, surgeons were frightened about opening the peritoneal cavity. When I was a student, we were taught to have a chill whenever the subject was broached, and the textbooks described various ways for avoiding the grewsome mishap.

After ogres, witches, and normal peritoneum had been disposed of, we began to enjoy a fear of pus in the peritoneal cavity. Surgeons passed through the transition period of washing their hands after operation instead of before, and arrived at the stage of aseptic preparation of the hands. Then, in logical sequence, we began to wear rubber gloves, and employed them in intraperitoneal work, even though infection were already present. What do you think of that?

Charlemagne baptized a lot of Mohammedans and then laughed up his sleeve when he saw them gravely bowing to the East after that, for he knew that they were securely Christians. We put on rubber gloves and smiled at the thought of bacteria doing a thing to the patient after we had conscientiously tried to remove infection which could in fact be removed best by the patient himself. Worse than that, when we put on gloves for a boxing match with the patient's vitality, we rapidly placed him in an unfavorable position for self-defense. The use of rubber gloves made it necessary to use such long incisions that we could work by sight, and this lowered the patient's vitality.

Long incisions are employed for killing bears, and we chose for saving weak patients the methods which are in use for killing bears.

Rubber gloves led to slow work, and that further

* A paper read before the meeting of the Surgical Section of the New York Academy of Medicine, February 1, 1907.

reduced the natural resistance of patients. Tait without antiseptics or asepsis showed that his facile fingers could bring out better statistics than we can get with an iron-like hand in a glove of rubber. Tait was a thorn in the side for most of us. Nowadays we understand that he conserved the natural resistance of his patients, and turned the management of infections over to them, but in his day the only comfort that we could get was in the forlorn hope that he might be untruthful. Tait was a perennial insult to us, unless we could get even by making a retort.

Slow work means a longer period of anesthesia—a longer debauch with an intoxicant.

Have we not reached the stage of information where we can drop our fears of ogres, witches, normal peritoneums, and pus in the peritoneal cavity?

Do we not know that much of this pus is sterile, in spite of its odoriferous mercaptans and sulphur ethers, and that bacteria are chiefly at work in the tissues rather than in the pus? Is it not time for us to realize that we cannot get bacteria out of the tissues, but that the patient is finely equipped for attending to the work if we do not disable him ourselves?

Simple, quick work which merely turns the tide of battle between bacterium and phagocyte is what the patient needs when he calls us to his aid, and simple, quick work is not facilitated by the use of rubber gloves.

The patient with an infection under way is a factory. His chief business is the manufacture of opsonins for wounding bacteria, and phagocytes for disposing of them afterward. The hand of iron in the glove of rubber throws the belts from the wheels in this factory.

We must not forget that even in such a disease as appendicitis, with pus in the peritoneal cavity, very many patients recover without operation. How do they manage it? We know. We must not forget that we know how it is done, when we step in to improve upon nature's methods.

Let us not commit taxidermy upon valued citizens by stuffing them with gauze, or lower their natural physiological resistance with the kindly helpful hand reduced to second grade by a glove.

After the period of infection has passed, can we separate peritoneal adhesions in the best way by putting on a handicap, and allow the patient to escape with a mild attack of surgery? Not according to my observations.

There are places in which rubber gloves should be used. In opening an uninfected knee joint, for instance. The house staff at the hospital would transfer too many proliferating colonies of bacteria, if rubber gloves were not worn on rounds when dressings are changed.

In some outside work, as in hernia operations, where we work by sight anyway, rubber gloves will give the best statistics, unless the slower work allows more bacteria to fall in from the air than would be carried in by the hands. That last point is an important one. Among human faculties the sense of proportion ranks just above moral sense in value. Psychologists may not agree with me, but they do not agree with each other. It is discrimination that we need more than rubber gloves. The subject allows of pretty good classification in a general way.

Rubber gloves may be useful: (1) In cases in which there is no infection or other disease to call out the patient's natural resistance to infection. (2) Where dressings are to be changed for several patients in succession, or where the surgeon operates upon an uninfected patient shortly after operation upon an infected one. In the latter case, if the patient were to be consulted in the matter, he would probably ask to have his operation deferred until spring anyway. Rubber gloves are not needed—or worse than that: (1) Where infection is already under way, and the patient is calling out his own protection. (2) Where a disease like cancer has already called out such a degree of protection that the old-time war doctors could amputate a breast and get primary union under "well-waxed shoemaker's thread" that had been held in the mouth or over the ear while operation was in progress. (3) Where no infection or other disease is present, but where slow or extensive operating necessitated by ungainly gloves will allow more bacteria to fall into the wound than would be carried in by well-prepared bare hands.

The argument has been made that the surgeon should wear rubber gloves for his own protection. For whom are we working?

The coming generation of surgeons, brought up on rubber gloves, will not do the wizard-like work that was done by some of the older operators, excepting in instances where discrimination has been the rule, and where the fingers have been taught better tricks than the eye ever knew.

Our surgery is not different from vegetable surgery. For recreation I hybridize hickories. It became necessary to find an expert grafter. High and low, all over the country search was made. Horticulturists all said the same thing. "Hickories cannot be grafted. Millions of dollars a year would come to us if we could do that grafting." Finally I found a man in Massachusetts who could catch 25 per cent. of hickory grafts, and a man in Texas who could catch 90 per cent. of them. Both said that there was no trick about it at all. Nothing was needed but quick, neat work. Surgeons have to face precisely the same situation. A few will do with ease what most others say cannot be done at all. Rubber gloves will debar surgeons from doing some of the most expert work that lies within the range of their capabilities.

I have no confidence in any man who does not believe that his own country excels in everything, no matter where he lives. From that standpoint of patriotism I want to believe that America has the best surgeons in the whole wide world, and that we are to be the first to drop rubber gloves whenever pathology and mechanics teach that handicaps are not desirable.

Rubber gloves are pretty, but let us not put on these badges of inferiority for every entertainment. Let us not join with wars and epidemics in doing honor to the shade of Malthus.

616 Madison Avenue.

Arteriosclerosis.—Devoto says that in arteriosclerosis there is not an exact correspondence between the anatomical alterations and the clinical phenomena. He enumerates the causes that may produce the condition, and states that in defining the relation between arterial pressure and arteriosclerosis we should not omit those causes which favor the chronic renal lesions, hypertrophy of the thyroid, alterations of the respiratory organs, and those which result from insufficient food. From the point of view of therapeutic treatment, he says that the symptoms which show the existence of arteriosclerosis, such as modifications of pressure, etc., can be favorably affected by iodine and other chemical and physical means.—*La Riforma Medica.*

INTRAABDOMINAL ABSCESS DUE TO GONORRHEAL AND BACTERIUM COLI INFECTION COMPLICATING PREGNANCY; OPERATION WITH COMBINED VAGINAL AND ABDOMINAL DRAINAGE; RECOVERY.*

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Mrs. L. M., housewife, aged 18, married 6 months, was never pregnant before. Menstruation began at 12 years of age, regular every 28 days, lasting from 3 to 4 days, with slight pain. Last menstruation September 4. On December 4 there was a profuse hemorrhage, which the patient claimed was menstruation, lasting 10 days, accompanied with headache, loss of appetite, and sleeplessness. The patient always enjoyed good health until her marriage, which was in June. Four months later she became pregnant; she then complained of painful urination, burning discharge from the vagina, and abdominal tenderness accompanied with vomiting.

I was called in to see her after she had been lying in bed four weeks suffering with acute abdominal pain and occasional attacks of vomiting and constipation which had been treated with ice-bags and injections of morphine without avail; she now complained merely of anorexia and extreme weakness; no pain; temperature, 99°, pulse, 86.

The patient appeared anemic and had the general appearance of sepsis, although temperature and pulse were not elevated. External palpation revealed a mass which was felt about two inches above the umbilicus, extending downward into the pelvis, the lower border not being definable by external palpation.

Internal examination. Urethra normal, vagina soft and velvety to the touch, cervix and anterior vaginal wall very soft, uterus enlarged and anteflexed, about two finger breadths above the symphysis and markedly fixed. In the left hypochondriac region a mass was felt filling out the pelvic brim and connected with the uterus and drawing same upward. The diagnosis of a three months' uterine gestation, complicated by diffuse suppuration, was made: the cause of the suppuration we presumed to be left adnexal disease or that infection of an extrauterine sac had taken place. An immediate operation was advised, and the patient was taken to a private hospital and prepared for a vaginal and abdominal section.

On account of the height of the mass from the vaginal fornix there was a doubt whether we could reach the same by vaginal section, still an incision was made in Douglas' pouch with the expectation of reaching the mass this way, aided by external pressure. There were a great many intestinal adhesions, and in one spot the aspirator was thrust in but no pus was found. At this time the patient's condition became alarming, the pulse going up to 150. As I did not wish to prolong the operation, a hasty abdominal section was performed: on entering the peritoneal cavity the omentum, intestines, and uterus were found to be matted together and adherent to a sac containing a large amount of fluid. No line of cleavage could be found. In order to hasten the operation, on account of the precarious condition of the patient, the adhesions were not disturbed, gauze pads being inserted to shut off the general peritoneal cavity. The omentum was bluntly perforated, being torn through with the fingers, the sac was incised, and the pus mopped out with gauze sponges. On investigation the sac was found to be adherent to the intestines, there undoubtedly having been a rupture of a pus tube. It was then decided it would be impossible to extirpate the diseased sac *in toto*, therefore drainage was established through the pouch of Douglas, a large iodoform wick being introduced through the abdominal incision and brought down through the vagina. By this time the patient's condition was wretched, pulse 200, and she was in profound collapse; a transfusion of 1,500 c.c. saline solution was given in the left cephalic vein while the patient was on the table and she was hurried to bed, with the conclusion of all that she would not live longer than half an hour. The patient rallied, however, and about midnight appeared to be coming out of shock. Fearing intestinal obstruction, we attempted to establish catharsis, but large doses of calomel and salines were ineffectual; the abdomen began to swell and symptoms of intestinal obstruction, vomiting, and tympanites began to manifest themselves; large doses of eserine also were given without avail. Under aseptic precautions the gauze was loosened and a digital exploration was made which revealed a kink in the intestines; this was released by the finger, and so great was the rush of fluid through the gut that it was feared that it had ruptured; the tympanites slowly disappeared, and within an hour the patient passed gas and during the night had an evacuation; from this time she began to improve; the gauze in the abdominal wound was changed on the fifth day.

On the third day she began to have uterine contractions accompanied by much pain in the abdomen and during the night she was delivered of a three-months' fetus, but the placenta did not come away; the fetus was removed and the cord was ligated, returned into the vagina, and allowed to remain in order that it might separate of itself, this course being pursued on account of the extreme weakness of the patient; also I did not desire to disturb the relations of the parts unless compelled to by some urgent indication. On the fifth day the patient had a hemorrhage from the uterus which necessitated the removal of the placenta; this was a very difficult task to perform, as it was impossible to make bimanual pressure upon the uterus. The only method that could be employed was fixation of the uterus with a vulsellum forceps and extraction of the placenta with forceps, taking it away piecemeal, followed by curettage and packing of the uterus to prevent any further loss of blood. The subsequent course of the case is explained by the temperature chart: the pulse remained at the level of 120, temperature 102°, and the patient gave promise of approaching convalescence, which was somewhat retarded by the abdominal Mikulicz dressing, which was changed from time to time; the gauze in the cul-de-sac was slowly removed and a new pack introduced, which was changed every five days; the bacteriological examination of pus showed gonococcus and the colon bacillus.

The case is unique in that it lacked the usual constitutional symptoms of any pus formation, and the apparent local signs were only those of uterine gestation complicated by the gastrointestinal symptoms of pregnancy. In the technique employed attention is called to the fact that it is wiser not to separate the adhesions over a large area when we fear pus, but to proceed cautiously with a blunt dissection through the omentum until the sac is reached, emptying same, and then establishing the relations to the adjacent structure.

*Read at a meeting of the Harlem Medical Association, New York City.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE PRESENT STATUS OF OPSONINS.

FEW of the medical journals of recent issue have appeared without containing either an original contribution upon, or a reference to the opsonic work of Wright and Douglas. Most of these are reports of favorable results obtained in treatment by the methods of Wright, and, as such, are bound to influence the practitioner, breeding in the minds of those who are too busy with the toil of daily routine to follow the details of scientific research an impression that the panacea for all infectious ills has been revealed, and the road opened toward a revolution of the science of immunization.

It is natural and altogether beneficial that every new scientific announcement should be followed, at first, by an enthusiasm which, in therapeutic application and prophecy, may far outstrip the final actual gain. Thorough scientific comprehension follows more slowly, and there is much statistical material gathered by the enthusiastic therapeutists who by their successes and failures, honestly observed, aid much in the final calculation of the net profit. The problems involved in the application of Wright's principles to treatment have not reached the stage at which this final calculation can be made; but it is well at the present time to consider to what extent Wright's important discovery has become the legitimate property of the clinician, and how much of it is still in that stage of uncertainty during which only patient and conscientious research of trained laboratory workers can hope to decide finally upon its actual therapeutic value.

The problems of phagocytosis have long been the subject of much laborious investigation by the French bacteriologists, notably Metchnikoff. The action of the blood serum in the process of phagocytosis has been conceived by Metchnikoff and his pupils, by Bordet, Denys, Mesnil, Besredon, and others, as rather a stimulation of the phagocytic cell than as an influence exerted upon the ingested bacteria or other substances. The knowledge brought out by the studies of Wright and Douglas, and those carried on independently, though somewhat later, by Neufeld and Rimpau, show us that this phagocytic power bestowed by the serum is set in motion by an action upon the ingested objects rather than by the changes wrought upon the leucocytes themselves. That the substance which brings about this loss of resistance to phagocytosis—the "opsonin"—is probably independent of agglutinin, complement, and the various other substances present in normal and immune sera previously described, must, in the light of our present knowledge, as based on the work of Hektoen and others, be assumed. Thus a far-reaching new truth has entered into our knowledge of the phagocytic process, a truth the recognition of which in itself is a great achievement, and which, by its own weight and indirectly by the great stimulus it has given to research into the phagocytic elements of immunization, may lead to still greater results.

As to the present therapeutic application of this new principle, so much is being said by enthusiastic workers that it is hardly necessary to outline what is going on. Active immunization with minute dosage of dead organisms is the principle of Wright's work. Active artificial immunization in itself is an old matter, and is obviously limited to subacute and chronic processes. The mistakes of earlier workers in this field undoubtedly to a large extent lay in overdosage and ill-judged intervals, and others, without knowledge of opsonins, have been working toward the correction of these errors. This has been the tendency in many sanatoria for tuberculosis, both here and in Europe, and the book of Denys, published in Louvain in 1904, is based upon this principle of active immunization by small dosage of his bouillon filtré of cultures of the tubercle bacillus. But all these observers have relied upon purely clinical data in their judgment of the reaction to the treatment and for standards of dosage and time of repetition. Wright and his disciples, on the other hand, are basing their judgment in these matters upon the rises and falls of the opsonic indices of the patient's serum.

It undoubtedly would seem at first sight that such actually visible changes in the specific phagocytic power of a patient would be more delicate than the rough data of clinical observation of temperature, physical signs, and general condition, and even the sceptic will acknowledge that the determination of the opsonic index in a given case may, together with clinical data, be of value. But to obtain this systematically entails much time, work, and expense, and it is but fair to inquire whether this addition to the labor of treatment will justify itself by shedding a corresponding amount of light upon the condition of the patient's resistance. This question resolves itself into an examination of the accuracy of opsonic estimations.

The details of a technique which is both intricate and delicate cannot be gone into here; suffice it to say that the mere mechanical labor is a matter requiring much skill, in which minute variations of eye and hand may lead to considerable errors in the result. The opsonic index is calculated by a comparison with an arbitrarily designated "normal," and these "normals" so-called are subject to great variations which, as the numerators or denominators of the final fraction, thus add another and purely arbitrary error to the result. The leucocytes used for these estimations are taken from an indifferent source, usually the finger of the worker himself; and we know at present very little of the variations in the phagocytic activity of various leucocytes. Add to these things the consideration that we know little or nothing of the modifying influences exerted upon the phagocytosis by other immune bodies undoubtedly present in the serum, and it does not seem extravagant to assume for opsonic estimations an error of at least from 20 to 30 per cent. Whether this

error can be diminished sufficiently to make extended use of opsonic estimations by Wright's technique of real value is a matter which only the future can decide, but at present it seems unlikely when we consider how much of it is due to entirely uncontrollable influences rather than to imperfections of technique. Furthermore, it will have to be shown that in estimating a subject's immunity we are justified in making the matter of phagocytosis the sole standard of judgment with disregard of the various other immune bodies in the serum. The situation is in much analogous to that which existed when the degree of agglutination in typhoid fever was supposed to be entirely parallel with the degree of immunity.

Much work remains to be done before the therapeutic value of opsonins can be defined. Withal, it must not be forgotten that we are really dealing with two entirely separate questions when we discuss Wright's work on opsonins and his therapeutic efforts with specific bacterial emulsions, and even should the former investigations be shown to be of purely academic interest the revival of efforts toward active immunization inspired by the latter may still prove of inestimable practical value.

THE GAMETOID THEORY OF CANCER.

At a recent meeting of the Liverpool Medical Institution (*Lancet*, February 16, 1907) C. E. Walker presented a paper on this subject. He explained that as all living matter existed only in the form of cells, all problems of living phenomena must ultimately be cell problems. As all multicellular organisms, whether plants or animals, originated from a single cell (the fertilized ovum), the potentiality of all the cells subsequently produced from it was contained in the fertilized ovum. The author noted that the reduction in the number of chromosomes to one-half of the number found in the cells forming the body tissues, observed as occurring in sexual cells, might be compared with a similar phenomenon occurring in the cells making up malignant growths.

Over ten years ago various observers described the occurrence of division figures in cancer which possessed all the peculiar characteristics of the heterotype divisions; that is, the form of division in which the number of chromosomes was reduced to one-half of the normal number found in the body cells. A diagram was exhibited showing the results of an indiscriminate counting of the chromosomes in the dividing cells of malignant growths. This diagram when compared with one showing the results of a similar counting of the chromosomes in the cells of a testis proved that the relative proportions of cells containing the full and exactly half the normal numbers of chromosomes was almost identical in malignant growths and in testes. It was shown that "Plimmer's bodies," so frequently described by various authors as being the parasite of cancer, were exactly similar in origin, in mode of development, and in structure to the archoplasmic vesicles found in the spermatids of certain animals, including all mammals, but never in any other normal cells of the body. Thus there was another direct parallel between the cells of malignant growths and those of normal reproductive tissue. Emphasis was laid upon the fact that cells that had entered upon the reproductive phase lived normally as parasites upon the parent organism, and that all such cells, whether in animals or in plants, were out of coordination with the rest of the body. A true fusion between leucocytes and tissue cells was described as being one of the earliest phenomena in the commencement of malignant growths. Reduction in the number of chromosomes to one-half of the somatic (body) number was described as taking place normally among the leucocytes, thus making it probable that certain generations of leucocytes went through a sexual phase.

Basing his views on the foregoing facts, Mr. Walker pointed out that the malignancy of certain tumors might be due to the cells forming there entering upon a sexual phase, and there living as parasites upon the parent organism, as such cells always did. On this supposition it would be necessary to seek the cause or causes which induced this change. This left the leucocytic fusion in the position of a mere coincidence of no material importance. On the other hand, this fusion itself would equally account for the peculiar qualities possessed by the cells of malignant growths. They would necessarily be out of coordination with the parent organism, and would live as parasites upon it. Moreover, that some of them should enter upon the sexual phase was exactly what would be likely to happen. Here it would be necessary to find out under what conditions the fusion between the leucocytes and tissue cells was possible. It might be due to some change in either or both of the two kinds of cells.

THE BIER TREATMENT OF MASTITIS.

The beneficent action of Bier's suction treatment of inflammatory processes has already been recorded many times. The possibilities of the method in skilled hands appear to be very great, but it is also certain that when improperly used the results are likely to be discouraging and even directly injurious. Hartman (*Münchener medizinische Wochenschrift*, February 5, 1907) in discussing the suction treatment of mastitis refers to a reported case in which on the first application of the glass bell the pain caused was so intense that the patient fainted. The instrument used had a diameter of only 5 cm., whereas the inflamed area was as large as the palm of the hand, and had a fluctuating abscess in its center. Naturally the pain caused by the pressure over this acutely sensitive spot was extreme, whereas when correctly applied the suction gives marked relief from pain. Hartman says that the three commonest errors in the use of the suction treatment are the application of bells that are too small, the omission of early incisions, and discontinuing the suction too soon. In treating mastitis the diameter of the bell should never be less than 10 cm., and frequently one having a diameter of 15 cm. may be required. If there is fluctuation a very short incision under ethyl chloride anesthesia should be made. Hartman recommends daily sessions in which suction is applied four or five times during a space of five minutes, with an interval of from three to five minutes between the applications of the instrument. At the close of each session milk is drawn from the affected gland by means of a small bell placed over the nipple, and a wet dressing of aluminum acetate is applied. It is

usually unnecessary to leave any drainage material in the wound, though the insertion of a small tube may facilitate the aspiration of discharge while the suction is being applied. Hartman reports in detail the histories of twelve cases of mastitis in which this method was applied, and he considers that it represents a decided advance in the treatment. Pain and fever are lessened, and early cases are aborted in from three to five days without any incision. If abscess formation has commenced small incisions effect a cure in from four to seven days, though the average time is sixteen days. The cosmetic and functional results are excellent, and surpass those obtained by any of the older forms of treatment. In dealing with the subacute indurated forms of mastitis which do not go on to suppuration, the passive hyperemia produced by the suction treatment is less satisfactory, and the use of wet dressings followed later by massage is in many cases far preferable.

The Early Diagnosis of Lead Poisoning.

While lead poisoning in its more advanced stages is ordinarily accompanied by so characteristic a symptom complex as to make its diagnosis a matter of no very great difficulty, in early cases the conditions may be extremely hard to recognize. One of the most reliable evidences of plumbism, the detection of the metal in the urine, is unfortunately scarcely within the scope of the practitioner's laboratory, owing to the somewhat complicated and very time-consuming chemical manipulations it requires. Even in skilled hands negative results are common, and Frey (*Deutsche medizinische Wochenschrift*, February 7, 1907) states that Seiffert in the course of seventy-three analyses of the urine of tin refiners exhibiting the most varied symptoms of intoxication discovered lead in only 15.6 per cent. The chemical investigation of the urine therefore does not furnish a satisfactory means of diagnosis for mild or early cases. The granular degeneration of the red blood cells described by Grawitz some years ago seems to be of greater assistance, however. It consists in the presence in certain of the red blood corpuscles of minute particles having a strong affinity for basophilic dyes, so that in a blood preparation stained with one of the methylene blue solutions the cells in question present varying numbers of minute bluish points. Frey, also working among tin miners and refiners, arrived at the conclusion that in this peculiarity of the erythrocytes a most useful diagnostic indication of incipient blood poisoning was to be found. The other conditions in which it is likely to occur, such as cancer, pernicious anemia, intestinal putrefaction, and sepsis, can usually be excluded without difficulty, but the possibility of their occurrence must be kept in mind. The value of routine blood examinations with this appearance in view is very great, as in this way individuals may be excluded from the more dangerous forms of work until the disappearance of the basophilic granulation indicates that for the time being the danger of lead poisoning is over. As the granules in the red cells usually appear before the other symptoms have become characteristic, if the blood of those engaged in occupations that involve danger of plumbism is watched carefully the severer forms of intoxication can very often be forestalled. There is also another and very useful application of this discovery in that by frequent blood examinations one may very accurately estimate the degree of success of any therapeutic measures that may have been instituted.

Electricity in the Treatment of Heart Disease.

Comparatively little attention seems to have been paid to the use of electricity in its various forms in the treatment of cardiac affections, but in a recent article an Italian writer, Galli (*Gazzetta degli Ospedali*, No. 153, 1906) refers to the value of this measure as an accessory to other methods, including drugs and physical agents, which are commonly employed. There has existed more or less of a prejudice against electricity, because animal experiments have shown that faradization of the heart produces diminished heart action, incomplete contraction of the ventricles, reduction of the blood pressure, and finally paralysis of the organ. These results seem to have been borne out by observations made in the human subject, although this opinion has been somewhat revised by a further study of the effects of the galvanic, high frequency, and alternating forms of current. The galvanic current, for example, was used by Galli in the form of complete and local baths, which correspond in their effects to the carbonic-acid baths and may be substituted for the latter in certain cases. The alternating-current baths may be employed in those cases where compensatory disturbances of a severe type exist which are constant even without exertion on the part of the patient. The faradic baths, however, seem to have a better effect in anemic nervous patients who are afflicted with diseases of the vessel walls and also present renal symptoms. In otherwise strong individuals whose vessels and kidneys are in good condition, the sinusoidal current seems preferable and quite harmless. An interesting fact about both of these currents is that they appear to possess the property not only of reducing abnormally high blood pressure, but also of bringing back abnormally low pressure to the normal condition in a manner similar to that accomplished by digitalis. A general application of the high-frequency current reduces, and the local application of the same elevates, blood pressure. Another effect which is well marked in the use of the electric currents for the purposes noted is the favorable action on the various states of physical and psychical depression which are prone to occur during the course of chronic heart diseases.

The Serum Treatment of Dysentery.

Since Shiga's communication on this subject in 1898 numerous other observers have published reports on the treatment of dysentery by means of antitoxic serums. Although the conditions under which the individual observations were made have varied in more or less important particulars, such as the severity of the cases and the manner of obtaining the serum, on the whole the conclusions of these experimentors have been favorable to the method. One of the most recent papers on this subject is that of Skschivan and Stefansky (*Berliner klinische Wochenschrift*, February 11, 1907), who in the summer months of the preceding year treated by means of a serum fifteen cases of dysentery occurring in Odessa. The serum used was antitoxic, and had been obtained by a year's immunization of a horse with injections of the filtrate from cultures of the Shiga bacillus. The patients were between the ages of nineteen and forty-six years, and in seven the disease was of severe type, while in the others it was of moderate gravity. Every effort was made to render the effect obtained by the serum as conclusive as possible, and practically no other reme-

dial measures of any sort, except, of course, the rest in bed and suitable diet, were resorted to. The effect of the injections was manifest within two or three days, a distinct diminution in the progress of the disease, as shown by the decrease of pain and tenesmus, and reduction in the number of movements and improvement in their character being promptly noticed. In three to four days the stools had become diarrheal, and usually soon returned to their normal character. The authors therefore ascribe a very distinct and active remedial quality to the serum, and recommend that its use be more widely resorted to, especially in dealing with dysentery in children. Complications due to the serum, such as erythema and joint pains, were observed in two cases, but apparently were not of a serious character.

The Passage of Mercury from Mother to Fetus.

The question of the transmission of drugs and other substances from mother to fetus through the medium of the placental circulation continues to hold the attention of investigators on account of its great practical interest and value. It has been variously claimed that mercury among other things is able to pass through the placenta and be distributed through the fetal organs in a manner similar to that which takes place in the adult. Conti and Zuccola (*Gazzetta degli Ospedali*, No. 153, 1906) believe, as the result of their recent experiments, that mercury as such cannot pass through the placenta in the manner indicated, and that the effect which has been observed in the fetus is brought about in a different manner. In their tests they made use of a saturated solution of sulphureted hydrogen which had been acidified with nitric acid, and also examined the tissues microscopically. The experimental subjects included not only human fetuses, but also those of guinea pigs and rabbits which had been poisoned with bichloride of mercury injections. The three human fetuses were the products of syphilitic mothers who were undergoing mercurial treatment for their disease. In the experimental animals mercury in the form of a sulphate could readily enough be demonstrated in the various organs by the test indicated, but no such result was obtained in those of the offspring. The meconium of the human fetuses gave rise to a positive reaction, but this could not be confirmed by a later examination of the intestinal tract. The writers believe that in previous investigations the demonstration of the mercury in the fetal tissue was based upon imperfect and false technique. No definite proof has been brought forward of the actual presence of the drug in the fetal organs, and the therapeutic effect which has been observed may be explained, according to Conti and Zuccola, by the fact that the mercury has caused the development in the cells of the maternal organism of substances which have the property of exerting a neutralizing influence on the pathogenic factors in the fetal tissues.

The Relation of the Stomach to Labor Pains.

The fact has long been appreciated that a certain nervous relation exists between the uterus and the stomach which manifests itself in a variety of reflex phenomena. This is well shown during the course of pregnancy, not only the early months, but, as demonstrated in a recent study by Kehrer in the *Beiträge für Geburtshülfe und Gynäkologie*, Vol. 10, No. 2, up to the time of labor itself. Overdistention of the stomach or a gastric catarrh seems to exert a well-marked inhibitory effect on the labor pains, prolonging the periods of cervical dilatation and expulsion and thus leading to exhaustion of the mother and possible asphyxiation of the fetus. Spontaneous or induced vomiting will change this condition at once, and, according to Kehrer, may render operative delivery in certain cases unnecessary. If the ordinary means of inducing vomiting are not successful, the writer advises gastric lavage, although the effect of this is less certain. Another interesting point which is brought out in this paper is the fact that labor pains rarely come on during the afternoon because the stomach is usually filled at this time or digestion of its contents is going on, this condition acting as an inhibitory influence on the production of the labor pains.

News of the Week.

What a Medical Society Should Be.—Dr. Joseph Decatur Bryant, ex-President of the Medical Society of the State of New York, but President-elect of the American Medical Association, is apparently opposed to boss rule in medical organizations. In the course of his Presidential address, delivered at the recent meeting of the State Society, he remarked: "It [the State organization] is a free government in the complete sense of the expression, one in which the humblest members of the most cheerless stations of the State have equal privileges with those of exalted station in the midst of wealth and power; one in which the officers are your servants and not your masters, unless *you* so will it to be, and from whom you have the right to demand at the proper time, and in a suitable manner, a complete accounting of the status of their respective stewardships, and which, when wisely required, they have no right to decline. And in all other respects, your rights and privileges cannot be overshadowed by those of another unless you, yourselves, lend aid to the eclipse."

Lieutenant Carroll's Promotion.—The Senate bill raising Lieut. James Carroll of the Army Medical Corps to the rank of Major, in recognition of his services to science in the study of yellow fever, passed the House last week. At a meeting of the Nebraska Academy of Medicine recently held in Lincoln a committee of five was appointed to make an effort to secure a Nobel prize for Dr. Carroll. The members of the committee are Drs. S. R. Towne, A. S. von Mansfelde, H. B. F. Ward, R. H. Wolcott, and H. W. Orr.

State Pure Food Bill.—A Pure Food bill, which contemplates cooperation between the State and the Federal government in the prosecution of violations, and which in most of its details follows out the provisions of the Federal statute on the subject, has been introduced in the New York State Assembly. The bill takes from health officers most of their duties relative to detection of violations of the health law so far as foodstuffs are concerned, and transfers them to the State Commissioner of Agriculture.

The Milk Question.—At a meeting held last week in the United Charities Building, the New York milk committee expressed its opposition to the general municipal pasteurization of the entire milk supply, but favored the pasteurization of milk in feeding bottles for infants as the best means for reducing infant mortality in summer. Special emphasis was laid on the importance of establishing infants' milk depots before next June, for which the cooperation of private philanthropy and of the city authorities should be sought. A committee was also

appointed to seek to secure the cooperation of the State Board of Health and of the Department of Agriculture in relation to the destruction of tuberculous cattle, and greater activity of local boards of health in reference to reporting cases of communicable diseases in persons on farms or handling milk. The same committee was instructed also to oppose the ordinance now before the Aldermanic committee and the Reece bill at Albany. A letter from Commissioner Darlington was read, in which he stated that he was opposed only to compulsory pasteurization of all the city milk, but not to requiring the pasteurization of such milk as could not otherwise pass inspection. The meeting of the Section on Public Health of the New York Academy of Medicine on March 12 will be devoted to a discussion of the city milk supply. The following papers will be presented: "Milk as a Carrier of Infection," by Charles Harrington, M.D., Secretary Massachusetts State Board of Health; "Pasteurization: The Advantages and Disadvantages to the Consumer," by Rowland G. Freeman, M.D., of New York; "Pasteurization: The Advantages and Disadvantages to the Municipality," by Joseph Roby, M.D., Rochester, N. Y., Deputy Health Officer; "Current Misstatements and Fallacies Regarding the Milk and Milk Supply of New York City," by William H. Park, M.D., of New York. The discussion will be continued by Drs. L. Emmett Holt, Walter Bensel, and Linsly R. Williams.

Hudson River Ice.—Steps are being taken by the Merchants' Association's Committee on Pollution, to prevent further harvesting of ice in the Hudson River near the mouths of Rondout and Catskill Creeks. This section of the Hudson River is regarded as a particularly dangerous one, as the nearby village of Catskill is suffering from a typhoid fever epidemic, and ice is being cut from sections of the river which are practically at the mouths of both Rondout and Catskill Creeks.

Suicide Bureau in New York.—At the Salvation Army bureau for preventing suicide, organized last week for the purpose of giving good advice and, where needed, material help to those contemplating self destruction, eighteen would-be suicides applied on the first two days. Similar bureaus have been in successful operation in London and St. Louis for some time, and others are to be started in Boston, Cleveland, Chicago, Atlanta, Kansas City, Minneapolis, and San Francisco. One girl who applied to the bureau was not thinking of committing suicide, but needed skin to be used for skin-grafting a deep wound in her father's neck. The *Sun* states that when the request was made known, in a short time there were thirty volunteers among the young men of the training and industrial school ready to part with a portion of their cuticle.

Work of the Children's Hospital Society of Chicago.—This society in its existence of four years has done a far-reaching work, and has been the means of improving the health and saving the lives of many babies in the crowded portions of the city. The society's first work was to found a Milk Commission, and it has distributed 1,043,175 bottles of the cleanest, purest and best milk that any cow could give, it is said, which have been of untold value to sick and convalescent infants. The latest undertaking of the society is to aid in getting the State Legislature to appropriate money for the establishment of a State epileptic colony. For this purpose, under the auspices of the society, Dr. W. C. Spratling, superintendent of Craig Colony for Epileptics, New York, recently gave an illustrated lecture in the Senate Chamber at Springfield, before the members of the Legislature. It is claimed the colony as proposed will be almost self-supporting. The State Board of Charities has asked the Legislature for $365,000 with which to found an epileptic colony.

Contagious Diseases in Chicago.—According to a recent report of the Chief Medical Inspector of the Chicago Health Department, Dr. Heman Spalding, cases of diphtheria, measles, and scarlet fever show a decided and substantial reduction in number. This reduction has been steady and rapid, dating from the week the new medical inspectors were put to work. This work speaks for itself, and nothing can be said that emphasizes the necessity of a permanent medical inspection corps equal to the results of these few weeks of medical inspection of schools.

Typhoid Fever on the "Connecticut."—The battleship *Connecticut* reached this port last week from Guantanamo with between thirty and forty of her crew ill with typhoid. The first cases appeared early in February, and when the severity of the epidemic became apparent, the vessel was ordered north in order that the patients might be transferred to the Naval Hospital at the Brooklyn Navy Yard. The origin of the infection has not been discovered. It is stated that the disease is not of a severe type and that none of the men are in a serious condition.

Plague in East Africa.—The German papers report that two cases of plague have occurred at Muanza, German East Africa, and also that one case of plague was discovered on a British steamer which arrived recently at Muanza. The colonial authorities are making strenuous efforts to prevent the spread of the disease.

Experimenter Contracts Plague.—A cable despatch from Kronstadt states that Dr. Schreiber, surgeon of the Second Siberian Regiment, who had been experimenting with living organisms in connection with researches on bubonic plague, has contracted the disease and has been isolated in the fort where he carried on his work.

Overcrowding at St. Vincent's Hospital.—Ordinarily the accommodations in this hospital serve for the reception of about 400 patients, but lately, owing to a great increase in applicants of all classes, there have been 600 patients at a time in the hospital. Cots have been put up in every available spot, and both the house staff and nursing corps are severely overworked. An unusually large proportion of the cases in the hospital are of pneumonia.

Street Spitters Arrested.—Ten persons were arrested on one day last week by members of the Sanitary Squad for spitting in the streets. All the arrests were made on Fifth avenue, between Fourteenth and Sixteenth streets. After arraignment in the Jefferson Market Court, the prisoners were discharged with a warning.

The State Registration of Nurses.—The Pennsylvania State Committee on Nursing, which has for its object the regulation and advancement of nursing and the fostering of a proper relation of nurses to the medical profession and the community, has issued a statement relative to the bill now before the Pennsylvania State Legislature providing for the registration of nurses. The enactment of such a measure is deprecated on the ground that State law for the registration of nurses is not only unnecessary, but is positively harmful. The tendency of such a law is to lead the average nurse to assume too much, and to lessen her usefulness. It is

further stated that such a law would be a menace to the community, and that under its provisions the presence of nurses in the sick room might be a positive danger. The maintenance of a uniform scale of charges of $25 or $30 a week would also, it is claimed, result in detriment to the mass of the people who cannot afford to pay such rates. The ultramedical training given nurses in many institutions is also criticised.

Hospital Transfer Bill Passed.—The State Senate last week passed Senator Sohmer's bill making it a misdemeanor to transfer patients in a critical condition from one hospital to another. The bill also compels superintendents of New York city hospitals to admit all patients brought to them if they have room and the patients are not suffering from contagious diseases.

The Kings County Grand Jury for February has adopted a resolution calling on the Grand Jury for March to look into conditions in the Brooklyn Hospital, alleging that the patients in that institution do not receive proper attention from the orderlies unless they bestow gratuities liberally. The superintendent of the hospital has denied that any such condition existed.

Misericordia Hospital to be Enlarged.—Plans have been filed for a $125,000 addition to the Misericordia Hospital at Avenue A and Eighty-sixth street, conducted by the Sisters of Misericordia. A five and six-story extension is to be added, with a frontage of 123 feet and a depth of 54 feet, having a façade of brick and ornamental stone. Part of the addition will be fitted as a home for the sisters, with a chapel attached. The building will also have a roof garden.

For a New Dispensary.—The recently organized Brownsville Hebrew Dispensary Society will hold a public meeting on March 18 to appeal to the residents of Queens County for the establishment of a dispensary in that section because of the large number of poor persons living in the district.

Tuberculosis Camp in Plainfield.—The tuberculosis committee of the Plainfield Clinical Society has formed a permanent organization and decided to establish a tuberculosis camp in Plainfield for the outdoor treatment of consumptives.

A Chair of Hydrotherapy at Columbia.—At a meeting of the Trustees of Columbia University on Monday of this week, it was voted to establish a chair of hydrotherapy at the College of Physicians and Surgeons. Funds for this purpose, it was stated, will be provided by an anonymous donor.

Dr. Doty's Appointment Confirmed.—The appointment of Dr. Alvah H. Doty as Health Officer of the Port of New York was confirmed by the Senate on February 28.

Dr. Samuel G. Dixon of Ardmore, President of the Philadelphia Academy of the Natural Sciences, has been reappointed, by Governor Sturat, State Commissioner of Health of Pennsylvania.

Dr. Henry Heiman has been elected adjunct professor in the department of pediatrics of the New York Polyclinic.

Dr. Emmet P. North of St. Louis has been appointed to fill the vacancy made by the death of Dr. A. V. S. Brokaw, chief surgeon of the United Street Railways Company of that city. He will be called the chief medical director, and has appointed a corps of assistants located in various parts of the city. Dr. North has served in the City Hospital, the Missouri Pacific Railroad Hospital, and the South Side Dispensary, and has for some time been a division surgeon for the United Railways Company.

The Interlude of Cancer.—In the article with this title by Dr. Beard of Edinburgh, in the MEDICAL RECORD of February 2, a misprint occurs in the first column, in which Freiburg, Baden, was made to read Freiburg, Berlin. On page 174, under *Embryomata*, the last sentence begins: They are now endowed, etc. For "now," one should read "not."

Against Vivisection.—A bill has been introduced into the Pennsylvania Legislature making it unlawful to vivisect or experiment on any living animal for any purpose, scientific or otherwise, and fixing as a penalty a fine of from $100 to $500, or imprisonment for from 30 to 60 days, or both.

The Society of Tropical Medicine, which has existed for a few years, and is especially active in Philadelphia, will hold its first meeting in New York on March 29, 1907, at 8:30 P.M., at the Academy of Medicine.

Association of American Medical Colleges.—The next annual meeting of this association will be held in Washington, D. C., May 6, the day before the opening session of the American Congress of Physicians. The Hotel Raleigh is to be used as headquarters.

The Harvey Society Lectures.—The tenth lecture in this course will be given at the New York Academy of Medicine on Saturday, March 9, at 8:30 P.M., by Dr. Friedrich Müller, Professor of Medicine at the University of Munich, Germany. Subject: "Neuroses of the Heart." This is the last lecture of the present year's series.

The Lisbon Congress.—The Portuguese members of the Fifteenth International Medical Congress, held last year, have presented Professor Miguel Bombarda with a gold medal and an address expressing their appreciation of his services as organizing secretary of the congress.

Statistics Relating to School Children.—The figures of a still unfinished census being taken in this city under the direction of the State Department of Education show that at least 20,000 children of the proper age are not attending school, as is required by the compulsory education law. The census, taken by the police in October, November, and December, includes all persons between four and eighteen years of age in the greater city. Of these, 4,371 are working illegally; 4,787 are kept at home illegally; 294 are truants; 8,402 are not attending evening school, as required, and 1,449 are physically unable to attend school. The actual total of non-attendants found to date is 19,303.

The Late Dr. Julia W. Russell.—The following resolutions have been adopted by the Women's Medical Association of New York City: *Resolved*, That it is with a deep sense of personal and professional loss that we record the death of Dr. Julia Wallace Russell. *Resolved*, That we her friends and fellow-workers bear testimony to her high character and useful life. *Resolved*, That we express our appreciation of the honor she did our profession as a practitioner and as the founder of a hospital for women and children. *Resolved*, That a copy of these resolutions be sent to her family with an expression of our sympathy with them in their great bereavement. *Resolved*, That these resolutions be recorded in the minutes and be published in the medical journals. (Signed) Sarah J. McNutt, M.D., Mary D. Hussey, M.D., Committee.

The Late Professor Herman Cohn of Breslau, well known as an ophthalmologist, bequeathed the sum of 10,000 marks to each of the universities of

Heidelberg, Tübingen, and Breslau, the income to be used for prizes for research in ophthalmology.

Obituary Notes.—Dr. Frederick G. Merrill of this city died on February 24 at the home of his brother at Skowhegan, Me., at the age of fifty-two years. Dr. Merrill was born in Harmony, Me., and, after graduating from Bellevue Hospital Medical School in 1879, began practice in this city. He was for some time on the staff of the Trinity corporation.

Dr. John G. Keith of Leadville, Col., died on February 16 in St. Louis, at the age of sixty-five years. Dr. Keith was formerly a resident of St. Louis, but for eighteen years had practised in Leadville. He was a veteran of the Civil War.

Dr. Herbert B. Williams of Gladys, Va., died on February 20 of typhoid fever, at the age of twenty-nine years. He is survived by his brother, Dr. Walter Williams of Brookneal.

Dr. L. W. Bliss of Saginaw, Mich., died suddenly of heart failure on February 20 in San Antonio, Tex. Dr. Bliss was born in Madison County, N. Y., in 1836, and, after serving through the Civil War as surgeon of the Tenth New York Cavalry, settled in Saginaw in 1866. He was prominent in the city's public affairs, and was Mayor of Saginaw for three years. In 1891 he was president of the State Medical Society.

Dr. W. J. Kendall of Upperville, Va., died on February 20 of pneumonia after an illness of a week. He was forty-five years of age, and was a graduate of the Virginia Polytechnic Institute and the Baltimore Medical College.

Dr. Joseph A. Loeb of Stamford, Conn., died of typhoid fever on February 24 after an illness of three weeks. Dr. Loeb was graduated from the Yale Medical School in 1902, and had practised for a time in New Haven.

Dr. Makel A. Southworth of San José, Cal., died on February 16 at Wright's Station. Dr. Southworth was a native of Herkimer, N. Y., and had been a resident of San José since 1893. He had been county health officer and president of the Board of Pension Examiners. During the Civil War he served as a surgeon, and for a time had charge of the yellow fever quarantine station at New Orleans.

Obituary.

GEORGE BINGHAM FOWLER, M.D.

NEW YORK.

Dr. George B. Fowler died at his residence in this city, on March 6, from gastric disease, at the age of sixty years. He was born in Montgomery, Ala., in 1847, and was the only son of a physician, Dr. Edmund Fowler, of that place. He was sent to school in Westfield, Mass., and later was graduated from the "Free Academy," now called the College of the City of New York. He studied medicine at the College of Physicians and Surgeons in this city, obtaining his degree therefrom in 1871. His hospital experience was gained as an interne at Bellevue. He was for a number of years after graduation associated with the teaching staff of the institution, first as curator of the museum and then as instructor in physiology. For a time he was an adjunct professor at the New York Polyclinic, and later was called to a professorship of clinical medicine at the New York Post-Graduate School and Hospital. In 1895 he was appointed Health Commissioner of the city of New York by Mayor Strong, and Commissioner of the State Board of Health by Governor Morton. He was for two terms president of the Medical Society of the county of New York, and helped establish the Tenement House Commission in this city. He was associate editor of the *American Journal of Obstetrics* from 1880 to 1886, and he was one of the founders of the *Dietetic Gazette*. He was a member of the County and State Societies, of the Academy of Medicine, and of the American Therapeutic Society, and was, at the time of his death, consulting physician to the Bellevue and the French Hospitals.

SIR WILLIAM HINGSTON, M.D.

MONTREAL.

Sir William Hingston, M.D., one of Canada's most distinguished physicians and philanthropists, died suddenly on February 19 at his home in Montreal. He was born near Huntingdon, Que., January 29, 1829, and was educated at the Montreal College, receiving his medical degree from McGill University. He completed his medical training in the University of Edinburgh, and on his return to Montreal in 1853 began to practise in that city. He speedily rose to prominence, and for many years was the leading surgeon of Montreal. He had occupied numerous official positions, among them that of governor of the College of Physicians and Surgeons of Lower Canada, of Mayor of Montreal, and of President of the Medico-Chirurgical Society of Montreal. During his mayoralty he organized the local and provincial Board of Health, and in 1895 was knighted for distinguished medical service. He was a fluent writer, and, in addition to many journal articles, wrote a work on the climate of Canada and its relations to life and health, which is considered one of the best on the subject. He was a member of the Royal College of Surgeons, Edinburgh, and had received many honorary degrees and titles from universities and medical associations in this country and Europe.

Correspondence.

THE SCIENTIFIC CRITERION OF A MALIGNANT TUMOR AND THE NATURE OF JENSEN'S MOUSE-TUMOR.

To the Editor of the Medical Record:

Sir:—In your issue of February 9 (p. 237) Mr. W. Roger Williams, F.R.C.S., in characteristic fashion accuses me of "gross misrepresentation" without citing instances. It is so easy to do that! He adopts the old familiar attitude he is so fond of taking up with an opponent, that of mistaking bald assertions for arguments and scientific evidences. Possibly the statement he complains of is that "scientific reasons are not contained in the original report of his lecture in London," etc., and this he twists into "Dr. Beard's special point against me is that I have not adduced my scientific reasons for denying the cancerous nature of Jensen's mouse-tumor." No doubt he adduced what he mistook for scientific reasons, but they were such as would not bear scientific scrutiny. I am a scientific investigator, a searcher after truth, and I never misrepresent any person or anything. That I leave to transparently anonymous writers in British scientific and medical papers. Regarding his recent letter I repeat the statement. Scientific reasons are *not* contained in his letter to the Medical Record of February 9. On page 238 he recites what he terms "the plain facts," and gathering them together in a bundle at the close of his letter, he flings them at my head as "crucial for diagnostic purposes." The "plain facts" he names, if they be facts, are such mainly because he says they are. They are not like axioms of Euclid or laws of mathematics. Most, if not all of them, are open to challenge not only by me, but by many other scientific workers. I will pass them in brief review.

Neither in Edinburgh, nor in London, nor in Copenhagen, has the Jensen mouse-tumor been found to be contagious at all! It is only in places where a new cancer-parasite is in keen request and in urgent demand

that Jensen mouse tumor acquires contagious properties. These are in direct proportion to the researcher's faith in cancer-parasites! The "contagious venereal malady" of bulldogs is a true sarcoma. On the facts revealed by the work of Dr. Anton Stricker and of Dr. H. Wade, in agreement with the former, I stated this a year ago in the Pathological Club here. The latter observer denied its truth, and in one of their reports last year the officials of the Imperial Cancer Research Fund "demonstrated" at great length that it was an infective granuloma. Now, because Mr. Shattock has arrived at this conclusion of its sarcomatous nature from his own work, and especially from the occurrence of true metastases, the foregoing supporters of Mr. Roger Williams's view with commendable and astonishing celerity have abandoned their position! The artificial propagation of human cancer, a horrible experiment to think of, has never been tried on any scale in the least comparable to that of the Jensen tumor, which has been inoculated into countless thousands of mice. Therefore this comparison is invalid. The transplantation experiments were humorously summed up by a prominent London physician as follows: "Some mice do take the cancer, and some don't. If you only go on long enough, those that don't become those that do. You can never be sure, and you never know where you are." It is not a scientific argument to deny that spontaneous cure has ever been observed in human cancer. It has not been observed in spontaneously arising or original cancers in mice. An artificially propagated cancer may quite conceivably behave otherwise than a sporadic cancer. What chance is there of spontaneous cure in human cancers being observed when practically every cancer which can be operated upon is removed at least once, if not six or seventeen times? Possibly for Mr. Roger Williams's special benefit, one such case was described in the *Journal of the American Medical Association* for February 9, page 481. Of course, of this as of other cases, it will be said that it was not a malignant tumor at all, "whatever its real nature." To assert that Jensen's mouse-tumor does not cause cachexia appears to me to be equivalent to a denial that it has an influence upon the nutrition or the metabolism of its host, which is not true. Certainly it forms no metastases, but not all human cancers do this. Finally, the Apolant and Ehrlich mouse-tumor is *not* Jensen's tumor, but another sporadic neoplasm, not hailing from Copenhagen. What these observers noted all goes to demonstrate the identity of cancer and sarcoma. When the above are summed up, what is left of Mr. Williams's "crucial" test? Nothing at all worth picking up!

But more remains to say. My opponent cites some published observations* on the occurrence not only of trypsin, but of amylopsin and of lipase in carcinoma cells from the pancreas-gland! Does Mr. Roger Williams mean to suggest that, because these observations are published, and in the pages of the *Journal of Anatomy*, they are of necessity true, or indeed, that they can contain a particle of truth? Will he or any surgeon maintain that there is or can be in this visible universe, as it is constituted, a particle of scientific evidence demonstrating that the living cells of any cancer can secrete the pancreatic enzymes, trypsin and amylopsin? As of other scientific journals, so also of the *Journal of Anatomy* it can be said that its volumes contain papers devoid of all scientific truth. How could it be otherwise in a world where no sooner does a scientific investigator reach a certain conclusion and publish it than some other "observer" either tries to annex the find, as, of course, happened with my cancer results, or by some curious human mental process arrives at the very opposite conclusions? Scientific men are fortunate if they have then to deal only with these two "views" and not with a score of rival ones. One very prominent British physiologist in his book lays it down that the fresh pancreas-gland contains little trypsin, but much amylopsin. A scientific man, skilled in ferment research, told me not very long ago that there was plenty of trypsin, but hardly any amylopsin it it; while a third, a scientific man and distinguished physician, whose conclusions I adopt because I have seen and tested his extract of it, maintains that *both* enzymes are present in abundance! Waring does not go the length of stating that he found pancreatic enzymes in the specimens examined. It was reserved for Mr. Roger Williams to make this assertion! His words are "the same or similar ferments." This work is not in accord with the findings of Petry, or with the prolonged chemical researches of Bergell, Blumenthal, and Wolff in Berlin, who found that cancer-cells were easily digested by pancreatic ferments. The scientific work of these latter may not be stigmatized as "rather the outcome of *a priori* considerations." That verdict should be reserved for my opponent's "arguments," for these are never based in actual personal scientific researches in the laboratory. To refer to the work of these German investigators in terms such as those employed by Mr. Roger Williams betrays an utter failure to realize the existence of a science of physiological chemistry. Now, although it is not common sense to do so, let it be supposed that Waring *did* find trypsin and amylopsin in certain cancer-cells. What then? Was it by means of these ferments that these cancer-cells were eroding the patient's liver and causing his death? If not, was the cancer-ferment, malignin, the culprit? If so, what were trypsin and amylopsin doing *en cette galère?* Mr. Williams cannot be aware that large quantities of potent pancreatic enzymes can be, and have been, injected beneath the skin of a healthy dog; that trypsin in quantity could then be detected in its urine, and that the only effect noted upon the dog was increase in weight. None of the internal organs were injured (Dr. S. N. Pinkus). If Waring actually found trypsin and amylopsin in pancreatic carcinoma cells, which had traveled to the liver, then in this case these enzymes had attacked the liver-cells, which looked at scientifically is utter nonsense. Certainly, trypsin kills cancer-cells. That is in evidence in specimens taken from or cast off by several treated cases. Mr. Williams has only to read the American medical journals attentively to find it stated again and again. At this moment these effects of pancreatic ferments upon living cancer-cells have been seen by many prominent pathologists in New York. Really, the next wonder we may hear about from the Transactions of some learned society or from the pages of some scientific journal, may be that some cancer-cells produce bile, or excrete urea, or that in cancer of the breast the tumor cells, true to their (supposed) origin from mammary cells, the mythical "tumor germs" of my opponent, actually go the length of secreting—milk!

When it suits my convenience I will demonstrate that these assertions by Mr. Roger Williams contradict some of the elementary facts of organic chemistry, and that for these reasons also the statements are false. As to the existence of "any specific cancer substance," there are actual evidences of the occurrence of a whole array of such, and some of these evidences are extant. I decline to produce further evidences at this juncture, for an investigator has the right to choose his own time for publishing broadcast new findings and conclusions. That is part of the strategy of science! Not that this need of necessity disturb the serenity of Mr. W. Roger Williams, F.R.C.S., or of his colleague in Chicago! Having abolished the science of physiological chemistry, the annihilation of the elements of organic chemistry may turn out to be a very simple task! A new universe, in which cancer-cells regularly secrete the powerful pancreatic enzymes, trypsin and amylopsin, may then begin its evolution under their scientific auspices! In such an amazing field of research a Pasteur would find himself as much out of place as trypsin and amylopsin would be in living cells of any existing malignant neoplasms!

J. BEARD.

EDINBURGH, SCOTLAND.

*H. J. Waring, the Physiological Characters of Carcinomata, *Journal of Anatomy and Physiology*, Vol. 28, pp. 142-148, 1893-94.

LOCAL ANESTHESIA FOR NASAL AND AURAL OPERATIONS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—That considerable interest is taken in the subject of local anesthesia for submucous resection, is shown from the number of communications I have received in relation to my article which was printed in the MEDICAL RECORD of February 23, and I wish to add to what I said: (1) That the exact proportions of cocaine and adrenalin chloride should be observed, namely, 10 grains cocaine, 20 drops adrenalin chloride (1 to 1,000). (2) The time to operate is when the membrane becomes scarlet, and not when it is blanched, as when cocaine alone is used. (3) Care should be taken to express any excess of solution out of the applicator, it is necessary only to have the cotton saturated and then to rub it on the membrane gently.

I also suggest the use of the solution in cases of paracentesis of the ear-drum, for which it acts as an almost perfect anesthetic, if allowed to remain in the ear some little time.

Through an inadvertence in my article in the issue of February 23 credit was not given to Dr. John Leshure, who first suggested this use of cocaine and adrenalin to me, and from the stimulus of this idea this (thus far) most desirable method of application was evolved.

F. E. MILLER, M.D.

OUR LONDON LETTER.

From Our Special Correspondent.

THE HUNTERIAN ORATION—ROYAL COMMISSIONS AND TUBERCULOSIS—LETTSOMIAN LECTURES ON CEREBRAL TUMORS—EPIDEMIC CEREBROSPINAL FEVER—PROFESSIONAL MISCONDUCT—GLASGOW UNIVERSITY—OBITUARY.

LONDON, February, 15, 1907.

THE Hunterian oration was delivered yesterday afternoon by Mr. H. T. T. Butlin before a considerable audience, and the festival dinner took place in the evening. The oration was in the main an examination of Hunter's objects in life and how he accomplished them. John Hunter saw, said the orator, long before the men of his time, something was seriously wrong with surgery, saw further what was needed to correct it, set himself in the prime of life the task of doing all he could to set the wrong right, and continued for the rest of his life to pursue that object, to the impairment of his health and the expenditure of his fortune. In 1748 a young man from the North arrived in London, but no one could have predicted that this young man would leave such a reputation as this celebration proved. He had to fight for everything he obtained. He saw that surgery rested on a frail foundation, and could not be carried further or practised with confidence so long as it had no firmer basis. Mr. Butlin expressed astonishment that Hunter could find time, amid all his multifarious pursuits, to carry on a large surgical practice, practise and take the first place as a hospital surgeon in London. But that was his only means of earning money, and money he must have for his scientific needs. His collection of specimens, prepared by himself, had grown so that he was obliged to build a museum for it. His last years were marred by broken health. He suffered, too, great anxiety because the catalogue of his museum was not completed. He died in 1793, but it was not until six years afterwards that Parliament purchased for £15,000 the museum on which he had spent all his spare time and ruined his health, and which he estimated had cost him £70,000. Eventually, the museum was presented to the College, and Mr. Butlin concluded his oration by asserting that one of the chief objects of the succession of college councils has been, not merely to maintain the Hunterian Museum, but to enlarge and perfect it, so that at this moment the Council could exhibit it as the best museum of its kind in the world.

At the dinner in the evening, the President of the College, Mr. Henry Morris, took the chair and proposed, in an appropriate speech, "the memory of John Hunter," the toast being drunk in silence. The health of the orator was afterwards proposed, and he briefly replied.

The opening of Parliament this week may suggest to optimistic sanitarians the hope of fresh legislation on the prevention of disease, but we are a long way from Disraeli's political cry, *sanitas sanitatum, omnia sanitas*, and what has passed since then is not encouraging. Politicians are more concerned with party than public health. Some who despair of Parliament have a strange confidence in Royal commissions. As I mentioned in my last, Mr. Dunn demanded one on cancer, and I might have added that Mr. Henry Sewill is advocating one on quackery. I have not much faith in Royal commissions as remedies for social evils. They seem to be a convenient method of shelving what governments cannot quite ignore, but do not want to be troubled with. Consider their uselessness in respect to tuberculosis. In response to urgent demands by the medical profession and sanitary authorities, a Royal commission was appointed in 1890 to inquire into the effect on human health of food derived from tuberculous animals. This commission labored for five years at the question, and in 1895 reported that tuberculous meat and milk did give rise to tuberculosis in man. Did the legislature proceed to protect the people from the indicated danger? Not at all. In 1896 another Royal commission was issued to inquire into the administrative procedures required for controlling this danger. This commission, like its predecessor, was composed of distinguished scientific authorities, who deliberated and inquired for two years, and reported in 1898 that various legislative measures were required, among them the appointment of qualified meat inspectors, notification of diseases in cows, and the enforcement of hygienic conditions in cowsheds, etc. Nine years have gone by since this report was presented, and not one of its recommendations has been carried out. In 1901 yet one more Royal commission was appointed, in response to the outcry produced by Koch's statement the year before that human and bovine tuberculosis were not identical. This last commission is still sitting to "Inquire Into the Relation of Human and Animal Tuberculosis." It has, however, published two interim reports, the first in 1904, summarized for you at the time, and the second only this month, and of which I gave you a brief notice in my last letter. Have I not justified my want of faith in the efficacy of Royal commissions? The consequences of this neglect of Parliament to deal with the prevention of disease are tragic. The absurdity of appointing commission after commission to inquire into the same subject, and putting report after report into convenient pigeon holes, must be obvious to all except governments and politicians absorbed in partisan contests.

That the public may yet be aroused to take a hand and compel attention to its dangers is perhaps possible on account of some disgusting revelations lately made—such as the sale of animals in the last stages of tuberculosis in open markets for paltry sums—such as 45s. and 50s. which a butcher paid for two cows, which he was proved in court to have proceeded to kill and prepare for sale for food. It is the same with milch cows; in markets where there is no inspection tuberculous animals can be sold.

The Lettsomian lectures for this year are being delivered by Dr. Ch. E. Beevor, and his subject is the diagnosis and localization of cerebral tumors. In the first lecture (on the 4th inst.) he observed that we have to depend almost entirely on the effects of pressure, and these may be either central or peripheral. They are mostly of the nature of pain, paralysis of action, or loss of sensation, and so the symptoms are mainly subjective. But some are independent of the patient, *e.g.* optic neuritis, paralysis of the ocular muscles producing strabismus, and the state of the reflexes. Headache, vomiting, and optic neuritis, Dr. Beevor said, were frequent in intracranial tumors irrespective of the position of the tumor. Headache fixed in one spot was some indication, particularly if attended with tenderness on pressure. If the headache was general, and accompanied by vomiting and optic neuritis, it was a help to diagnosis, but not to localization. Persistent pain, with tenderness, pointed to a superficial origin from the membranes rather than the cerebrum. Vomiting must be frequent and independent of food to be of any assistance, as it often attends migraine. Optic neuritis, with headache and vomiting, was one of the most reliable signs of tumor, but must be distinguished from the same symptoms in Bright's disease. Moreover, as Dr. Hughlings Jackson first showed, this neuritis might be intense, yet not interfere with vision, unless atrophy had commenced. It has now become of practical importance to be able to distinguish tumors near the surface accessible to operation from those too deeply seated. Even in these latter, relief could often be obtained by removal of a large piece of bone, so as to release the compressed brain from the pressure. The first effect of a tumor of the membranes pressing on the cortex was an epileptiform fit beginning in the part of the body representing the part pressed upon. A fit produced by a coarse lesion did not affect consciousness, but beginning locally it might become general, and then could not be distinguished from idiopathic epilepsy. The next effect of the pressure was paralysis, and that permanent on account of destruction of the cortex, loss of power then replacing the commencing spasm of the fits. Dr. Beevor then gave details of some cases in which the ascending frontal convolution, and others in which the ascending parietal convolution was involved, and said the question arose whether sensation was more affected in the latter than the former, and, if so, how far the difference would assist localization. So far as they went, these cases tended to show that parietal tumors, particularly those in the inferior part of the lobe, were more likely to have fits, beginning with a sensory aura, and to be followed by more extensive and permanent anesthesia and analgesia, than those in the frontal convolution, where the sensory changes were mere defective localization and loss of sense of position in the part first affected by motor spasm in a fit.

In the course of his lecture, Dr. Beevor referred to the history of localization, and mentioned that before experimentalists had established the principle Dr. Hughlings Jackson had reached the conclusion that unilateral and localized convulsions were due to irritation by tumors of particular convolutions of the opposite hemisphere functionally related to muscular movements. Dr. Jackson predicted that certain convolutions would be found excitable. His views were confirmed by the experiments of Fritsch and Hitzig in 1870 and Ferrier in 1873. It is difficult to realize, said the lecturer, that previously there was no such thing as localization, and one part of a convolution was supposed to have the same function as the rest. It was, in fact, only actual demonstration that overcame the opposition entertained against the idea of localization. Except Broca's center for speech, all our knowledge of localization has been obtained by experiments on animals. It is this research which has made possible the diagnosis of cerebral tumors, and with it the surgery of the brain. It is now over twenty years since Mr. Godlee (thanks to antisepticism) removed the first cerebral tumor in London. Sir Victor Horsley soon followed, and has since removed many, as have other surgeons. The practical importance of accurate localization has therefore become immense.

Cerebrospinal meningitis is causing uneasiness to health

authorities, and the feeling has extended to the people, as the newspapers report outbreaks of "spotted fever," as it is popularly called—a convenient name, though inexact, as the symptoms expressed are by no means constant. Cerebrospinal fever is used for the epidemic form, but the distinction is not commonly observed. The authorities do not exactly anticipate an epidemic in London, but the possibility of such an event cannot be ignored, and sporadic cases have been reported. Last evening the Medical Officer of Health for Lambeth reported to his Borough Council a case in his district in a girl six years of age. She was removed to hospital, the house disinfected, and the inmates are under strict observation. The Health Committee intend to recommend the London County Council at the meeting on the 26th to make the disease notifiable for a period of six months and to provide facilities for confirming diagnoses. The City Corporation is in advance of the County, for at the Court of Common Council yesterday it was stated the Port sanitary authorities had already made the disease notifiable, and the Port medical officers were keeping a very sharp lookout for any case that might occur, so that appropriate prophylactic measures might be instituted in season.

In Belfast, Dr. Baillie reported to the Health Committee yesterday 13 fresh cases during the week, with 8 deaths, and 19 patients in the hospital. The serum supplied from Berne had been used in one case, and was followed by much improvement, although that might have been only a coincidence. Of the total patients, 73, up to Wednesday 39 had died. In Dublin, 2 deaths have occurred and 2 cases remain in hospital. In Glasgow, 4 additional deaths were reported on Wednesday and 6 fresh admissions. In several Scotch towns cases have occurred. A case in Cumberland, fatal in twelve hours, is conjectured to have been contracted from persons who had arrived a few days before from Glasgow.

Professor Osler, being on a visit to Edinburgh last week, gave a lecture to the University medical students. He said in New York some 3,000 deaths had occurred in the last two years from the epidemic. The disease was not pandemic, but one of its peculiarities was to appear in widely separated places. Its mortality as an acute affection almost equaled that of plague. They knew of no disease which struck a patient with such lightning rapidity. It had probably the same degree of infectiousness as pneumonia in home epidemics. Many instances proved it could be communicated from one person to another. At present it was not widespread as an epidemic in Britain, and there was no reason why it should be. It was not likely to prevail beyond the winter season. As to treatment, it had been found that frequent hot tubs were a great comfort to patients. Prof. Osler thought it a hopeful feature that a serum had been prepared which had rendered monkeys immune, and it was not unreasonable to look for the elaboration of a similar serum for use in man.

"Conduct infamous or disgraceful in a professional respect" is not the same thing as "professional misconduct." Such is the dictum of Mr. Justice Warrington in a recent trial, after taking time to consider his judgment. Unless, and until this judgment is set aside by a superior court, such is the law, and it seems to add one more proof to the uselessness of the General Medical Council, which in the case tried had found a dentist guilty and removed his name from the register. The judge said the employment of unregistered assistants was not, so far as he could see, contrary to any rule of professional conduct, and advertising was allowed in the dental profession. There were other points of interest in the case, which was one to decide if one partner could terminate a partnership in which the articles gave him such power for "professional misconduct." A plain man would have supposed the phrase equal to the statutory term, and that the order of the Council should be received as sufficient evidence. Not so the lawyers, who have found another opportunity of profitable hair-splitting. The Medical Council must get fresh power from the legislature or sink into insignificance.

Dr. MacAlister is the new Principal of Glasgow University, notwithstanding the Secretary for Scotland's communique that the statement was "unauthorized." The next day he had to officially announce that the King had "approved" the appointment. Perhaps he was shocked at the press disregarding red-tape in its effort to be previous. Dr. MacAlister has received many academical honors and is a strenuous worker. He need not necessarily resign the Presidency of the General Medical Council. Sir William Turner held that office and at the same time the Principalship of Edinburgh University.

The death took place on Wednesday of Dr. J. E. Huxley, in his eighty-seventh year. He was a brother of the late Professor Huxley and formerly Medical Superintendent of Barming Health Asylum. He took his M.R.C.S. in 1843 and M.D., St. Andrew's, the next year.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

THE FIRST SUCCESSFUL PLASTIC OPERATION ON THE CORNEA—CASES OF KIDNEY DISEASE—THE FAT DIGESTING POWER OF THE STOMACH—ECHINOCOCCUS CYST—POISONING WITH MALE FERN—SURGICAL TUBERCULOSIS.

VIENNA, January 30, 1907.

THE possibility of performing a plastic operation on the cornea was first suggested by Reisinger in the preceding century, but all attempts to graft corneal tissue from the lower animals to replace defects in the human cornea were unsuccessful. A partial, though only temporary, success was achieved by Sellerbeck, who in 1878 succeeded in transferring a corneal flap taken from the eye of a two-and-a-half-year-old child that had been enucleated owing to a glioma in order to repair the damage caused by gonorrheal ophthalmia in an adult. Healing took place, but on the twenty-first day the graft became cloudy and vision was again destroyed. Other attempts also failed and the idea of restoring sight in this way was given up again. Dr. E. Zirm of Olmütz is the first one who has succeeded in carrying to a practical result what formerly was only a theoretical possibility, and has been able to bring about not only perfect repair of a corneal injury, but also the permanent transparency of the graft and consequent restoration of vision. His patient was a man both of whose corneas had been damaged by quicklime and Zirm performed his operation by making use of grafts taken from the eye of a boy that had been removed in consequence of injury by a splinter of iron. In the left eye the power of vision has been greatly improved, so that the patient is able to perform light agricultural work, such as cutting the grass, cleaning the stable, and attending to his cattle; he is also able to go on journeys and find his way about strange places. The graft is visible as a black disk in the midst of the milky surrounding cornea and forms a loophole through which the most minute details of the retina can be inspected with the ophthalmoscope. Zirm attributes his success to the following principles: (1) The use of human cornea, which must be from a youthful individual and well nourished. (2) The use of the trepan and of installations of eserin before the operation if the anterior chamber is still in existence. (3) Profound anesthesia, rigid asepsis, but no antiseptics. (4) The graft is preserved between two bits of gauze wet with sterile salt solution over warm steam until it is to be used; it is then, without the use of instruments, placed in position in the hole bored for its reception. The transplanted flap is kept in its position by two sutures passed through the conjunctiva so as to cross over it.

Three interesting cases of renal affections have been operated on by Illyes; the first was one of hypernephroma. The patient was a man forty-seven years old, who from time to time during the past two years had suffered from bloody urine. It was found that the blood came from the right ureter and on investigating the renal efficiency it was discovered that the right organ had been almost entirely destroyed. At the operation it was seen that the upper pole of the kidney was occupied by a tumor the size of the fist, which turned out to be a malignant hypernephroma. The kidney tissue revealed the lesions of a chronic parenchymatous nephritis. Removal of the growth and the kidney was followed by a recovery. The second case was one of renal calculus; this patient was forty-three years old, and twenty-four years previously a stone had been removed from his bladder. For about two years the urine had been cloudy and colicky pains were complained of on the right side. By means of the cystoscope it was observed that the purulent urine came from the right ureter. A functional examination showed that the organ in question was inefficient, and in a radiograph a faint shadow was visible in the neighborhood of the kidney. At the operation the stone could be felt in the kidney, and after the organ had been removed it was found that its pelvis was distended by a branched stone, while in the calyces other small stones were present. Four weeks later the patient was discharged as cured. The third patient suffered from suppurative nephritis. He was fifty-five years old and for two years had had colicky pains, sometimes on the one side and sometimes on the other. The urine was often bloody, and six months previously two stones were removed from the bladder. Several days before admission the patient had a chill followed by fever. With the cystoscope cloudy urine could be seen coming out of the left ureter and further examination demonstrated that the organ was functionally inefficient. At the operation scattered purulent foci were seen on the surface of the kidney and it was removed. Section of the organ showed that it was filled with numerous small abscesses

from which Friedlander's bacillus was cultivated. The abscesses were of hematogenous origin.

Dr. Stefan Pesthy has carried out observations on the fat splitting powers of the stomach, which have shown that steatolysis in the stomach is not a fermentative process. Digestive tests made with neutralized gastric juice do not show any differences in the extent and amount of fat splitting in normal, hyperchlorhydric, or achlorhydric stomachs. The steatolytic power of the cancerous stomach is extremely slight, however. Pesthy in the course of his investigation examined nearly a hundred stomachs.

A case of echinococcus in an unusual location has been operated on by Polya. The patient was a butcher, twenty-one years old, who had to the right side of the umbilicus a smooth, tense, fluctuating tumor the size of two fists, which moved with respiration and filled the space between the costal arch and the iliac crest. The mass was very movable. The laparotomy incision was made at the outer border of the right rectus, and on opening the abdominal cavity the tumor was recognized as being an echinococcus cyst. It was adherent to the omentum and took its origin from the anterior border of the liver near the gall bladder. At the anterior edge of the liver the cyst was found to have a prolongation the size of a quill, and on following this up another smaller cyst was discovered on the surface of the liver. In order to effect the removal of this cyst it was necessary to resect the ninth and tenth ribs. Recovery was uncomplicated.

A case of severe poisoning with male fern attended by total blindness has recently occurred in Budapest. A young woman suffering from gastric disturbances imagined that she had a tape worm and obtained from a druggist whose advertisement she had read a quantity of capsules of male fern. Following the directions she took nineteen of these in the course of an hour and a half. Severe headaches and abdominal colic followed and some hours later the patient became stuporous. From this condition she did not recover for about thirty-six hours, and then she discovered to her horror that her vision was gone. On examination it was found that the capsules each contained a gram of the extract of male fern, together with a little castor oil. The apothecary was arrested and convicted.

A child with fungous arthritis of the knee and both elbows has been treated with tuberculin of bovine origin by Dr. Hans Salzer. All three joints presented an extreme picture of the disease and discharged fetid pus from numerous sinuses. In addition to treatment by extension of the knee, injections of the tuberculin were given, beginning with a dose of .1 mg. This was cautiously increased to 2 mg. Very marked improvement has resulted, and in consideration of the severity of the lesion Salzer considers the result a very satisfactory one. He is of the opinion that in dealing with surgical tuberculosis in children tuberculin is no more to be dispensed with than is the congestion bandage of Bier.

Progress of Medical Science.

New York Medical Journal, February 23, 1907.

Subinvolution as a Primary Etiological Factor in Gynecological Affections.—J. H. Burtenshaw declares that fully one-half of female pelvic affections are due directly or indirectly to subinvolution of the generative organs. This latter condition arises from too great a blood supply and leaving out infection, this excess is due in turn to either retained secundines or irritation at some point of the genital tract which causes engorgement, more or less chronic. Whenever the uterus fails to undergo the customary involution every organ and tissue physiologically concerned in child-bearing is similarly affected. Laceration of the tissues of the parturient canal is by far the most frequent cause of subinvolution. Long continued congestion ends in hyperplasia. No tear of the perineum or cervix is too insignificant to merit repair. Even if nature heals the open wound the resulting scar tissue may act as an irritant and keep up the congestion indefinitely. Every wounded perineum or pelvic floor should be repaired within twenty-four hours and every wounded cervix within six weeks after confinement. The obstetric specialist does not always see his patients at the end of this period. The patient is often unwilling to submit to examination at this time when she may feel perfectly well in spite of the lack of proper pelvic repair. The author advises against the continuance of the binder after the first few days. The breasts should be regularly emptied. Ergot should be given in diminished doses for several weeks. The bowels should be regularly opened. Hot water douches are of value in promoting involution. If involution is retarded we should search for clots in the uterine cavity and carefully examine the cervix. A dull curette may be used to remove the clots. Finally, if all appreciable causes of subinvolution have been removed and if at the end of ten weeks involution is not complete, a thorough curettage is indicated with the application of pure carbolic acid to the endometrium.

The Trypsin Treatment of Cancer.—J. W. Luther discusses Beard's theories and refers to some of his experiments. He also refers to and summarizes various reports which have appeared on this mode of therapy. He finds a consensus of opinion that the trypsin injections (1) arrest or shrink the growth, (2) improve the general nutrition, increasing appetite, and body weight, (3) diminish or remove pain, and (4) lessen discharge and its fetor except in those cases in which sloughing occurs.

The Fallacy and Inutility of the So-called "Rapid Diagnosis of Rabies."—The conclusions offered by N. G. Keirle are as follows: (1) The presence of the ganglionic changes, described by von Gehuchten and Nelis, or the presence of the structure termed Negri bodies, is not pathognomonic of rabies (hydrophobia), since these are often found when rabies does not exist. (2) The absence of one or both of these appearances does not prove that rabies is absent, since they may be present when rabies is absent and absent when rabies is present; therefore they are not infallible indications of rabies (hydrophobia). (3) In the exigency of treatment, the results of preliminary examinations should not be waited for. When the circumstances are suspicious, when the animal has been killed or has escaped, when a person has reason to think that he has been in contact with the virus of rabies (hydrophobia), he should, as soon as he can, consult his physician, and, preferably through him, should at once communicate with some reputable institution treating this disease preventively, and abide by the advice given.

Live Steam in the Local Treatment of Infection.—F. Griffiths notes the existence of three causative factors in infection after wounds or abrasions, body heat, moisture, and pus germs. To be efficient, heat must be taken as hot as can be borne. The part affected should always be elevated or supported by a sling. Immersion in the hot fluid must be frequent, lasting for from half a minute to five minutes each time. As a rule the less covering of the part the better. The bowels must be kept open by calomel and salines, and some tonic, such as the combinations of iron, quinine, and strychnine, should be given. Rapid drying should follow the immersion in the hot fluid. One of the best methods of applying hot fluid in these cases is the holding of the part against the steam coming from an ordinary tea kettle. Rapid drying will occur within a few moments of each exposure. This method is simple, inexpensive, and always available. The author notes that a jet of steam directed into the uterine cavity has been used as curative in certain disorders of that organ, and it seems clearly practical to the writer to employ live steam projected into the general abdominal cavity through open median incision and repeated, as a means of battling general septic peritonitis, shock as well as sepsis being met by this means.

Journal of the American Medical Association, March 2, 1907.

Herpes Simplex.—J. F. Schamberg holds that herpes simplex and herpes zoster, while not clinically identical, are closely related; the histology of the cutaneous lesions and the observed nerve changes are practically the same in both. Both are due to a variety of causes, but he thinks that the vast majority of all cases are due to the action of a toxin, and this, of course, presupposes an infectious origin. The frequency of herpes simplex in certain diseases and its rarity in others suggest strongly that the toxin must have peculiar qualities to exercise such a selective affinity for sensory nerve structures. He holds, however, that this toxin cannot be the result of the action of any specific organism in the case of herpes simplex, and by analogy not in zoster. The three diseases in which herpes occurs most frequently, and in which it is therefore of diagnostic importance, are pneumonia, spotted fever, and malaria. Schamberg does not commit himself as to its favorable prognostic significance in pneumonia, of which there is considerable evidence, but he does not credit it in spotted fever nor in malaria in this country. The liability of some persons to recurring attacks of herpes must be taken into account in estimating the diagnostic importance of its occurrence.

Unusual Ocular Manifestations of Arteriosclerosis.—The two conditions noticed by Zentmayer are optic atrophy and spasm of the central artery of the retina. The literature and theories of optic atrophy from arteriosclerosis are reviewed and a case reported which seems to him to substantiate the view that with sclerosis of the ophthalmic or internal carotid artery pressing the nerve upward against the unyielding edge of the internal end of the fibrous canal, a transverse pressure atrophy, finally involving the entire diameter of the nerve, may occur. Such a process, he shows, would account for the symptoms and appearances in the case reported. The literature of spasmodic blindness is also reviewed and a case reported in abstract in which the spasm of the ocular vessels was repeatedly observed ophthalmoscopically. It is probably unique in respect, as only three similar cases, but of a single observation of the spasm, were discovered in a search through the literature: those of Wagenmann, Benson, and Sachs, all of which are reproduced in abstract. The patient had arteriosclerosis and probable incipient tabes. The prognosis in these cases varies according to whether the spasm is simply a manifestation of a general spasmodic disorder or of a general grave vascular disturbance. The treatment is that of early arteriosclerosis, high tension, and spasm. Iodid of potassium is the only reliable drug for the arteriosclerosis. Moderation in all things is of more importance than regularity of dosing. The nitrites are available for the spasm, and heart tonics are usually needed. With symptoms of obstruction, massage of the eyeball should be tried. The value of iridectomy is questioned. It may be justified in certain cases, but its efficiency against future attacks is dubious.

Volkman's Ischemic Paralysis and Contracture.—C. A. Powers reports a case of this condition in a boy of seventeen, following a stab wound in the right forearm, and discusses the literature, analyzing the reported cases. The condition is essentially a myositis and is quite different from that following the use of Esmarch's bandage. The characteristic features of both are described. It is usually the result of overtight bandaging in fracture cases, and is most common in children and in the upper extremity. The prognosis is not very good for complete recovery, though a fair result was obtained in a little over half of the cases, and it seems better in patients operated on by tendon lengthening, bone resection, etc., than in others. It begins soon after the use of the splint, with progressively increasing pain, and if the splint is not speedily removed, contractures and paralysis follow. The removal of the cause must be within four or five hours to secure recovery. Primary lesions of the nerves may also exist. The diagnosis is clear, with a history of the case. The English authorities advise massage and passive motion in the slighter cases, continued over a long period if necessary.

Surgery of the Spinal Cord.—The surgical diseases and lesions of the spinal cord are reviewed by J. B. Murphy. He holds that when the axons and ganglion cells that make up the substance of the cord above the cauda are destroyed, regeneration is impossible, and, therefore, in gunshot or stab wounds with immediate paralysis, operation is useless as regards hope of repair, except in the caudal zone, where the possibilities are the same as in the case of wounds of peripheral nerves. Hemorrhage, concussion, and contusion without laceration may give rise to the same immediate symptoms as division, and a positive differential diagnosis is impracticable. The time and order of appearance of symptoms may be the only guides; there is no direct relation between the severity of the trauma and the degree of injury to the cord. Absence of immediate paralytic symptoms is not a guide—they may appear after days or weeks. Early spinal puncture may relieve paralysis due to hemorrhage which in some cases may be as complete as that due to division of the cord. Most patients with incomplete paralysis following fractures recover without operation, and when the displacement is not great the physician is justified in assuming that the cord is not suffering continuous compression and in refraining from operation. The special indications as regards operation in the various conditions above enumerated are pointed out and the technique of laminectomy is described. The danger of delay in conditions calling for operation, especially in non-malignant tumor, tuberculoma, etc., is emphasized. Late operations after necrosis in the cord has taken place are worthless.

Turbinate Hypertrophy.—D. A. Kuyk reviews the objections to the methods of cauterization and excision of the turbinates, and proposes in their stead the making of one or more incisions through the mucous membrane of the hypertrophied turbinate, well down to the bone, when, with a broad nasal saw, the bone is cut to a depth depending on its nature, whether cancellous or vitreous, which is easily detected by the sensation imparted to the hand. If the bone is dense and hypertrophied the cut is carried well down into its substance. Then the nostril is cleansed and the edge of the incised mucosa carefully tucked down into the cut which has been made with a wide saw to allow this. The tissues are kept in place by a carefully adjusted sheet of cotton, saturated with equal parts of compound tincture of benzoin and flexible collodion. This can be left *in situ* for two or three days, when, after careful soaking, it is removed, the tucked-in edges not being disturbed. Repacking is rarely required. The advantages of this method over cauterization or partial or complete turbinectomy are claimed by him to be as follows: 1. Preservation of physiologically active tissues. 2. Freedom from disagreeable reaction or complications. 3. Absence of shock, since but slight local anesthesia is necessary. 4. Freedom from aggravation of existent disease in neighboring cavities. 5. Ease and speed in performance; the instruments used being few and simple.

The Lancet, February 16, 1907.

Operation for Strangulated Congenital Inguinal Hernia Performed on Shipboard Under Difficult Conditions.—The history of this case is detailed by A. B. Francis, who was called to see one of the ship's stewards, about twenty-one years old, suffering from a hernia of the variety indicated in the title. The boy was on his first voyage and had been quite seasick, and the laxness of his tissues, together with the force of his retching, had forced the hernia downward. The size of the swelling was about equal to that of the head of a newly-born child. Hot baths, taxis, morphine injections, chloroform anesthesia were all insufficient to allow of the reduction of the mass. Preparations were made for operation in the ship's hospital and the case came to the table about four hours after the onset of symptoms. The only assistants at hand were some of the under stewards and one hospital steward who had some slight knowledge of drugs, but none in operative procedures. The operator made the usual incision and dissected down carefully. Meantime the captain had slowed down the ship to minimize as far as possible the effect of her motion, and just as the operator was about to enter with his knife the peritoneal sac, the vessel was stopped completely for a few minutes. The operation was successful and the man made an uneventful recovery.

Reunion of an Almost Severed Leg.—T. Hayes reports the case of a lad of eighteen years who was run over by a mowing machine. The tendo Achillis, the tibia, and the fibula were completely cut through, the only parts escaping amputation being the tendons and other tissues in front of the bones. The boy was placed in a cart and started for the doctor's office twelve miles away. On the journey it was feared that he would bleed to death, and a stop was made at a town where a young army surgeon was found who advised immediate amputation. This was refused by the mother, who accompanied the boy, and finally the author was sent for. He reached the patient about twenty-four hours after the injury and found the almost severed limb turned up to the shin, a large plug of lint in the wound, and all well bandaged. Examination showed that the anterior tibial vessels were still carrying on the circulation, as the foot was warm. The parts were cleansed, the ends of the tendo Achillis brought together with some very strong sutures, and a lint and water dressing applied. The author also put on a slipper with a strap attached and fixed to the knee to extend the foot backwards, bent the foot backwards, and kept the knee also bent. The case did well. At the end of a year the man was able to walk without limping, but with a stiff ankle joint. Thirty-five years later the patient walked without any apparent lameness. There was a slight projection of the inner ankle and a sulcus over the cicatrix.

Value of Bacteriological Examinations of the Blood in Typhoid Fever and other Bacteriemias.—F. G. Bushness notes that in his district (Brighton) the Widal reaction for typhoid frequently gives indefinite reactions, such as slight loss of motility of the bacilli, and a few small loose clumps within one hour, even when the clinical diagnosis is typhoid fever, and this may be so even in the third week of the illness. The absence of agglutination may be due either (1) to defective formation of agglutinins or (2) to the infection being

due to a bacillus which, though closely allied to, has specific differences from, the bacillus used to carry out the serum reaction; for example, paratyphoid infection would fail to agglutinate "completely" cultures of the bacillus typhi. He believes that the value of the agglutination test by a minimum serum in establishing the identity of the bacillus in question cannot be overestimated. The cultural tests under those circumstances are, in his experience, comparatively valueless, being mostly negative. Details of one case are given, illustrating the author's contentions.

British Medical Journal, February 16, 1907.

Deafness in Myxedema.—The patient whose history is reported by W. R. Kemp was a woman of fifty-five years, presenting the usual features of myxedema, though her only complaint was of deafness. When she did hear, questions were not answered at once, there being some few seconds spent in hesitation before a sentence was commenced. She spoke in a dull, apathetic tone, and had considerable difficulty in articulating long words. She was placed on a light, nutritious diet, with laxatives at bed-time as required, thyroid extract in tabloids of gr. ijss being given three times a day after each meal during the first fourteen days, after which the dose was doubled. After six weeks some signs of recovery appeared, the swelling of the body decreased, and the hearing and speech improved considerably. The point which seems to make the case worth reporting is the deafness, which may have been due to the thickness and dryness of both tympanitic membranes. The author has not found any reference to deafness as a feature of myxedema in the text-books or current literature.

Typhoid Fever Simulating Cerebrospinal Meningitis.—J. A. Cowie's case was that of a coal miner, seen two weeks after his initial symptoms and considered as a case of cerebrospinal meningitis, his symptoms being almost typical of this malady. Lumbar puncture was done, but no fluid obtained. The agglutination test was negative and the *Diplococcus intracellularis meningitidis* could not be isolated from the blood. The patient died on about the sixteenth day of his disease, and autopsy revealed the abdominal lesions of typhoid. The brain membranes were in a state of extreme congestion, and pus was seen on the surface of the brain in the temporal region. At the base of the brain a seropurulent fluid was found in large quantity, and a specimen of this under the microscope showed pus cells and a number of diplococci, and also diplococci in rows. Examination of a specimen of the cerebrospinal fluid showed that neither the *Bacillus typhosus* nor the *Diplococcus intracellularis meningitidis* were present, but a Gram-positive diplococcus occurring in chains was isolated. Two c.c. of a broth culture of this diplococcus were injected intravenously into a rabbit, but as the animal was quite well after two days the diplococcus was proved to be nonvirulent.

The Treatment of Rodent Ulcer by Zinc Ions.—H. L. Jones says that the apparatus required for this therapy is simple. An ordinary medical continuous current battery, with a galvanometer, a pair of wires, a flat pad for completing the circuit at the negative pole, and a rod or other electrode of zinc attached to the positive pole, completes the outfit. The zinc must be covered with three or four layers of lint, which serve as a reservoir to hold the zinc solution, a two per cent. solution of the sulphate being very suitable. The zinc should be freshly cleaned or amalgamated, and the solution should be made with distilled water. It is as well not to touch the zinc electrode or its covers with the fingers unnecessarily, because every touch imparts a trace of sodium chloride from the skin, and tends to reduce the efficiency of the process a little by bringing in some foreign ions. The circuit is completed through the usual pad electrode applied to any convenient part of the patient, the zinc electrode of suitable size is held upon the rodent ulcer, and the current is slowly turned on until a current of five, or eight, or ten milliampères is reached, according to the size of the electrode used. Ledue has advised that a suitable magnitude of current to use is two or three milliampères of current for each square centimeter of the positive electrode, and, in general, patients can bear this concentration of current without complaining. The sensation produced is a burning one, not unlike that of a mustard plaster. In patients who are sensitive it may be convenient to introduce a little cocaine beforehand. When the surface is raw the cocaine solution can be directly applied on a tuft of cotton-wool left in contact with the ulcer for a few minutes. When there is no raw surface the drug can be helped to penetrate electrolytically from the positive pole if, before using the zinc solution, a tuft of wool moistened with cocaine solution is applied to the surface of the rodent ulcer, and the current passed in with the zinc electrode, exactly as for the introduction of the zinc. The preliminary use of cocaine permits of the use of a somewhat stronger current. It is necessary to use a pure solution of cocaine, and not a solution containing sodium chloride or any other salt. Occasionally the condition of the ulcerated surface offers some difficulties to the even distribution of the zinc ions. Occasionally, also, it may be necessary to puncture certain areas with the zinc needle if the application of a flat electrode is not practicable. Other cases which are difficult are those which have been operated upon by *x*-rays or by the knife, and have relapsed, for they have a tendency to recur at several points around the original site, and also to invade the subcutaneous tissue. If they have a thickness greater than two or three millimeters, it is difficult, in a reasonable time, to drive the zinc ions inwards to a sufficient depth to influence the deeper parts, unless a zinc needle is used. The advantage of using a needle is that time is saved, for if one can push the zinc needle into the depth of the part to be destroyed, the migration of the ions into the surrounding layers is accelerated, and this is a great advantage, because the rate of movement of the zinc ions is slow.

Ichthyosis and Its Treatment.—W. A. Jamieson gives the histories of several cases illustrative of the varying phases of this affection. He declares that our therapeutic efforts should be directed toward the promotion of the regular systematic exfoliation of the unduly adherent and effete horny cells. There are various substances which have the power of thinning down, artificially, the epidermis. Sulphur is one, but if used it not only adds to the abnormal aridity, but is apt to set up exudative and even inflammatory processes. Salicylic acid, too, in the dilute form in which alone it can be prudently employed over extensive areas and for a length of time, fails to accomplish what is needed. Resorcin, however, not only favors continual desquamation, but tends to leave the subjacent surface polished and pliant; hence its use is specially indicated. Combined with an oily base it dries up or is rubbed off. Glycerine from its hygroscopic properties is the excipient *par excellence*, but applied alone is rather irritating. In union with starch it forms a bland, persistent, soothing, and softening medium, and, as has been seen, while in all cases so used it proves eminently beneficial, if its application is begun early enough and steadily persevered in, it can effect what must be regarded as a cure. At the same time, with all its qualifications, the resorcinized glycerite of starch alone would not enable us to get continuously rid of the ever newly-forming accretions of epidermis. We must therefore have recourse to a medicated soap, and a superfatted one with which resorcin and salicylic acid are incorporated—that which is so valuable in shortening the desquamative stage in scarlet fever—has proved adequate, and prepares the way for the subsequent glycerinization. Internal remedies are of little use in ichthyosis. The only one which aids us at all is cod-liver oil administered in small doses at night. Pilocarpine is inoperative in early treatment, unnecessary in later.

Berliner klinische Wochenschrift, February 11, 1907.

The Sphygmoscope.—Rheinboldt gives this name to an instrument he has devised primarily for the purpose of facilitating the use of the sphygmomanometer. It is intended to render the determination of the point at which the pulse wave becomes obliterated susceptible of objective demonstration. In order to effect this the patient's index finger is inserted into a suitable adjustable collar supported on a tripod and connected with a double lever by which the alteration in the size of the member with each pulse beat is manifested by a considerable excursion of the indicator. It was found that readings of the sphygmomanometer made by means of the instrument were somewhat lower than those in which systolic pressure was determined by the sense of touch, but the difference is a consistent one and the author considers that it does not invalidate the appliance. He has also found it very useful as a means of obtaining information in regard to the regularity of the heart action and of detecting variations in rate and intensity of pulsation that otherwise might easily be overlooked. Advantages of the instrument are its simplicity compared with the sphygmograph and its consequent ease of adjustment and cheapness.

Münchener medizinische Wochenschrift, January 29, 1906, and *February* 5, 1907

Nervous Disturbances Accompanying Digestion.—Kehrer calls attention to the frequency with which unpleasant dreams, and more particularly the classical nightmare, occur during the early hours of sleep when digestion, in accordance with the German custom of taking the evening meal at about eight o'clock, is still actively going on. He considers that during the period in which the gastric contents are being expelled into the duodenum,

nervous disturbances of the future are particularly likely to be induced, and suggests that this may be the result of the sudden flooding of the circulation with the products of digestion which may result in evoking these evidences of stimulation in the brain. Persons who are subject to disturbances of this sort should allow three or four hours to elapse between the last meal and going to bed; should not let this last meal be too hearty a one, and should make it a point to avoid all indigestible dishes and alcoholic drinks with the evening meal.

The Use of Rubber Gloves.—Walther in discussing this subject admits that by the use of rubber gloves it is possible for the surgeon to operate with perfectly sterile hands, but he considers that in spite of the statements made by many surgeons, even long habituation to their use does not compensate for the impairment of tactile sense the gloves entail. Particularly in such obstetrical manipulations as removal of the retained placenta or in cleaning out the uterus after an incomplete abortion is it desirable that the operator shall have full possession of the utmost degree of tactile sensibility, and under these conditions the use of gloves may be a source of danger rather than of safety. It is his attitude that the gloves should be used rather for the purpose of protecting the physician's hands from contamination in making rectal examinations, handling infectious material, etc., than as a routine in operative surgery and gynecology. In regard to a proposal recently made to have the use of gloves made obligatory for country midwives, Walther expresses his unqualified disapproval of such a measure. It is necessary, if gloves are to be used, that both the hands and the gloves be sterilized with all possible care, and if the gloves are made compulsory, the average midwife is sure to relax her precautions in the one respect or the other. The introduction of the glove would form a needless addition to the appliances to be kept in order by the midwife and would be found an unnecessary, expensive, and dangerous innovation.

The Treatment of Tetanus.—Glänzel makes the successful outcome of a severe case of tetanus the text for a discussion of the antitoxin treatment of the disease. The patient was a young man of eighteen years, and the treatment carried out comprised the customary administration of chloral, morphine, and potassium bromide in large quantities, as well as the use of antitoxin. An unusually large amount of this was injected, and it is the author's aim principally to call attention to the necessity for resorting to much larger doses of the antitoxin than are usually given. He believes that it has been demonstrated that the toxin is disseminated through the body by way of the blood stream, and not through the nerves, as was formerly supposed, and therefore the subdural injection of antitoxin is not necessary. The local treatment of the site of infection is exceedingly important, and should be carried out in as radical a manner as possible without causing undue mutilation, but the early and repeated administration by hypodermatic injection of large amounts of antitoxin should never be neglected. Prolonged warm baths are also mentioned as a valuable adjunct to the treatment.

Operations on the Hands.—Vogel suggests that in order to secure more effective sterilization before performing operations on the hands, particularly plastic procedures the patient be directed for two or three days preceding the operation to place the hand for one hour, night and morning, in a hot-air apparatus of the type devised by Bier. By this means very profuse perspiration is induced and relative asepsis can be much more easily secured. This is particularly true in dealing with the hands of mechanics or laboring men whose skin is apt to be very thick and grimy. Another advantage of the plan is to be that the occurrence of small areas of necrosis along the line of suture that so frequently takes place in operations of this sort seems to be obviated.

Deutsche medizinische Wochenschrift, January 3, 17, and 31, 1906, and February 7, 1907.

Removal of a Foreign Body Through the Bronchoscope.—Winckler says that it is no longer permissible in dealing with a patient supposed to have aspirated a foreign body to pursue an expectant plan of treatment in the hope that in the course of time the intruding substance will be coughed up. The *x*-ray is unreliable as a means of locating small bodies in the bronchi, and the bronchoscope now forms the most satisfactory diagnostic and therapeutic instrument. A patient whose bronchi contain a foreign body must be regarded as a seriously sick person, even if there is but little disturbance in general health, and in case there is any suspicion of the aspiration of a foreign body bronchoscopy should be resorted to without delay. Winckler describes a case of his own in which a woman of fifty-eight years inadvertently drew into her lungs a fragment of bone. Cough with putrid purulent expectoration ensued and two months later, when she came under the author's observation, the expectoration was extremely fetid. By means of a rather complicated application of the bronchoscope, it was finally possible to remove two spicules of bone from a portion of the right bronchus, thirty-four cm. from the lips. One of the fragments measured 13 by 7 by 1 mm., and the other 9 by 2 by 1 mm. The fetor of the expectoration promptly disappeared, though the other evidences of bronchial and pulmonary irritation were slower in subsiding. Ultimately complete recovery in every way occurred.

The Reflexes During Sleep.—Kutner has tested the reflexes during sleep in a considerable number of patients suffering from nervous diseases. He believes that the opinion expressed by many observers that the deep tendon reflexes are absent during sleep is erroneous and is dependent largely on the difficulty of eliciting such reflexes without waking the patient. He tested the knee jerk in twelve cases, and the achilles tendon reflex in twenty-two cases. The patellar reflex was present in all the patients, but in three instances the achilles tendon reflex could not be elicited. It was found, however, that in these patients even when awake this reflex could not be obtained when the limbs were placed in the position they occupied during sleep. The superficial reflexes are easier to test during sleep, and the various plantar reflexes, the only ones tested, were found to be normal in the sleeping patients. The great toe reflex formed an exception, however, and variations could be distinguished according to the nature of the patient's malady. In cases of progressive paralysis and delirium tremens a positive Babinski reaction was found in from a half to two-thirds of the cases, whereas in psychoses of a different nature the reflex was absent. The author points out that in the first two conditions there are organic changes in the brain and that the association with these of the Babinski phenomenon during sleep is very suggestive in view of the fact that in the waking state the reflex ordinarily indicates a lesion of the pyramidal tracts.

Fever in Carcinoma.—Alexander gives the histories of a number of cases in which malignant new growths were accompanied by more or less persistent and well-marked fever. These observations, as well as a review of the literature, lead him to the conclusion that there is a definite cancer fever which is independent of complications. This febrile movement may follow various types, and is not bound to any definite form. It occurs as the result of autointoxication resulting from absorption of products formed through the metabolic activities of the new growth itself. In most cases of febrile cancer the new growth is situated in the abdominal cavity, and is particularly apt to involve the alimentary tract. While it might appear that in ulcerating growths the conditions were particularly favorable for the occurrence of temperature elevations, this is not so, and clinical experience shows that in such cases the appearance of fever has no direct relation to this characteristic of the tumor.

Complications Caused by the Therapeutic Application of the Roentgen Rays.—Engel has compiled a long list of the various more serious complications that have been reported as attending the use of the Roentgen rays for therapeutic purposes and calls particular attention to a form of toxemia that is sometimes observed. In a case of his own a patient of fifty-four years suffering from lymphatic leukemia in the course of a series of *x*-ray treatments developed high fever, collapse, diarrhea, rapid loss of strength, and heart failure, finally leading to death under the appearance of an intense toxemia. Inasmuch as the leukemia had been of a pronouncedly chronic type, it seems certain that the rapid course of the illness must have been the result of the *x*-ray radiation, a view that is strengthened by the rapid reduction in the number of red and white blood cells and in the size of the spleen and lymph glands that ensued. In this case the total length of exposure was 350 minutes in eleven days, and although the total number of *x*-ray minutes was not very large it seems not unlikely that the treatments were given at too short intervals. The author suggests that no *x*-ray treatment should last more than two minutes at a time, with the tube at a distance of 20 cm. or four minutes at a distance of 35 cm.; the same portion of the body should not be treated more than two or three times daily, and very hard tubes should be used for therapeutic purposes. The portions of the body surrounding the area to be treated should be protected with lead plates, and after every five or six treatments a rest of a week or so should be allowed.

The Axillary Regions are recommended by Klose as being the best situation in which to inject antitoxin or similar preparations, as the skin is freely movable, is well padded with fat and connective tissue, and the lymphatics are well developed.—*Deutsche medizinische Wochenschrift.*

Book Reviews.

THE PRACTICE OF OBSTETRICS, in Original Contributions by American Authors. Edited by REUBEN PETERSON, M.D., Professor of Obstetrics and Gynecology in the University of Michigan, Ann Arbor, Mich. Obstetrician and Gynecologist-in-Chief to the University of Michigan Hospital. Philadelphia and New York: Lea Brothers & Co., 1907.

THIS is the third of the series of books in "The Practitioner's Library," the other two being on Pediatrics, edited by Dr. Walter Lester Carr, and Gynecology, edited by Dr. J. Wesley Bovée. These two have already been reviewed in our columns, and we cannot say more for the present volume than that it is the equal, in all essentials, to the others of the series. The contributors to this volume are Drs. Charles Sumner Bacon and Henry Foster Lewis of Chicago, Montgomery A. Crockett of Pinehurst, N. C., W. A. Newman Dorland of Philadelphia, G. Carl Huber and Alfred Scott Warthin of Ann Arbor, Mich., Hugo Ehrenfest of St. Louis, Walter P. Manton of Detroit, John F. Moran of Washington, and Benjamin R. Schenck of Baltimore. The sections into which the work is divided are on Physiology and Development of the Ovum, Physiology of Pregnancy, of Labor, and of the Puerperium, Pathology of Pregnancy, of Labor, and of the Puerperium, Obstetric Operations, and the Newborn Infant. The book is profusely illustrated, more perhaps than is expedient, for some of the subjects do not require such elaborate illustration, and the pictures take up much room and increase unduly the size and the weight of the book. The illustrations are, however, excellently done and very distinctly printed, and most, at least many, of them are clearly original. There are 523 illustrations in the text and thirty full-page plates. The articles are not all of the same standard of excellence, but as a whole there is little criticism to be made of the work as a trustworthy guide to the obstetric art, and we can safely recommend it to the student or practitioner who wishes for an up-to-date text-book on this subject.

A GUIDE TO DISEASES OF THE NOSE AND THROAT AND THEIR TREATMENT. By CHARLES A. PARKER, F.R.C.S. Edin., Surgeon to the Golden Square Throat Hospital, London, with 255 Illustrations. New York: Longmans, Green & Co.; London: Edward Arnold, 1906.

BOOKS on nose and throat diseases are following each other from the press in such rapid succession that a review becomes difficult, inasmuch as they all cover practically the same ground, and the differences between their various statements refer to minor points which are of interest only to the specialist. Dr. Parker incorporates in this volume his lectures given at the well-known London institution, and his method of putting things is well expressed in his own words in the preface, to the effect that the three most important objects of a course of study at a special hospital are "to acquire the necessary dexterity to examine a patient systematically, so as to overlook nothing, to recognize and put in its proper place the particular pathological condition found, and finally, but chiefly, to treat both the patient and the local abnormality successfully." As suggestive of his adherence to these principles is the fact that he puts his chapter on "Complications of the Upper Respiratory Tract in relation to General Medicine" *before* instead of *after* the detailed maladies of the nose, nasopharynx, and throat. By this we understand that the author realizes that rhinology and laryngology are but parts of medical science, and by no means the whole of it. The book is well printed, the illustrations are clear, the index is excellent, and this record of a vast clinical experience is worthy of perusal by all interested in this field of professional work.

THE MEDICAL EPITOME SERIES: PATHOLOGY, GENERAL AND SPECIAL. A Manual for Students and Practitioners. By JOHN STENHOUSE, M.A., B.Sc. Edin., M.B. Tor.; and JOHN FERGUSON, M.A., M.D. Tor. Illustrated with 16 Engravings and a Colored Plate. Philadelphia and New York: Lea Brothers & Co., 1906.

THE first half of this book is devoted to general pathology, and treats of the various topics usually included under this head. The subject of inflammation is disposed of in some half dozen pages. The classification of tumors adopted is the recent one of Adami, which, while possibly scientific, is likely, with its novel nomenclature, to add to the difficulties of the student; to the practitioner it will probably be less intelligible than the one he learned at college. Two useful chapters are those on toxemia and immunity. The second half of the book deals with special pathology, and calls for no special comment. The volume, as a whole, is of about the same standard as the rest of the series.

GREEN'S ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Vol. II. Bread to Ear. Edinburgh and London: William Green & Son, 1906.

THIS is the second volume of this very complete and useful work. It carries the subject matter along to and including "Ear." There are 1,758 separate headings, the articles under each varying from the few words needful as a definition to an encyclopedic article of more than 1,000 words in length. The dictionary part of the work is a very valuable feature, including most of the titles which would be looked for in any ordinary medical dictionary. In the present volume, for instance, under the head "Disease" are defined nearly one hundred eponymic terms. The intrusion of the names of clinicians and others in the designation of special diseases is a great evil in medical nomenclature, but since it has occurred and careless writers use such terms continually, a definition is often very necessary. The editor has met the trouble in the best way, and with the greatest economy of space, by grouping all these eponymic terms under the one title. There are not many illustrations, but such as there are are judiciously chosen and are helpful. This second volume sustains the character of the work as one of great utility to the practitioner of medicine.

A TREATISE ON THE MOTOR APPARATUS OF THE EYES, Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment, with the Anatomy and Physiology of the Muscles and Their Accessories. By GEORGE T. STEVENS, M.D., Ph.D. Philadelphia: F. A. Davis Co., 1906.

THE work, as stated by the author in the preface, is a sequel to that on "Functional Nervous Diseases," and is presented as a further argument to support the central idea, namely, that "difficulties of adjustment of the eyes are a source of nervous trouble and more frequently than other conditions constitute a neuropathic tendency." The book is one of 496 pages, well printed and illustrated. The text proper is divided into four parts, and the different topics are considered in sections. The introduction is an historical sketch and gives the views of Stromeyer, Dieffenbach, von Graefe and others on strabismus, and of von Graefe, Soelberg-Wells, Galezowski, Landolt, and others on heterophoria or "insufficiency of the internal recti muscles."

Part I. treats of the anatomy of the motor muscles of the eyes, and of the parts accessory to them. The comparative anatomy of the eye muscles of fishes, reptiles, birds, and mammals is described and illustrated. The bony structure, size, and position of the orbits in man are carefully described. A study of the plane of the orbital axes in relation to the horizontal plane of the cranium, with a view to its bearing on the visual plane, is here set forth. In the sections treating of the contents of the orbit, the insertion of the extrinsic eye muscles into the globe and the relation of Tenon's capsule to the globe, eye muscles, and orbit are considered in detail.

Part II. is devoted to physiology. The laws of torsion, field of binocular vision, the horopter, the normal direction of the planes of vision in relation to certain cranial characteristics and stereoscopic vision are described and discussed.

Part III. treats of "anomalous conditions of the motor muscles of the eyes consistent with the physiological state." An explanation of the terms introduced by the author is given. In this part are found descriptions of the use of the tropometer, of the clinoscope, of the phorometer, and the Maddox rod. A discussion of torsion or declination of retinal images, also of the various departures from the normal in the direction of the visual lines, the uses of prisms, causes of strabismus, etc., are included.

Part IV. treats of "anomalous conditions of the motor apparatus of the eyes not consistent with the physiological state." To these conditions the term "colytropia" is applied. This parts treats of spasm, of paralysis, and of obstruction to the action of the "motor" muscles of the eyes.

The volume presents the views of one well fitted in every way for the work, who has devoted many years to the theoretical and clinical study of the subject. Much that it contains is original with the author. Many of the views expressed have been previously published, but they are here collected and systematically arranged, making a complete whole. No one who is studying ophthalmology, or who is engaged in the practice of ophthalmology, can afford to neglect to acquaint himself with the contents of this volume. In many respects it marks a distinct advance in our knowledge of some of the subjects of which it treats.

STUDIES IN THE PSYCHOLOGY OF SEX. Erotic Symbolism; The Mechanism of Detumescence; The Psychic State in Pregnancy. By HAVELOCK ELLIS. Philadelphia: F. A. Davis Co., 1906.

WITH the appearance of this volume, the fifth of the author's stories of sexual phenomena, the series draws to a close. The next and last volume, he states, is to be devoted to a consideration of the bearings of the psychology of sex to social problems in general. The first section of the present work includes a résumé of the sexual perversions and aberrations, the second is devoted to an analysis of all the phases of the culmination of the various psychical and physical phenomena for which the period of tumescence has furnished the preparation, and the third deals with the emotions attending the pregnant state.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held January 4, 1907.

DR. JOHN F. ERDMANN IN THE CHAIR.

A Case of Synovitis of the Sacroiliac Articulation.—Dr. HENRY W. FRAUENTHAL presented this case, a boy, 11 years old, who, on June 26, 1906, was struck by a cable car. He was in the hospital for some time, and discharged as cured of his injuries. At present he had synovitis of the right sacroiliac articulation. He could raise his left leg with the knee fixed. He could not raise the right leg when the knee was fixed, and, on attempting to do so, complained of great pain at the sacroiliac joint, when the knee was flexed on the pelvis. The motions of the right and left hip joints were equal. Pressing the pelvis together produced pain at the articulation of the right sacroiliac joint. Making pressure on the erector spinæ muscles and on the latissimus dorsi on the right side produced pain at the sacroiliac joint. Pressure on the same muscles on the left side elicited no pain. The patient in walking leaned to the right side. He had a peculiar gait due to the contractions of the ham-string muscles on the right side.

Traumatic Amputation of Finger; Autoplasty.—Dr. HERMAN C. FRAUENTHAL presented a man who, in the summer of 1903, while cleaning the chain of a bicycle, turned the wheel with his left hand and caused the index finger of the right hand to be caught between the sprocket wheel and chain, amputating the soft parts of the finger at the second phalanx. He came to the office with the first and part of the second phalanges stripped of the soft parts, exposing the bones and first joint. Dr. Frauenthal sent him back to the stable, about a mile away, for the thimble-shaped soft parts. After soaking them in hot saline solution, they were replaced with zinc oxide plaster and balsam of Peru, and healing took place kindly. The head of the first phalanx eventually necrosed and came away. The absence of the head of the first phalanx could be seen in the radiograph. Sensation was just returning to the part of the finger injured, though incompletely as yet.

Motor-Boat Fractures.—Dr. HENRY P. DEFOREST presented this paper and illustrated it with *x*-ray photographs. He said that in most instances the machinery of a boat, usually with gasoline as a motive power, was started by hand. The more or less heavy balance wheel of the engine had a permanent handle projecting from the rim, or a heavy brass or iron rod sunken in a socket and held in place with a spiral spring when not in actual use. When the engine was started this handle was seized and the wheel turned quickly around. Occasionally something happened and the engine started, oftentimes with great rapidity. The handle might escape from the grasp, might fly around, and strike one on the hand before the hand had a chance to get out of the way. The injuries resulting from this impact were usually trifling, but the speaker cited several cases to show that some of them might be very serious. Similar injuries occurred during the "cranking" of an automobile. The fact that the initial velocity of the flying handle was much greater than that of the human body, in a case of a fall, or that of falling timbers, stones, and the ordinary causes of fracture in every-day life, had a marked effect upon the lines of fracture, and caused them to resemble those produced by large caliber projectiles without the penetrating effects. The fracture, as a rule, was rarely transmitted to the weaker parts of the bone. So localized was the injury that fragments of bone might be broken off, or such small bones as those of the carpus might be individually broken. As a rule, the line of fracture was straight and the direction taken quite unusual. Diagnosis was often difficult. The dangers were now becoming known, and schools of instruction in the complete construction and management of motor boats were now established.

Duodenal Fistula; Its Treatment by Gastrojejunostomy and Pyloric Occlusion.—Dr. A. A. BERG read this paper. A duodenal fistula, unless it was of pin-hole size, usually occasioned a very rapid death from starvation. The duration of life after the establishment of such a fistula depended upon the size of the opening into the duodenum and upon the readiness with which the duodenal contents were discharged. All the numerous mechanical devices for the relief of this condition had proved inefficient. With the view of preventing the rapid deterioration of patients afflicted with duodenal fistula, Dr. Berg proposed (*Centralblatt für Chirurgie*, 1903) that a gastroenterostomy be established and the pylorus occluded. The proposition at that time had not been tested in actual practice, but since then he twice had had occasion to carry it out, and it was his wish to report on its efficacy in overcoming the otherwise fatal lesion and to suggest some points of practical importance in the technique of its performance. In the first case he reported it was evident that impending death was averted from duodenal leakage by the gastrojejunostomy and pyloric occlusion. The ultimate fatal issue was not due to the complicating duodenal leakage, but to cancerous cachexia. In reviewing the details of the operation, two important points came up for consideration. First, was it necessary in order to divert the chyme from the duodenum into the jejunum to occlude the pylorus, or was it sufficient to simply make a gastrojejunostomy. Second, if it was essential to occlude the pylorus, then great care must be exercised in applying the occluding ligature, lest it cut through the tissues. Regarding the first point, he said it was commonly believed that if a gastrojejunal fistula was established at the lower point of the stomach, the gastric contents would be emptied directly into the jejunum through this anastomotic opening, even when the pyloric opening in the stomach was patent. This was, however, an erroneous belief. Kelling's experiments upon dogs, and his own clinical observation, conclusively proved that when the pylorus was patent a gastrojejunostomy would not divert the chyme from the duodenum into the jejunum. Consequently, when they had to do with a duodenal fistula, it was necessary, not only to establish a gastrojejunostomy, but also to occlude the pylorus. With regard to the second point, however applicable Kelling's method was when they had to deal with normal serous coverings of the stomach and duodenum, it was not applicable when the peritoneal surfaces of these viscera had become brittle and friable, and fixed in inflammatory exudate. In such conditions, in order to occlude the pylorus, one must resort to a circular ligature. In the application of this ligature the greatest care must be exercised not to constrict the parts, for otherwise this ligature would be cut through the pylorus. This tendency to cut through was all the more prominent because of the usually poor vitality of such tissues. In cases of ruptured duodenum that might be followed by a fistulous opening, was it advisable to resort to a primary gastrojejunostomy and pyloric occlusion in addition to repairing the opening in the duodenum, or should they content themselves at the first operation with direct repair of the perforated viscus? In answer to this, Dr. Berg said that if the peritoneal surfaces surrounding the perforated part were normal, not brittle or friable, or fixed in inflammatory exudate, they had every reason to expect a successful issue by suture. But, if such was not the case, it was not likely that the healing by suture would occur, and, in such cases, it would be wiser at once to proceed to a gastrojejunostomy and pyloric occlusion. Again, if by the sutures they constricted the lumen of the duodenum sufficiently to interfere with the transmission through it of the chyme, it was likewise best to at once proceed to gastrojejunostomy and pyloric occlusion. But, if a primary gastrojejunostomy and pyloric occlusion had not been done, one should at

once perform them when the suture of the duodenal opening proved itself insufficient. Repeated attempts at repair of the viscus suture would almost invariably result in failure to effect its occlusion, and would be followed by death.

Dr. Charles H. Peck said that in all the cases of duodenal fistula he had seen the surrounding walls had been friable, rendering suturing uncertain. He had been fortunate in not encountering leakage afterwards. He did not believe that in all cases where this infiltration existed they would fail to get healing of the ulcer. He was accustomed to first place a large purse-string suture at some distance from the perforation before applying the Lembert sutures. There was no doubt but that the friability of the tissues caused the sutures to cut through. It seemed to him that in the acute cases of perforation, the cases in desperate condition, with leakage and a general peritonitis, that the performance of a gastrojejunostomy was dangerous and increased the mortality; he said he would be inclined to make an attempt to terminate the operation as soon as possible with a single suture.

Dr. Charles A. Elsberg had had only one case of ruptured duodenal ulcer, and he recognized the rationality of Dr. Berg's suggestion. He exposed the surface of the stomach and the ulcer, which was situated at the junction of the second and third portion of the duodenum, and he sewed the surface of the stomach over the ulcer, and with satisfactory results. The patient did well and made an entire recovery. He said he was struck at the time with the idea, whether it was not possible and feasible in cases of perforated duodenal ulcer to at once do a gastroduodenostomy. If the perforation was high up, he thought Dr. Berg's method a rational one, but with this exception; if the perforation was below the site of the entrance of the common bile and pancreatic duct, there would still be a continual leakage of bile and pancreatic fluid, and so be a decided factor in preventing the recovery of the patient.

Dr. Samuel Lloyd agreed with Dr. Berg that it was impossible to divert the stream from the pyloric end of the stomach in such cases by doing a gastrojejunostomy alone. If the object was simply to cause a rest of the part, gastrojejunostomy would not be efficient unless some method was adopted for closing the pyloric end. He did not agree, however, that a gastrojejunostomy should be made first, and before the duodenal fistula was closed; an attempt should be made to close the duodenal fistula. These cases would stand much operative manipulation. The dangers of peritonitis were not so great when operating in the upper part of the peritoneal cavity as in the lower part. Consequently, Dr. Lloyd attacked these cases more actively than if the fistula involved the lower portion of the peritoneum. Dr. Peck's suggestion of using a purse-string suture and then the Lembert's suture appeared to him as feasible. Dr. Elsberg's suggestion also appealed to him strongly. He recently had a case of duodenal ulcer with the ulcer extending from the pylorus into the duodenum. There were multiple ulcers, one of the pylorus and two good-sized ulcers on the anterior wall of the duodenum. In this case he carried out the suggestion of Dr. Elsberg, making a complete removal of the pylorus and brought up the duodenum into the wound, and with a perfect recovery. The fistula should first be closed if possible; if they failed, then they should proceed with the closure of the pylorus.

Dr. Berg believed that he had had seven cases of rupture of the stomach and duodenum to deal with; in five of these he effected a primary closure, knowing the suture line would remain intact. In two he was not able to effect this. He thought that in a large majority of these cases one could be able to tell, with a fair amount of certainty, whether or not the attempt to close the ulcer by suture would be successful. When the perforation was situated high up, the suture method was more likely to be successful, even though there was a considerable inflammatory exudate. If, however, the same inflammatory mass existed at the pyloric region, giving less room for bringing the parts together, attempts with suturing were likely to be less efficacious. He had absolutely no reason to propose primary gastrojejunostomy with pyloric occlusion in any case where the surgeon felt that the suture line would be a tight one, but where the surgeon felt that the suture would not be successful, the question of primary gastrojejunostomy with occlusion of the pyloric end should come up. With regard to the length of time that a patient would live after leakage, that depended upon the size of the hole in the duodenum. This question of primary gastrojejunostomy depended upon the character of the tissues surrounding the ulcer. If the indurated area was some distance around the perforation, this operation could not be trusted. Murphy's button was out of the question. The suture operation held out such a slight chance for success that the procedure should not be considered under such circumstances.

Stated Meeting, Held February 1, 1907.

Dr. John F. Erdmann in the Chair.

Plastic Repair After Removal of Carcinoma of the Cheek and Left Angle of Mouth.—Dr. Franz Torek presented this patient. An excision had been done by another surgeon, but the growth had recurred and carcinomatous glands had developed in the submaxillary region. Dr. Torek first extirpated the lymphatic glands by an incision from the chin to the hyoid bone, thence outwards along the boundary line between the floor of the mouth and neck, thence upward to a point behind the angle of the jaw. The flap was prepared upward and all the glands were cleared out. He next excised nearly the whole cheek and part of the upper and lower lips. The divided ends of the lips were united, leaving a large hole in place of the cheek. Remnants of mucous membrane of the cheek could not be approximated. As failure to replace the mucous membrane would result in cicatricial contraction and subsequent impossibility to open the mouth, a plastic operation had to be performed. Last year Dr. Torek presented a patient in whose case he had used the skin of the neck to replace the mucous membrane. In this case he took a long flap from the tongue with its pedicle at the root of the tongue, twisted it so that the raw side looked outward and the mucous membrane side inward, and he attached this to the margin of the mucous membrane of the cheek. The skin defect was closed by utilizing the flap which had been raised from the submaxillary region for the purpose of extirpating the glands. The skin was undermined still further upward into the open cut, thus making a broad bridge of skin attached in front to the chin and in the back to the skin over the ascending ramus. This bridge was moved upwards and sutured to the upper wound margin. Thus, a large defect was left under the floor of the mouth, which healed easily by granulation.

Dr. Charles H. Peck reported two instances which made him doubt, perhaps, the necessity of covering the inner surface with flaps of mucous membrane to prevent contraction.

A Cured Case of Cicatricial Stricture of the Esophagus.—Dr. Edward W. Peterson presented a male, about 22 years old, who had been employed as a "spieler" for a Coney Island show, and who drank some nitric acid by mistake. About eight days later he noticed that he could not swallow so-called hard food except with difficulty, and gradually he was able only to swallow soft foods. After a few weeks he had to live on fluids and at times even these would not pass down. Dr. Peterson said that several unsuccessful attempts were made to pass the stricture with various sized instruments. The stricture was located nine inches from the teeth. Finally, a small flexible bougie was introduced and, after a number of days of treatment, a No. 26 instrument could be passed. Following an attempt at divulsion with an esophageal divulsor,

the patient developed a cellulitis of the neck, which was followed by no ill results, but the lesson was taken to heart and the divulsion abandoned. The patient left the city, and when he returned he was greatly emaciated and unable to swallow water, except a spoonful at a time. All attempts to pass instruments failed. Finally, a thread was washed through the stricture into the stomach, a temporary gastrostomy was performed, the end of the thread fished out, and to it was attached a strong fish-line, which was drawn up through the esophagus out of the mouth. Several wire spindle bougies were then drawn up, and the stricture gradually dilated. Later, with a full-sized instrument in place, an internal esophagotomy was done, using the Abbe string method to chafe through the stricture. The patient was now free from any difficulty in swallowing, and now passed on himself once a week a full-sized esophageal bougie. The patient demonstrated the ease with which the bougie could be passed.

The Diagnosis of Imminent Perforation in Typhoid Fever.—Dr. Forbes Hawkes read this paper. Without going into the bibliography of the subject, the established facts warranted the following statement: The proportion of typhoid fever patients who had perforations varied in the different epidemics from 1 to 33 per cent., and probably from 6 to 10 per cent. was not far from the average. Osler had stated that one-third of the mortality in typhoid fever was due to perforation. Of this number about one-half might now be saved by operation if the most favorable conditions existed for early diagnosis and prompt surgical help. These favorable conditions were necessarily present to a greater degree in those hospitals in large cities that were provided with a corps of trained nurses in the wards, trained physicians on the house staff, and a sufficient number of attending surgeons for a prompt response to such emergencies. Operators agreed that every hour that elapsed between the perforation and the time of operation decreased by so much the patient's chances, and that other conditions being equal, good results should generally be obtained in operations done for ulcers that were either perforating at that moment or that had perforated just before. Any marked improvement, therefore, in the mortality records of these cases would have to come through a similar improvement in the diagnosis of the affection, or of the conditions which led up to the perforation. The so-called symptoms of perforation, "intense pain, marked tenderness, marked muscular rigidity or spasm, varying degrees of collapse, variations in the pulse rate and temperature, etc.," were in reality only the late symptoms of a previous peritonitis which had kept on developing many hours after the so-called perforation. It was his experience that the earliest symptoms of peritonitis in typhoid and in many other abdominal diseases were, as a rule, neither recorded nor noticed. Nurses should be carefully instructed to report to the house physician any pain in order that he might examine immediately for other signs of a beginning peritonitis. In a series of 500 cases observed in Osler's ward, McCrae stated that no pain existed in 208 cases (41 per cent.), and that pain existed during some time of the disease in 44 per cent. of the cases. If one considered abdominal pain alone it would help but little; other symptoms of a beginning peritonitis should be considered with it. He had seen a number of patients in whom other symptoms of peritonitis developed before that of pain; namely, muscular rigidity and tenderness, and in quite a number of cases the pain left before the muscular rigidity and tenderness, which persisted until the peritonitis had subsided. Even a very slight degree of muscular rigidity, when present *without pain*, should cause one to keep a watchful eye on the patient. If pain supervened, or if it existed at the time of the first examination, a surgeon should see the case at once, for two distinct danger signals were already set, and if they had localized abdominal pain and abdominal rigidity, they were almost certain to have one other symptom, tenderness. In many cases these were enough to warrant an exploratory operation if the patient was in good condition. The other diseases that were liable to occur in the abdominal region of a patient with typhoid fever that would give these three symptoms, without any peritonitis being present, were hysteria, lead colic, passage of a biliary or a renal calculus, and appendicitis without peritonitis (early). After ruling out these conditions one must look further for corroborating symptoms, as increased leucocytosis, slight shifting dullness in the flank, an increase in the blood pressure, etc. He said they were forced to conclude that a positive differential diagnosis of a perforative peritonitis or of an imminent perforation, was a very difficult matter, but a tentative one should be made much oftener than in the past at an early date, by examining the abdomen in the typhoid patients sufficiently often and with the utmost care. He believed the diagnosis of even mild peritonitis in a typhoid should mean operation and drainage if the patient was in a condition to stand it. After reporting two cases, Dr. Hawkes concluded that in many cases of typhoid fever a perforative stage of peritonitis was present which could be recognized as a beginning peritonitis if a sufficiently careful and a sufficiently frequent examination of the abdomen was made. They should divest themselves of the idea that the absence of pain in a given case ruled out any appreciable amount of peritonitis. Muscular rigidity and slight tenderness, usually localized, often preceded the symptom of pain by several hours. This prealgesic period would seem to be the very best period in which to institute peritoneal drainage of a loop of intestine with swollen ulcer patches, thus relieving the patient from the extra burden of the secondary infection and giving the ulcers a chance, if they were going to break down, to do so through a drainage tract. He stated that he had not intended taking up the symptoms of perforation in his paper, but of the preperforative period.

Dr. George E. Brewer believed that Dr. Hawkes had taken a great step in advance in the recognition of this preperforative stage in typhoid fever, and the report of his cases was interesting.

Dr. Joseph A. Blake said he had lately looked up the literature at Roosevelt Hospital, and found among 500 cases of typhoid fever the proportion of perforation was 48 to 100, a percentage which he considered quite high. He never felt sure of his diagnosis of the preperforative stage. When the three cardinal symptoms were present, *i.e.* pain, muscular rigidity, and tenderness, operation should be done. But it was often difficult to elicit these symptoms. If patients were apathetic, they would not complain of pain. Meteorism might be present, giving such a doughy resistance that muscular rigidity could not be determined. The diagnosis was exceedingly difficult. One should be satisfied to make a diagnosis of the perforation itself rather than to attempt the preperforative stage diagnosis.

Dr. Nydegger, U.S.M.H., called attention to the value of the leucocyte count in the diagnosis of perforation in typhoid fever. Often at the end of the third week the leucocytes number 7,000 or 8,000, some 3,000 below the normal. He saw a case of perforation two months ago at the Marine Hospital, where he was not sure of perforation, although he strongly suspected it. He made a number of counts, and found the polymorphonuclears had increased about 20 per cent. That count was made about three times, one hour between each count, and on the strength of this increase, operation was performed, the perforation was found, and closed.

Dr. Hawkes closed the discussion.

The Operative Treatment of Fractures at the Elbow (Lantern Slide Demonstration). Dr. Carleton P. Flint read this paper.

Dr. Joseph A. Blake said that in fractures around the elbow-joint a great many complications might occur, and no one should attempt treatment unless he was cognizant

of them. With regard to the time of operating upon these fractures, Dr. Flint took the ground that operation should be deferred from five to ten days to two weeks after the injury; Dr. Blake thought it was better to operate earlier. To be sure, there were certain objections, such as devitalized tissues, and one should be governed by the possibilities of infection in these cases. With regard to treatment, he used a drill which required very little force, and which did not interfere with the apposition of the fragments, an ordinary twisting drill. In fractures of the olecranon one was not so apt to have the interposition of soft parts as in fractures of the patella. The incision to be used must depend upon one's own experience in making these incisions.

Dr. George E. Brewer could recall no work on surgery which gave such rules or laid down such principles in the treatment of these cases, as did the paper of Dr. Flint. The paper covered the ground thoroughly, and would no doubt be a guide in the future in the treatment of elbow injuries. The lower end of the humerus furnished a great variety of injuries; they were very complicated and few could obtain increased functional activity of the joint, and any aid was to be desired. A good many of the cases Dr. Flint had operated upon had been under Dr. Brewer's observation, and, as a matter of fact, for the past six or eight months, at Dr. Flint's request, he had turned over to him the worst cases of vicious union and ankylosis that came in the hospital. It was from this very unfavorable class of cases that Dr. Flint had gotten his material. By intelligent operative treatment a great deal could be accomplished in fractures at the elbow.

Dr. Samuel Lloyd said he was much interested in this subject, and some time ago he had read a paper on it before this Section. He had had an experience with thirty or forty cases of fracture at the elbow, which had been followed by vicious results; in his experience he had never had a case of non-union in the young. He believed they should get away from the old-fashioned notion that the elbow should be fixed in cases of fractures; the position of the joint should be that which best held the fragments in apposition, no matter what that position might be. They then would have fewer cases with decreased range of motion, or fixation at the elbow.

Dr. John B. Walker said that oftentimes one would apparently not get good results in children, but at the end of three or four years better results followed.

Dr. Joseph Wiener called attention to a suture material, thin silver wire made into a cable, which made a pliable material, and was even stronger than a silver wire of the same caliber. In cases of fractures at the elbow he emphasized the fact that any one position could be maintained for any length of time.

Dr. Flint closed the discussion.

The Hand of Iron in the Glove of Rubber.—Dr. Robert T. Morris read this paper. (See page 304.)

Resected Gut; Silver Wire Filigree.—Dr. Joseph Wiener presented a specimen of resected gut showing the silver wire filigree, devised by Bartlet of St. Louis, in position. This filigree consisted merely of thin silver wire arranged in the form of a figure-of-eight with but one cross-piece.

SECTION ON DERMATOLOGY.

Stated Meeting, Held February 5, 1907.

Dr. A. R. Robinson in the Chair.

Acne Keratosa.—Dr. W. S. Gottheil presented this patient, a Russian girl 11 years old, five months in this country. She had suffered from the eruption since infancy; it had varied in severity at times, but had never entirely disappeared. Individual lesions lasted a long time (weeks or months), and then dried up, their hard tops falling off; and occasionally leaving a mark. Her general health was fair, her internal organs free. The history was defective, the child being an orphan. Scattered over the body were several hundred lesions, grouped in certain localities, and identical in appearance, though varying in size. The smallest were less than pinhead in size, the largest as big as a French pea. They were circular acuminate papules of a dull red color, on a normal skin base, and with a hard, yellowish-brown plug in their center. The largest papules tended to become irregularly circular or oval; and the central plug was large and hard. Even the smallest papules showed this central plug, removal of which left a cup-shaped glistening depression, and usually there was no pus. A characteristic feature was the formation of a lesion of precisely similar character, with reddened base and central hard plug, wherever there had been accidental lesions, such as scratches, these lesions assuming the elongated or irregular shape of the traumatism. The eruption was fairly well distributed over the body, but the papules were distinctly grouped in certain places. The largest collection of them was on the upper buttocks on both sides, where there were a hundred or two, mostly small in size. There were a fair number on the outer surface of the thighs, and some on the lower legs, especially about the ankles. The center of the back was free, but the shoulders and the skin over the shoulder blades showed large groups of lesions. There were a few on the upper anterior chest area, and more of them on the lower abdomen. The arms were markedly affected, especially the extensor surfaces; there were some on the flexor aspects, and many on both surfaces of the wrists. There were a large number of characteristic lesions on the backs of the hands. There were a few scattered over the face, as well as some scars that might have been the result of previous, possibly infected lesions. Palms, soles, and scalp were free. In 1904 Dr. Gottheil had described two cases of this affection, which is identical with the *acné cornée* of Hardy, Leloir, and Vidal, the *acné kératique* of Leredde and Tenneson, and possibly the keratosis follicularis contagiosa of Brooke. It differs from the ordinary lichen pilaris or spinulosus, in that the hyperkeratosis affects the sebaceous glands proper, rather than the hair follicles, and that the chronic inflammatory process is much more marked than in the pilous affection. In fact the microscopic examination in his earlier cases showed that the secretory ducts of the sebaceous glands were chiefly affected; the distended duct forming a sack that was pointed below, and broad and crateriform, and filled with masses of imperfectly cornified epithelial cells above. The sebaceous cells of the secreting portion of the gland below were compressed and atrophic. The chronic inflammatory process affecting the sebaceous glands seemed to be more nearly related to the acnes than to the pure keratoses; and it might be related also to the so-called cutaneous horns. In one of his earlier cases, the keratotic plugs at one or two places formed distinct, though minute, horny excrescences. Future study must decide whether it had any connection with acne necrotica or the tuberculides.

Keratosis of Palms and Soles from Arsenic.—Dr. Robinson presented a woman, aged twenty-seven years, who had had psoriasis of the whole cutaneous surface, except palms and soles, since she was six months old. The psoriasis was profuse over body. She had been under treatment ever since childhood. Sometimes the eruption was slight and again extensive, but had never occupied the palms or soles. Five years ago she took arsenic in increasing doses until she took eighteen drops of Fowler's Solution three times a day, and continued this amount for about two months, when an eruption appeared upon the palms and soles simultaneously, and remained to the present time, although the psoriasis nearly disappeared two years ago and again one year ago for a short period. According to the statement of the patient, an intelligent, educated woman, the eruption upon the palms and soles had not changed as regards the number of lesions since their

first appearance. They were confined to the palms and soles, were irregularly distributed, and varied in size from a pinhead to a small pea. Each lesion upon the palm was sharply limited, conical or flat in form, firm with a roughened or wart-like surface in central portion. There were no inflammatory symptoms present. The patient had been in the habit of cutting off the summit of the conical lesions when they caused annoyance. At the metacarpophalangeal junction ridges of calloused epidermis existed. Large areas of calloused skin were present on the soles in the usual places for normal thickenings from pressure. The long continuance of a single lesion in a definite shape without increasing in size, the warty character of the surface and the absence of inflammation, excluded psoriasis. Microscopical examinations of a small-pea-sized growth showed the corneous layer much thickened, with parakeratosis in parts; the stratum lucidum thickened, the granular layer well developed. Even over regions where the parakeratosis was present, the rete was increased greatly in thickness throughout the interpapillary rete prolongations extended deeply into the corium. The papillæ were not edematous, the papilla blood-vessels were dilated, but there was no marked infiltration, either of polynuclears or other bodies. The corium was normal, also the sweat glands in the corium. The warty character of the surface of the lesions depended upon the deep and broad furrows in the corneous layer from the dilated excretory sweat duct.

Dr. DILLINGHAM said that the case was very unusual and interesting, and that there was no question about the diagnosis being correct. He added that Dr. Robinson had not mentioned that the hollows of the feet were not involved, and that there was a marked callosity near the toes on the left foot about an inch long and one-eighth of an inch wide, formed by a number of lesions coalescing.

Morphœa.—Dr. WILLIAMS presented this patient, a woman twenty-eight years of age. She first noticed brown spots on her abdomen in the spring or summer of 1901, during her third pregnancy. They were about half an inch in diameter, smooth, not elevated, and showed no apparent thickening. They never disappeared, but were said to have become hard about six months ago: as there was a fresh outbreak of many sclerodermatous patches at that time, this statement may rest on faulty observation. Early in 1903 she noticed a hard, white swelling on the flexor surface of the left wrist, and others on the back of the right hand and the dorsum of the right foot. About two years later, hard spots developed between the shoulders and below each clavicle. These gradually became brown, and all softened while the woman was pregnant with her last child (born in November, 1905), leaving only a brown stain on the slightly dry but perfectly pliable skin. She felt very well during her last pregnancy and for some time after, but about six months ago the present eruption appeared. After this she worried about the condition of her skin, lost flesh and strength, and as she moved around more, she noticed a beginning prolapsus uteri. The first thing to call attention to a spot would be the itching, which sometimes was very severe. Scattered over the trunk were round, oval or oblong placques of thickened skin, brownish in color and slightly dry. The surface was even and firm, sometimes harsh. The border was fairly regular and faded rather quickly into the normal skin. Neither enlarged veins nor a violet border was observed. The spots on the left wrist and the right hand showed only a brown stain and slight atrophy. The pulse was eighty to the minute and regular. The thyroid was enlarged, but there was no exophthalmos. The urine was normal. The great improvement during the last pregnancy, and the evident enlargement of the thyroid were very suggestive of some relation between the secretions of these ductless glands and the disease, but the data available were too scanty to warrant any positive conclusion in this matter.

Keratosis Palmæ Hereditaria.—Dr. WILLIAMS presented a woman, her daughter, and her granddaughter, all showing this condition. The grandfather of the oldest patient was the first member of the family known to have had this disease. Three of his children, one male and two female, were affected, while two others, one male and one female, were free. Of his other children, no record could be obtained. The mother of the oldest of the patients presented, one of the affected females of the second generation, had nine children, of whom five, girls, were affected, while two boys and two girls were free. The second patient had two brothers, one affected and one free, and one daughter, the third of the patients shown. Of the fifty-nine descendants of whom a history was obtained, twenty were affected, and the others free. In no case, so far as could be ascertained, did the disease skip a generation: if any of the family escaped the disease, his or her children escaped also. The disease always appeared in infancy, the hands looking as if they had been soaked in water a long time, as the patient expressed it. The soles were generally free, but walking barefoot always excited the disease there also. Even with great care, sparing the hands as much as possible, the harshness and blackness persisted to a certain extent, but they were made much worse by rough work. The condition of the hands of the three patients presented was practically the same, differing only in degree. The backs of the hands were free, except over the joints, where the horny layer was slightly thickened and the natural lines of the skin exaggerated. On the oldest of the three the nails were rough and uneven, and there was a heaping up of horny matter beneath the free border. One of the little girl's nails was also rough, which was said to be the result of an old paronychia, and there was the same condition at the free border of the nails as in the grandmother. On the palmar surface the disease was most developed on the finger tips, and least on the hands. None of the patients showed the thick, horny plate which was so characteristic of the disease; instead, the skin was fairly pliable, the distinguishing features being a moderate thickening of the horny layer, with multiplication and exaggeration of the usual markings, so that the affected regions were divided by black lines into irregular polygonal areas.

Case for Diagnosis.—Dr. WILLIAMS presented this patient, an Italian, twenty-two years of age, three years in this country, a shoemaker by occupation. He denied ever having had a chancre, and gave no history of alopecia, sore throat, headaches, or eruption, until the present disease began. About ten years before, he first noticed a rounded elevation, about a quarter to a half inch in diameter, near the ulnar border of the dorsal surface of the right hand, at a point where the skin was irritated by the pressure of the thread he used in his work. In the next two months a similar lump appeared on the ulnar border of the right wrist, and a third about the middle of the dorsal surface of the right forearm, two inches above the wrist. This last lesion was cut out when it was about two weeks old, and has never recurred. Similar masses appeared on the back of the right hand, from time to time, up to two years ago. He said that none had developed since, but it was hard to communicate with him, and the details of the history were unreliable. The eruption was usually worse in summer, and it never disappeared entirely. For the past five years the patient had noticed a swelling over the back of the right wrist. From time to time during the past three years he had had an eruption on the neck, chest, and hands. Last year there was a patch about two inches in diameter on the back of the left hand, which healed without treatment. Four months before Dr. Williams showed him he had lost the sight of the left eye, complete blindness developing in a few minutes. Since that time he had been taking a medicine by drops, first ten drops three times a day, increasing to thirty drops, and under this treatment sight had improved. When presented there was complete loss of vision in the right half of the field of vision of the left eye, while the left half was

much restricted above. The eruption on the right hand had never been painful or tender, but the swelling and stiffness interfered considerably with the motion of the fingers. The eruption consisted of rounded dull red elevations, each surrounded with a red zone. All presented a crateriform opening at the top, from which serum oozed out. Two weeks ago they had discharged pus. Over the greater part of the area the inflammatory redness was continuous, and there was a moderate diffuse thickening. The border was irregular and ill-defined. The patient had taken mixed treatment for two weeks, and in that time the masses had shrunken greatly. Sections on microscopic examination showed an epithelioma, extending deeply into the subcutaneous tissue, and showing a very marked inflammatory infiltration in the corium and subcutaneous tissue. Cell-nests or pearls were very numerous. Smears from the largest round spot, and from the thin purulent fluid discharged from a smaller nodule were negative for tubercle bacilli, actinomyces, and *Spirochæta pallida*. Cultures gave a pure growth of streptococcus. Clinically, the lesions showed no resemblance whatever to epithelioma, and in spite of the pathological report, Dr. Williams believed that the diagnosis lay between tuberculosis and syphilis.

Dr. HUBBARD said that he thought this was a case of mixed infection of a chronic nature; and that the man's occupation, shoemaking, and his nationality, lower class Italian, afforded every opportunity for continued and repeated exposure to unhygienic conditions. He believed that treatment with a wet dressing of aluminium acetate would lead to speedy cure, and reported two cases of a similar condition, of eighteen months and two years standing, respectively, the second of which had been diagnosed as tuberculosis cutis, both of which healed in six weeks under that treatment.

Dr. DILLINGHAM said that the case bore no resemblance to epithelioma or to syphilis, and that he considered it tuberculosis verrucosa cutis.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

207th Regular Meeting, February 1, 1907.

THE PRESIDENT, DR. ROBERT ABBE, IN THE CHAIR.

The Salt-Free Diet in Chronic Parenchymatous Nephritis.—By Dr. GEORGE L. PEABODY. (See page 381.)

Dr. BEVERLEY ROBINSON said he had read of a number of persons who had been on a salt-free diet, and they did not seem to like it on account of the lack of palatability of the food. He asked Dr. Peabody whether any of the cases he had reported had been followed up for any length of time, and if so, how long the relief from symptoms had lasted? The speaker said that in one case that had been communicated to him, there had been marked improvement under the salt-free diet, the patient's edema disappearing almost entirely, and the amount of albumin in the urine decreasing. This patient was an inmate of the Johns Hopkins University Hospital, and in order to test the value of the treatment one of the house staff gave him quite a quantity of salt in the course of twenty-four hours. This was followed by a rapid recurrence of the edema, and death. In this general connection, Dr. Robinson said, he wished to call attention to the important rôle that salt apparently played in the diet of certain animals, especially cattle.

Dr. LEWIS A. CONNER said that while he was thus far unable to speak regarding the permanency of the improvement that had followed the use of a salt-free diet in chronic parenchymatous nephritis, he was under the impression that it afforded more than simple transient relief from discomfort. He was inclined to regard it as a method of relieving the edema rather than the nephritis itself, but certainly the results of the treatment in these discouraging and almost hopeless cases had been very surprising. He recalled particularly two patients in his hospital ward. They occupied adjoining beds; both were suffering from general anasarca and severe dyspnea, requiring frequent tapping of the chests and abdomen, and for weeks every possible method had been tried to relieve their waterlogged condition. Then the salt free diet was instituted, and in both cases the anasarca rapidly disappeared; the patients were up and about in a few days, and finally left the hospital feeling well, although their urine still showed evidences of the nephritis. Dr. Conner said that in the cases he saw the patients were not at all disturbed by the lack of salt in their food. While they perhaps did not like it, they were perfectly willing to submit to the treatment. The speaker said that colonic irrigations of physiological salt solution, which had come to be regarded almost as a routine part of the treatment of nephritis, were, he thought, contraindicated in these cases of marked edema. Instead, a hypotonic salt solution should be used, or, better still, the sodium bicarbonate solution to which Dr. Peabody had referred.

Dr. PEABODY, in reply to a question as to whether the abstinence from salt in these cases implied a reduction in the quantity of fluid taken, said that it usually coincided with a restriction as to fluids. These patients, as a rule, bore the restriction of fluids very well. In all of the cases where the treatment had been tried, the albumin in the urine decreased in quantity, although it did not always completely disappear. No claim was made that the treatment had any curative effect on the kidneys; it had merely a transient effect upon a serous and distressing symptom.

Dr. ANDREW H. SMITH said we should have to accept the conclusion that anasarca was due to some condition of the tissues themselves, and not to the blood pressure or any condition of the blood or blood-vessels. There was no reason for believing that under certain conditions the fluid of the blood transuded more readily into the tissues, but rather that there was something in the tissues themselves that led to the accumulation of the fluid, and perhaps the observations made by Dr. Peabody and others supplied the necessary explanation for such phenomena. If there was a quantity of salt distributed all through the tissues, making them greedy for water, we had reason enough for anasarca. The beneficial effects of the salt-free diet also offered a very reasonable explanation of the good results of a milk diet in the treatment of certain nephritic manifestations. In confining a patient to milk, he was practically given a salt-free diet.

Dr. FRANCIS P. KINNICUTT said the results of the salt-free diet treatment reported by Dr. Peabody were very much in accord with those of Drs. Miller and Kelly, and while they might not be permanent, they were at least very desirable, as they relieved these patients of their most distressing symptoms. Laboratory tests had shown that in healthy individuals the sodium chloride balance was easily maintained, even with very rapid and decided variations in the sodium chloride intake, and it had also been shown that this balance was not maintained in the presence of certain renal disturbances. Under the latter conditions the salt accumulated in the tissues and edema appeared. Dr. Kinnicutt said that if the salt-free treatment afforded even temporary relief to this class of patients it would be a great advance in our therapeutics.

Dr. H. NEWTON HEINEMAN of Naul[illegible], Germany, said the effect of salt upon healthy cattle, to which Dr. Robinson had referred, would have no bearing upon its use in pathological conditions, such as those that formed the basis of Dr. Peabody's paper. The beneficial effects of the salt-free diet in the treatment of certain kidney lesions would probably find their explanation along the lines indicated by Dr. Andrew H. Smith, and outside of the blood-vessels themselves. The weight factor and one that was frequently lost sight of in connection with the facts of this paper was the lymphatic pressure. While the con-

dition of the capillary blood-vessels and circulation was, of course, exceedingly important, and doubtless explained many pathological conditions, we should not lose sight of the fact that variations in the lymphatic pressure were probably a most important factor in the immediate cause of the exosmotic changes that the reader of the paper had discussed. The speaker said he thought it not at all unlikely that a good deal of our advance in medical knowledge during the next decade would be made in connection with changes in the lymphatic circulation, with which the tissues dealt more immediately than they did with the capillary circulation. The osmologists, of which Zirkel was a brilliant exponent, were doing the work. Studies by others, such as continued by him for three years and not yet concluded on urinary cryoscopy, with investigations of the urine freezing point, would certainly advance renal pathological knowledge. Dr. Heineman said that in the treatment of heart cases he was no longer content with producing heart compensation, but tried to bring about body compensation, which meant a proper relation between the ebb and tide flow of the entire circulating medium, of which the heart was an important part, but still only a part. The results obtained by Dr. Peabody by his salt-free method of treatment were certainly excellent. In discussing the ultimate effect of the treatment, the speaker said there was no question but that even the temporary relief from pressure of a kidney that was diseased would give that organ a chance to recover itself. He had frequently seen examples of this at Nauheim, where the albumin, with hyaline and even slightly granular casts, would disappear from the urine after proper regulation of the patient's diet and habits; this would ofttimes effect a proper regulation of the circulation, without the necessity of resorting to treatment directed toward the kidneys themselves, and he could recall cases where it had prolonged life in the face of a very bad prognosis.

Dr. Peabody, in closing, said there was no reason to believe that salt-free diet in cases of chronic parenchymatous nephritis had any permanent curative effect. On the contrary, there was every reason to believe that if these patients resumed their usual occupations and habits of diet, the anasarca would return. The most rational outlook of the treatment was to ascertain in each individual case how much salt that particular patient could take without producing edema, and limit the intake to that quantity. The probabilities were, however, that such a fixed amount would not be permanent, because, as time passed on, the kidneys would probably degenerate more and more. Dr. Peabody said he had never seen a case of chronic parenchymatous nephritis at any period of life that fully recovered, and the most that could be hoped from this method of treatment was to relieve the distressing symptoms of these patients, and perhaps render them fairly comfortable and even give them a chance to resume their occupations. There was no reason why this treatment should not be maintained more or less permanently, as the natural food contained a reasonable amount of salt. Dr. Peabody said that in one of the cases reported in his paper the patient was a boy whose anasarca was very marked indeed. The edema involved the genitals, and the face was swollen to such an extent that the eyes were nearly closed. The anasarca disappeared entirely in about two weeks under a salt-free diet. The boy was then ordered 1 gram of salt daily, and there was no recurrence of the edema. He was then given two grams daily, and there was no recurrence. The dose was then increased to three grams daily, and this was followed by a gradual recurrence of the edema. This experiment seemed to indicate that this child could safely take two grams of sodium chlorid daily, but that he could not tolerate beyond that limit, taking no account of the salt which was present in his meat, milk, and other articles of food.

Modern Hospital Construction—with Lantern Illustrations.—Dr. W. Gilman Thompson read a paper on this subject, which he illustrated with numerous lantern slide illustrations of hospital construction in this country and abroad. He called attention to certain advantages of the pavilion type of hospital, of which the Policlinico at Rome and the new Virchow Hospital at Berlin were good illustrations. They each were constructed of more than fifty buildings, one or two stories high, and while this type of institution increased the original cost for land, it promised a better classification and grouping of cases. Many of the modern hospitals that he had visited in Europe were remarkable in their completeness, and included every possible facility for the most advanced methods of investigation and treatment. Dr. Thompson said the most encouraging advance in modern hospital construction was that the interests of the individual patient were considered paramount. It implied an intelligent consideration of the needs of different groups of patients, and an appreciation of the fact that fresh air and environment had to go hand in hand with medication in order to obtain the best results. The entire subject could be epitomized in the motto that appeared over the entrance of one of the great German hospitals, namely, "In the treatment of the disease, do not omit to treat the man."

College of Physicians of Philadelphia.

At a stated meeting, held February 6, Dr. John H. Musser read a paper entitled "Infections Within the Thorax—Empyema." He dwelt on the relation of this disorder to antecedent pneumonia and pleurisy, as well as to typhoid fever, scarlet fever, measles, and other infectious diseases. Its presence was to be suspected when the signs of a collection of fluid of greater or lesser extent persisted after the subsidence of the primary affection, especially if there was a continuance, and particularly an exacerbation of the leucocytosis that previously existed, or if such a leucocytosis developed when previously there had been none. The x-ray might prove of service here by showing a shadow that was to be referred to the purulent accumulation. Often the physical signs were related to the fissures between the lobes, where collections of pus were prone to form. In addition, there were likely to be chills, fever, and sweating, with cough and pain, and emaciation. Exploratory puncture might fail to disclose the presence of the pus, and often it was necessary to resect a rib, after which the introduction of forceps or the finger would succeed in evacuating an abscess, while the establishment of satisfactory drainage would lead to eventual recovery. Dr. Theodor Schott of Bad Nauheim read by invitation a paper entitled "The Treatment of Chronic Diseases of the Heart." He pointed out that adequate results were often not obtained from the treatment of chronic diseases of the heart by mere rest in the recumbent posture and proper restriction of the diet, while the drugs commonly employed, namely digitalis, strophanthus, strychnine, and the like, while useful, were not curative. As a result, resort must often be had to physical methods of treatment, such as exercises of one sort or another, and bathing. Great care must be taken in the employment of these measures, and the needs of the individual case should be always fully considered. Dr. Schott described the various forms of thermal and carbonated and saline baths available at Nauheim, and also the form of gentle resistance exercises applied in suitable cases. By means of charts he illustrated the reduction in the size of dilated hearts observed in actual cases as a result of both the baths and the exercises. In his opinion, the favorable results of the treatment were to be attributed especially to the tonic effects produced upon the muscular system including the myocardium. While it was to be preferred that the treatment should be carried out under the most favorable conditions such as were to be found at Bad Nauheim, it could also be carried

out satisfactorily at the patient's home if applied with intelligence and gentleness. An approximate artificial reproduction of the baths could be made by means of the saline constituents prepared in such a form as to secure the generation of carbon dioxide, and by adjustment of the temperature and the proper proportions of the several saline constituents of the natural waters.

New Instruments.

A SUCTION AND INSTILLATION SOUND, FOR USE IN THE TREATMENT OF CHRONIC POSTERIOR URETHRITIS WITH INVOLVEMENT OF THE PROSTATIC FOLLICLES.*

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Cases of urethritis in which the prostatic urethra has been involved, especially those where many of the follicles have been infected and which have become chronic, will offer in many instances a condition exceedingly difficult to overcome, necessitating a long course of treatment, with the outcome problematical, and discouraging alike to patient and physician.

Such a case will present but few subjective symptoms; there is but little if any complaint of pain or discomfort; the urine is mostly clear, but floating about in it are numerous "tack-like" bodies, floating with head down, the contents of certain of the prostatic follicles, which have been extracted or expressed during micturition. If they are examined under the microscope they may show the presence of gonococci and pus cells, or only pus cells, but if pus cells alone are present it is probable that, though gonococci cannot be demonstrated, they are nevertheless lurking in the depths of the follicles. There may also be present shreds and threads, due to erosions, hyperplasias, or catarrhal conditions of the posterior urethra, or to a similar state of affairs in the anterior portion of the canal.

The prostate is either normal in size, or somewhat enlarged, or boggy, indicating recent or comparatively recent inflammation.

The previous history of the case is that of anterior urethritis, with extension to the posterior urethra, and with or without inflammation of the prostate.

As to the treatment of these cases, the balsams do no particular good; hand injections are not serviceable, except perhaps to help to eradicate a subacute or chronic anterior urethritis, which may exist at the same time, because the injected fluid does not reach the diseased area in the posterior urethra. Benefit is derived from retrojections or irrigations of silver nitrate and permanganate of potassium, or instillations of solutions of picric acid, silver nitrate, or sulphate of copper in varying strengths; massage of the prostate; the passage of either warm or cold sounds; suppositories of ichthyol or ice; rectal irrigation with hot or cold water; general tonics.

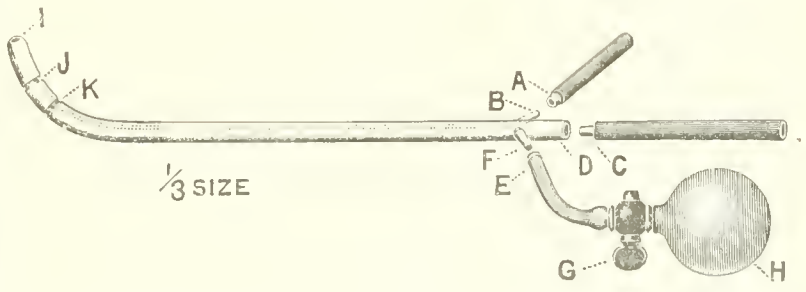
*Presented before the Riverside Practitioners' Society, November 13, and the West End Medical Society, November 24, 1906.

In spite of our efforts, however, progress is usually at best but very slow, and the reason for this is, in my opinion, that our methods are faulty in this respect, that in most of the treatments suggested above not all of the infected follicles and diseased areas are brought within the sphere of action of the medicinal or mechanical measure used at each treatment.

In massage, the follicles on the posterior wall of the prostatic urethra only are acted upon, while those on the anterior wall are in no way affected; when an instillation is used, because of the apposition and folding together of the mucous membrane of the urethra, a good many infected follicles and diseased areas must of necessity escape the medication at a given treatment; moreover, the medication will with difficulty penetrate to the depths of the diseased follicles, and then probably only those from which the contents have been expressed or extracted during micturition; suppositories, rectal irrigations, and tonics are measures which aid in a general but not in a local way.

Of the methods suggested above the most good follows the use of the sound, or retrojections and irrigations, and the reason is plain, for in both methods the mucous membrane is acted upon throughout its whole extent, and consequently a greater number of diseased follicles, erosions, and hyperplasias are brought under treatment.

Because of these facts and as an aid in the treatment of these cases, I have devised the instrument,



of which a cut is here presented, and which was made for me by the Kny-Scheerer Co.

The instrument consists of an outer shell (No. 25 of the French scale, in this particular one, but it can be made in any size from 20 to 30) and two inner tubes, D-I and B-J. Between the outer shell, which has the shape of a sound, and the inner tube D-I is a space, the only openings to which are the fine holes indicated in the narrow but deep groove at K, and through the nipple at F. The tube B-J passing through the nipple at B, and the space between the outer shell and the tube D-I, ends by a single small opening in the very narrow and deep groove at J; it is made of silver and is quite small. The grooves at J and K are made very narrow and deep, so that when the instrument is in place it will be impossible for the mucous membrane to lie in contact with the surface of the groove, but will rather be stretched across it, leaving a small cavity between the membrane and the bottom of the groove.

When the instrument is in place in the urethra the air is exhausted from the rubber bulb H, and E is firmly attached to the nipple at F, the bulb is then allowed to expand. A tendency to form a vacuum is at once produced, a suction is exerted on the mucous membrane covering the groove K, and the contents of the follicles are drawn out or at least loosened. The instrument is then slowly

withdrawn, at the same time, A being firmly joined to the nipple B, any desired strength of silver, copper, or picric acid solution is instilled through the tube B-J, by means of an instillation syringe attached to the distal end of the rubber tube A.

The fluid instilled will medicate the mucous membrane covering the groove at J throughout its whole extent; moreover, the membrane being still on the stretch, after the suction exerted upon it at K, and the follicles being emptied, or, if not emptied, their contents at least loosened, the mouths of the follicles will still be open and the fluid instilled will penetrate to a greater degree into them, and so attack the gonococci which lie at the bottom of the follicle, or act upon the loosened contents so that when next the patient voids the contents of his bladder they will be more readily washed out. Likewise any ulcerated or denuded areas in the urethra are stretched and the medication is applied to all portions of the area.

If it is so desired, any solution thought to be necessary can be introduced into the bladder through the tube D-I, after the instrument is in place, and before commencing to withdraw it; the solution can be prevented from escaping by joining C and D and closing the distal end of C with either a pinch or stop-cock.

An occasional patient with a small meatus will complain of pain when the instrument is introduced, as the grooves pass the meatus, otherwise patients tell me in answer to my inquiries that they experience no more inconvenience or pain than is felt in the passage of an ordinary sound of the same diameter.

It is not claimed for this instrument that it is a cure-all, or that it is suitable in every case, but only that it is suitable in selected cases of the type which has been described above, and that it is of considerable aid and value when so used.

The points of value which this instrument possesses are in my opinion as follows:

1—The ability to inject into the bladder any desired solution before beginning further treatment.

2—The beneficial effect produced by extracting or loosening the contents of all of the diseased follicles on both the anterior and the posterior wall of the prostatic urethra.

3—The medication of the mucous membrane while it is on the stretch and the penetration of the medicinal fluid into the follicles.

4—The benefit to be derived from the passage of a sound.

5—The ability to use any one or all of the procedures outlined above in but one manipulation of the urethra.

117 West Seventy-second Street

Cysticercus Cellulosæ in the Tongue of a Child.—L. De Gaetano describes a rare case of cysticercus cellulosæ in the tongue of a child of ten years. The child had associated with dogs and other animals, but there had been no symptoms of tenia in the child or any other members of the family. For two years there had been noticed a nodule on the left side of the tongue, which latterly had grown rapidly until it was the size of a large nut. It was covered by normal mucous membrane, hard, and embedded in the muscle of the organ. When enucleated it was found to constitute a cystic tumor with a firm capsule, from which on cutting there flowed a limpid liquid, and the internal surface was covered by a yellowish-white membrane, at one portion of which was located a small white mass, the egg of the tape-worm. The larva must have reached the stomach or duodenum, when it was liberated by the digestive juices and the animal must have migrated to its permanent location by way of several other organs.—*Rivista di Clinica Pediatrica*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 2, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	418	192
Diphtheria	301	51
Measles	326	6
Scarlet Fever	297	17
Smallpox	4	—
Varicella	86	—
Typhoid Fever	41	9
Whooping Cough	51	7
Cerebrospinal Meningitis	14	12
Malarial Fever		
Totals	1538	294

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 1, 1907:

SMALLPOX—UNITED STATES

		CASES.	DEATHS.
California, Los Angeles	Feb. 2–9	2	..
Georgia, Augusta	Feb. 12–19	6	..
Illinois, Castleton	Jan 12	2	..
Chicago	Feb 16–23	2	..
Galesburg	Feb 9–16	11	.
Jacksonville	Jan 11–15	3	.
Indiana, Elkhart	Feb. 9–16	3	..
Indianapolis	Feb. 10–17	8	..
Lafayette	Jan 27–Feb. 4	2	..
"	Feb. 4–18	1	..
South Bend	Feb. 9–16	2	..
Vincennes	Feb. 9–16	1	..
Iowa, Mahaska County, Oskaloosa included	May 28–Feb. 22	141	
Kansas, Kansas City	Feb. 9–16	3	Imported
Louisiana, New Orleans	Feb. 9–16	10	5 imp't'd.
Mississippi, Natchez	Feb. 9–16	3	..
Missouri, St. Joseph	Feb. 9–16	30	..
St. Louis	Feb. 9–16	1	..
New York, New York	Feb. 9–16	2	..
Ohio, Cincinnati	Feb. 16–22	2	..
Washington, Spokane	Feb 9–16	12	..
Wisconsin, La Crosse	Feb. 9–16	2	..
Milwaukee	Jan. 26–Feb 2	4	..
"	Feb. 9–16	4	1

SMALLPOX—FOREIGN.

Africa, Lorenco Marquez	Dec. 1–31	..	1
Brazil, Pernambuco	Jan. 2–15	..	68
Canada, New Brunswick	Feb 21	..	Present
Nova Scotia, Musquash—Glasgow	Feb 9–16	17	..
Truro	Feb. 9–16	..	Present
Chile, Coquimbo	Jan. 12	..	Present
Iquique	Jan. 12	..	Present
France, Paris	Jan 26–Feb 2	5	..
Great Britain, Bristol	Jan. 26–Feb. 2	1	.
India, Calcutta	Jan. 5–19	..	41
Rangoon	Jan. 5–12	..	2
Mexico, Vera Cruz	Feb. 2–9	1	..
Netherlands, Rotterdam	Feb. 2–9	..	1
Russia, Moscow	Jan. 26–Feb 2	1	..
Odessa	Jan 19–Feb. 2	48	6
St Petersburg	Feb 12–26	3	1
Spain, Barcelona	Jan. 21–31	..	6
Turkey in Asia, Beirut	Jan. 26–Feb. 2	..	Present

YELLOW FEVER

Mexico, Veracruz	Feb. 26	1	..
Venezuela, La Guayra	Jan. 9	2	..
West Indies, Trinidad, Port of Spain	Feb 4–5	1	1

CHOLERA—INSULAR.

Philippine Islands, Provinces	Jan 5–12	2	2

CHOLERA—FOREIGN.

Ceylon, Colombo	Jan. 15–22	4	4
India, Calcutta	Feb. 2–19	..	526
Rangoon	Jan. 2–12	.	15

PLAGUE—INSULAR

Hawaii, Honolulu	Jan 29		1 on S. S. *Am.Maru*

PLAGUE—FOREIGN

Australia, Brisbane	Dec. 15–22	1	1
Chile, Antofacasta	Jan. 12	6	4
India, General	Jan. 5–12	12945	10343
Bombay	Jan. 15–22	.	43
Calcutta	Jan. 5–19	.	26
Rangoon	Jan. 5–12	..	17
Japan, Matsuyams	Jan. 14	..	Present
Osaka	Jan 14	.	Present
Peru, Callao	Jan 19	1	..
Catacaos	Jan. 8	2	..
Chiclayo	Jan. 8	7	..
Lambayeque	Jan 8	1	..
Paita	Jan 8	1	..
San Pedro	Jan. 8	7	..
Trujillo	Jan 8	6	..

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Original Articles.

THE OCULAR LESIONS OF GENERAL ARTERIOSCLEROSIS.*

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THE retinal changes in arteriosclerosis were referred to first by Hirschberg[1] twenty-five years ago (his case showed white lines along the arteries, with fine glistening points). But even before that Loring, in 1873, Nettleship, in 1879, and others had pointed out that in the development of circulatory disturbances in the retina local changes in the vessel walls played an important rôle. The investigation of Thoma[15] have shown that changes in the veins invariably accompany the changes in the arteries; in other words, that we have a phlebosclerosis as well as an arteriosclerosis. Strictly speaking, therefore, the term angiosclerosis would be the proper term to use. Inasmuch, however, as in general the arterial changes in the retina have the greater significance in the diagnosis of general vascular changes, I shall use the term "arteriosclerosis." These changes are more apt to affect isolated retinal vessels, or a short length of one of these while all the other vessels may be normal. As Mr. George Coats says, "nothing emerges more clearly from pathological research than the fact that angiosclerotic processes are almost always exceedingly irregular in their distribution."

Let us now consider in detail the various ophthalmoscopic signs of arteriosclerosis. There may be:

(1) A general change in the size of the arteries and veins of the eye-ground. The narrowing of the arteries may be slight in the early stages, or in marked cases it may be extreme, so much so as to almost suggest atrophy of the optic nerve, especially if there should be any pallor of the disc,

FIG. 1.—*a*, Silver wire arteries; *b*, white lines along the vessel; *c*, tortuosity of the vascular twigs; *d*, dilatations of vessels; *e*, constrictions of vessels; *f*, beading of artery; *g*, compression of a vein by the overlying artery; *h*, *h*, hemorrages. All of the lesions shown in this illustration were found in the hemiplegia cases referred to below; some of them in many of the cases. Several were sketched from these patients.

*Read by invitation before the Medical Association of the Greater City of New York, in a Symposium on "General Arteriosclerosis," January 21, 1907.

The apparent diminution in size of the arteries is associated with changes in the coats which have narrowed the blood stream. As the disease affects some parts of the artery more than others, irregularity in caliber takes place, and this has been found to characterize arteriosclerosis in other parts of the body.

In contrast to the narrowing of the arteries, the veins often appear relatively dilated, and often are actually so, this dilatation of the veins occurring in about 50 per cent. of all cases. In sclerosis of the aged, the veins are apt to be larger on the average in the periphery than in the vicinity of the papilla, and on the latter. Normally the arteries are about two-thirds to three-fourths the size of the veins, whereas in advanced cases of arteriosclerosis (for example, in contracted kidney), they may be only one-half to one-third the size of the veins. In addition to this narrowing of the arteries, there may be a tortuosity of certain small arterial branches, especially in the vicinity of the macula. Often the larger vessels from which these very tortuous branches arise are themselves normal. These corkscrew arterial twigs are apt to appear in the early stages of the condition, for in the very advanced cases, with pronounced ridigity of the vessels elsewhere, there is apt to be no tortuosity.

(2) There may be changes in the color of the arteries. That is, the central light streak of the arteries is broader and of increased distinctness, and the whole surface of the vessel is of a somewhat lighter color than normal, as if there was an unusually bright reflection from its coats. It is usually the secondary and tertiary branches of the central artery that are mainly affected. These are the so-called "silver wire" arteries; and the appearance is due to the higher reflecting power from the arterial wall after it has undergone a hyaline or fibroid change. (Fig. 1*a*, and all arteries in upper half of figure; contrast with those of lower half.)

(3) There may be changes in the caliber of the vessels at different points, and this is the most characteristic phenomenon. The most common point at which such change is noted is where a vein is crossed by an artery (Fig. 1*g*). In the early stages of arteriosclerosis, the first abnormality noted is a loss of the light streak of the vein on either side of the artery, with possibly a trifling diminution of the venous caliber under the artery. (Fig. 2*b*.) Often, also, a thickening and opacity of the arterial walls is evident, inasmuch as the vein is obscured where it passes under the artery, whereas under normal conditions the underlying vein can be detected through the translucent artery. An artery under a vein becomes visible on account of the brighter reflex from its walls. In more advanced cases the vein is very much constricted (Fig. 2*a*), winds around the artery, and often the marked twist is very conspicuous, as oftentimes the rest of the vein is not at all tortuous. As Rachlmann[2] points out, the venous narrowing is the result of a phlebosclerosis, limited to this point, which may be caused by the mechanical interference with the blood current at the point of crossing of an artery, perhaps by the walls of the latter. It is also probable that the abnormally high tension of the arteries, which in arteriosclerosis comes with the pulse wave, assists in the compression of the vein under it. That the vein is here compressed and the current hindered is evident from the venous dilatation back of the narrow part (see Figs. 1 and 2), as well as by the frequent hemorrhages often seen exclusively in the area of an obstructed vein. Sometimes when a vein passes over a rigid artery, the former flattens out somewhat like a strap. (Fig. 2*c*.)

As is well understood, the retinal vessels are suspended in a completely transparent tissue, as is the case nowhere else in the body, and this makes their examination especially valuable to the clinician. Under normal conditions the vessel wall is quite invisible. Only the blood column is visible, and the wall is recognized merely in the appearance of the light reflex which is influenced by the form or curve of the wall. The changes in the vascular walls in ocular arteriosclerosis may be of two kinds, visible and invisible. In the latter the vessel walls are still transparent, but we detect the changes by the alteration in the size and shape of the blood column. Among the *visible* changes are white lines along parts of some vessels (it may be for a considerable distance), arteries or veins or both (Fig. 1*b*). Sometimes almost the whole diameter of a vessel is changed into a white cord, and often glistening points are seen along it. When this change is limited to the branch of a vessel the diameter here is greater than that of the normal part of the vessel. This opacity of the vessel walls can be more readily made out with a plane mirror and a weak illumination.

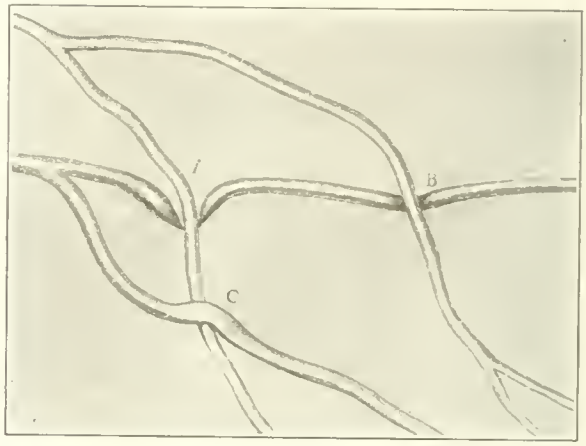

FIG. 2.—*a*, Marked pressure in late stages (this is from a patient seen during the last week), *b*, slight pressure of the vein by the artery; *c*, like appearance of the vein passing over the artery.

Besides these visible opaque changes in the vessel walls, we meet with localized and marked narrowing of the retinal arteries and veins, limited to a short section of the vessel (called by Raehlmann, "arteriosclerosis nodosa"), seldom equal in length to the diameter of the optic nerve, more frequently one-half or one-quarter this length (Fig. 1*e*). Nothing is seen of the markedly thickened vessel wall, but the abnormally narrowed blood column points to the thickening of the walls. There is, then, a broad and a narrow part of the vessel, the latter looking as though it were constricted by a band; sometimes two broad parts are united by an extremely thin part, and in advanced cases the blood column seems to be completely broken at certain points. We may have circumscribed constrictions of the blood column where the blood column is of a very minute caliber or apparently disappears (Fig. 1*e*). As Raehlmann says, where such changes limited to small portions of a vessel are seen ophthalmoscopically, the diagnosis of a local vascular narrowing by endarteritis can be positively made.

Sometimes the vessel presents knob-like irregularities in caliber, like a string of beads (Fig. 1*f*).

As Mr. George Coats[3] has recently pointed out in a very suggestive paper on "Intraocular Vascular

Disease," the pathology of these two changes in the vascular walls is different. In the cases of white lines along the vessels ("periarteritis"; "perivasculitis"), we have a "fibrosis" in which the connective tissue wall becomes greatly thickened, and encroaches more or less *concentrically* on the lumen of the vessels. The narrowing of the lumen, on the other hand, which is indicated only by a narrowing of the blood column, and not by any visible change in the walls, is due to proliferation of the endothelium, and this is almost always eccentric, the lumen being occluded on one side. In one of Hertel's[1] cases, fully half of the lumen of the central artery on the disc, was occupied by such a proliferation of endothelium springing from one side, as shown in a section. As Coats points out, the two conditions are probably due to different causes. Disease (with proliferation) of the intima is most probably a response to a circulating toxin, which would naturally affect the internal coat; thickening of the connective tissue wall is probably a strengthening of the wall to compensate for raised blood pressure. As these changes tend to strengthen the wall, he asks why does hemorrhage result? It would seem probable that it does not occur at the actual seat of disease, but the changes cause obstruction to the circulation, damming back of the blood and rupture at some spot where the wall is unthickened, or in the capillaries where the wall is incapable of much thickening. The result is a retinal hemorrhage.

While the "localized narrowing of the arteries" is only indicated in many cases, by a "localized narrowing of the blood column," there is little doubt but that we have to do with an endothelial proliferation and thickening of the walls. Quite a number of such cases have now been examined anatomically, where ophthalmoscopically the artery was very much narrowed, and microscopically the vessel showed proliferation of the endothelium. But, as Mr. Coats says, our knowledge stands in need of extension by more cases of the same kind worked out vessel by vessel, with careful reference to the clinical appearance.

Finally, we have aneurysmal dilatations or varicose ectasiæ of vessels which may be oblong, or sac-shaped, and two to four times the normal caliber (Fig. 1*d*). These are occasionally seen in the arteries, more frequently in the vein. When seen in the arteries, these dilatations are often seen on the central side of a constriction, and have been caused by the increase in blood pressure, due to the proliferation ahead. In the veins they would be on the peripheral side of a constriction for a similar reason.

In addition to these vascular changes we have the progressive venous pulse, described by Raehlmann among the first. This is visible, not only in the central venous branches, but also in the periphery of the fundus, and on all the larger branches of the veins. Immediately after the radial pulse the diameter of the vessel becomes dilated quickly, to collapse slowly, the collapse occupying most of the interval between two pulsations. In marked cases the vein when dilated is more than twice as thick as when collapsed, and the fluctuation in caliber can be followed in equal rhythm along the whole course of the vessel. When this progressive venous pulse is conspicuously present, the physiological venous pulse on the disc is absent. This symptom is the expression of the pulse-wave transmitted abnormally far into the rigid vessels of the sclerosed arteries which act through the distended capillaries upon the veins.

As the result of these various changes in the vessels themselves, we may have hemorrhages (Fig. 1*h*) and opacity or infiltration of the retina, especially in the vicinity of the macula. This superficial whitish or greenish discoloration of the retina at the posterior pole appears frequently where the small vessels running from the papilla to the macula are diseased. There is often just enough of this to prevent a good fundus reflex, so that often we have to use a mydriatic to make a satisfactory examination. It is something like, though much less marked than, the edema in embolism of the central artery of the retina. Mr. Marcus Gunn[9] suggests as an explanation of this infiltration or retinal edema, that the increased difficulty in arterial circulation will diminish the rapidity of the blood stream in the capillaries and veins, resulting in a tendency to the escape of liquor sanguinis into the surrounding tissues. The walls of the capillaries become more permeable, and diapedesis of blood cells takes place, and we get hemorrhages.

As Mr. George Coats says, it would seem probable that hemorrhages do not occur at the actual seat of disease, but the changes cause obstruction to the circulation, damming back of the blood, and rupture at some spot where the wall is unthickened, or in the capillaries where the wall is incapable of much thickening.

Liebrecht, Otto, and others have suggested that not a few cases of atrophy, also, according to Bull,[10] many of the cases of so-called chronic simple glaucoma are due to retrobulbar arteriosclerosis of the internal carotid, ophthalmic, or anterior cerebral arteries, which by pressure on the optic nerve posterior to the foramen has caused the descending atrophy.

Considering these various ocular evidences[5] of angiosclerosis, de Schweinitz[14] in a recent valuable paper makes a useful division of the lesions into those which are *suggestive* and those which are *pathognomonic*. In the former he includes uneven caliber and undue tortuosity of the retinal arteries, increased distinctness of the central light streak, an unusually light color of the breadth of the artery. The pathognomonic signs include changes in the size and breadth of the retinal arteries of such character that a beaded appearance is produced, distinct loss of translucency, decided lesions in the arterial walls, consisting of white stripes in the form of perivasculitis; alternate contractions and dilatations of the veins, and, most important of all, the indentation of the veins by the stiffened arteries. This latter symptom is recognized by all observers as the one ocular symptom most nearly pathognomonic of angiosclerosis. As Mr. Marcus Gunn says, however, it is only when several of these signs which have been described are present together that we can assert positively that the arterial change is very important.

Age.—Angiosclerosis is not confined exclusively to elderly people, for healthy-looking retinal vessels are frequently seen in persons seventy or eighty years of age. While the majority of cases are met with in old subjects, occasionally it is seen in persons under forty, or even thirty years of age, and it has been seen in a patient under twenty. In the presence of nephritis or syphilis, it can occur even earlier. As Mr. Coats says, it is in part a senile change, which we would expect to find in the vessels of any old person, in part a definite response to a pathological stimulus, and these two components are not always clearly separable. Given the stimulus, however, it may appear far in advance of the

usual age as, for example, in juvenile nephritis. In other words, the mechanical conditions of the blood current only lead to the changes described when a predisposition exists and the vessel wall is pathologically ready for the changes.

Vision.—The vascular changes may be very pronounced in both arteries and veins without any evidence of functional disturbances or defect in the visual field. In one of Hertel's cases, examined microscopically, the proliferation on the inner wall of the central artery was so considerable as to occlude fully one-half of the lumen of the vessel. Yet the vision was 20/20. If considerable visual impairment occurs, this is apt to come on suddenly; it may be from a hemorrhage at the posterior pole or it may be from venous thrombosis. These cases of venous thrombosis are especially prone to glaucoma subsequently. Of sixteen cases of venous thrombosis examined microscopically by Mr. Coats, glaucoma occurred in all sixteen. Sudden loss of vision may come on also as the result of obstruction of the central artery of the retina by endarteritis. These cases were formerly thought to be due to embolism. But we now know that many, perhaps most of them, are the result of *endarteritis obliterans* accompanying arteriosclerosis. (While this is undoubtedly true, I am in thorough accord with Mr. Coats and other English observers, who hold that our German confrères go much too far when they affirm that embolism of the central artery has never occurred. Several cases which have been reported are undoubtedly of this nature.) Many of these cases have had prodromal obscurations of vision, possibly for many years, before the final loss of sight. These obscurations often come from cardiac weakness, and in many cases are reparable, temporarily at least, by cardiac stimulants. Wagenmann[16] reported an interesting case of arteriosclerosis (with large veins, white lines along the arteries, and hard radials), who had suffered from prodromal obscurations for a long time. Wagenmann saw the patient during a sudden attack of complete blindness lasting a half hour or more. The arteries were invisible except near the disc (that is empty), and the veins reduced to fine lines, and there was opacity of the retina, with a red spot at the macula, as in embolism. Gradually the circulation returned, with restoration of vision.

These cases of ischemia and temporary blindness, due to vascular spasm in association with arteriosclerosis, have been occasionally reported by others, and have been benefited by nitrite of amyl.

Location of the Lesions.—The central vessels, those nearer the optic nerve, are the most apt to be affected, possibly, as Raehlmann suggests, because it is easier to discover the changes in vessels of a larger diameter. But Hertel's anatomical investigations have demonstrated a more marked involvement of the vesesls in the central portions. While the proliferation of the intima may occur where there is no nearby bifurcation, yet it is in the vicinity of such bifurcations, especially where they branch almost at right angles to one another, that they are most frequently met with.

Frequency with which Ocular Lesions are Found in General Arteriosclerosis.—Raehlmann examined 210 cases of arteriosclerosis, and found aneurysmal dilatations in only two cases. In almost 50 per cent. of the cases he observed either whitish borders to some of the vessels (20 per cent.) or aneurysmal dilatations, or local narrowing of the caliber (21 per cent.). Hirschberg[1] examined fifty persons, between the ages of sixty and eighty years, and found that 46 per cent. of the persons examined showed changes in the retinal arteries (44 per cent. showed changes in the caliber of the arteries at some points of their course); 2 per cent. showed white lines along the vessels. Friedenwald[5] examined twenty-three patients for Preston, and he reached conclusions practically the same. And yet, in our textbooks on diseases of the eye it is very unusual to find any reference to this important subject.

The writer has been much interested in the result of an examination which he recently made of forty-six patients, most of them suffering from hemiplegia, a few from paraplegia. In such a class of cases it would be fair to suppose that the condition had been attended with arteriosclerosis of the cerebral vessels. Of the forty-six patients, six had such considerable lens changes as to make a satisfactory examination of the fundus impossible. Of the remaining forty (of whom the oldest was seventy-four and the youngest forty-one), sixteen, or 40 per cent. showed pressure of the veins by the arteries, often to a very marked degree. Twelve, or 30 per cent., showed this same symptom associated with local constrictions or varicosities of the vessels. Perivasculitis was seen twice (5 per cent.) and beading of the vessels twice (5 per cent.), so that out of forty such cases, pathognomonic ocular symptoms of arteriosclerosis were discovered in thirty-three cases, or 83 per cent. In seven cases (or 17 per cent.) the *suggestive* symptoms alone were found, viz., dilated veins and small, brilliant arteries. But in all of these the symptoms were most suggestive; that is, the veins were very much dilated and the reflex from the arteries was most brilliant. In a number of cases the lesions were almost as numerous in one and the same individual as is represented in Fig. 1, and the opthalmoscopic pictures were often exquisite. Yet not many of them could have been recognized in the indirect method. In not one case (though I looked very carefully for it) could I discover Raehlmann's symptom of progressive venous pulse, and I am not positive that I have ever seen it in any case, and yet Raehlmann states that it occurs in 50 per cent. of the cases of arteriosclerosis.

Sex.—As is true elsewhere in the body, these retinal changes of angiosclerosis occur more frequently in males than in females.

Limitations.—In the first place, the mistake must not be made of attributing all vascular changes found in the retina to angiosclerosis, for frequently such are of a local character. On the other hand, it would be equally a mistake to consider the absence of ophthalmoscopic evidence of retinal changes as positive proof that arteriosclerosis was not present in the eye or elsewhere in the body. For we know how irregular in its distribution arteriosclerosis is, and, furthermore, Hertel examined a large number of old people in whom no abnormality was visible, with the ophthalmoscope; and nevertheless the changes of arteriosclerosis could be demonstrated microscopically in a considerable number of these.

Significance of these Changes.—So far as the eye is concerned, we find that glaucoma occurs very frequently in this condition of arteriosclerosis. It must be remembered that if acute glaucoma occurs in an eye in which the retinal changes of arteriosclerosis are present, a very guarded prognosis must be given in case of iridectomy is done. For often the condition of the vessels is such that intraocular hemorrhage follows operation, resulting in the loss of the eye. But these retinal changes become very

much more significant from the assistance they render us in diagnosing a serious *general* condition, it may be before it has been suspected by the general physician. It is very well understood to-day that the diagnosis of many cases of nephritis is first made by the oculist, often at a time when the patient may not have shown any other evidence of the disease. Here the renal condition is an angiosclerosis, and, as Michel first demonstrated, the retinal changes are also due to vascular degeneration. But it is not alone in renal disease, but also in general arteriosclerosis that the ophthalmoscope gives us valuable information, for here alone are the minute capillaries of the body visible. (The largest retinal vessel has a diameter of not more than 1-100 of an inch.) General arteriosclerosis affects the internal carotid very frequently, and is very apt to involve its principal branches, and among these the ophthalmic and cerebral arteries. If these degenerative processes can be demonstrated in the retina, it is very probable that the same disease is present in the cerebral vessels. Of forty-four cases of Raehlmann, there was subsequent cerebral hemorrhage in ten, or 21 per cent. Mr. Marcus Gunn, in a valuable paper, reported fourteen cases of intraocular vascular disease, in which cerebral hemorrhage subsequently occurred, and we have all of us met with many similar cases. It is with these patients that the responsibility of the oculist becomes very great, for it is manifest, as de Schweinitz points out, that he has an important duty to perform in connection with them. For if evidence of beginning arterial degeneration is discovered ophthalmoscopically (very often such discovery is made accidentally, it may be, in examining a patient for glasses), the matter should be brought to the attention of the patient's medical adviser, so that a careful investigation of the arterial tension and of the renal condition may be made. Thus, oftentimes proper treatment can be applied with the greatest benefit, and possibly an impending catastrophe be averted or postponed. It cannot be too strongly emphasized that examination of our middle-aged patients for glasses should not be done in a perfunctory manner. We should investigate not only the optical needs of all such patients, but of equal, if not greater importance, is it that we investigate most carefully the condition of the retinal vessels, and ascertain whether or not there are present any ocular evidences of arteriosclerosis.

The narrowing of vessels over a short course, possibly limited to a part of the optic nerve, is not easily discovered, and can readily escape our notice unless looked for very carefully. The indirect image cannot be used, and even with the upright image it often requires an expert observer to recognize the differences in caliber, which are not infrequently the only evidence of the changes, and not seldom must a mydriatic be used. As Raehlmann says, "when sclerosis of the retinal vessels is suspected, it is necessary, in order not to overlook the changes, to carefully examine each separate vessel, especially in its central course." If every oculist searches for these changes in all his patients he will find some of these in an increasing percentage of his cases.

In conclusion, we may say, with Mr. Gunn, that "ophthalmoscopic examination is one of the most ready means for the early detection of important arterial changes." The method of examination is infinitely more delicate than palpation of the radial or temporal arteries through the skin. We are thus able to diagnose with great probability by the ophthalmoscope a vascular disease which is at the bottom of many cerebral disease processes, often threatening the patient's life. Inasmuch as the vascular change very frequently is limited to the internal carotid and its branches, we are therefore sometimes able to diagnose the dangerous affection of the cerebral vessels with the ophthalmoscope when the rest of the vascular system does not show the disease.

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SOME REMARKS ON THE RADICAL MASTOID OPERATION FOR THE CURE OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

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To determine when a radical operation should be performed for the cure of a suppurating middle ear which has continued for a longer or shorter period, is undoubtedly one of the most serious problems with which the otologist is confronted, for not only is the question complicated in many ways, but the difficulty of convincing the patient that such an operation is essential, when he is conscious of possibly only a slight aural discharge, not infrequently results in failure and serious if not fatal complications may ensue.

In the selection of cases for the radical operation, it has well been said that a large experience, rather than any rigid rules, is the best safeguard against the risk of delay, or of performing an unnecessary operation. That this statement is essentially true may be admitted, for while general indications may be formulated, yet each case must be judged upon its individual merits and the particular treatment in that case carried out accordingly. The radical operation, therefore, must be accepted or rejected upon the merits of the individual case, based necessarily upon broad general rules that bear a more or less close application to every case of chronic suppurative otitis, but it may be safely said that it should be resorted to in almost all cases which cannot be cured by measures less radical in nature.

While formerly intratympanic operations of various sorts were much in vogue for the treatment

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of this condition and yet have a definite field of applicability, it is undoubtedly more and more being recognized that in many cases such measures must fail on account of the inability to remove in this way all the morbid tissue and the remaining nidus of disease is a further focus of infection keeping up the suppuration. While in this condition, therefore, the various intratympanic procedures formerly vaunted have steadily lost ground as curative measures, yet in probably the majority of cases of chronic tympanic suppuration they are undoubtedly indicated and even to the most ardent advocate of the radical operation it must not be lost sight of that not infrequently in suitable cases local antiseptic and surgical treatment, such as the removal of granulation tissue, polypi, circumscribed areas or carious or necrotic bone and the extraction of the carious malleus and incus, produce a cessation of the suppuration.

Many instances of this aural affection are encountered in which, except for an irregular amount of purulent discharge from the ear, pursue a practically symptomless course for many years, and yet when such cases have been operated on for various reasons, after the course of years, it has been found almost without exception that the tympanic cavity is not alone affected, but that even more serious morbid changes have taken place in the antrum and mastoid cells, and that these changes, including destruction of large bony areas, have been progressing without the patient or even the physician having the least knowledge that such was the case. In other instances the discharge disappears after a longer or shorter period of treatment through the auditory canal and may remain absent for a very long time, to again return following infection through the Eustachian tube from a coryza, or often the recurrence cannot be traced at the time to any direct source. It is in these recurrent cases, with temporary cessation of purulent discharge, that one is most apt to be deceived as to the measures to be adopted, and also as to the pathological changes that are taking place, for in many instances of this type the patient believes that his disease is cured when the discharge disappears, while as an actual fact the condition is only temporarily in abeyance and active morbid changes are apt to become prominent at any moment.

The question as to the necessity of performing a radical operation for the cure of aural suppuration in the absence of active complicating symptoms is more and more becoming answered in the affirmative, as this operation is undoubtedly the safest and most efficient method of eradicating such a condition and with proper aseptic precautions and technique it is not dangerous to life, and in the majority of cases operated upon the results are entirely satisfactory. The more the pathology of aural suppuration is appreciated the more will active, radical measures be instituted early and necessarily the less will cases of so-called incurable chronic tympanic suppuration be encountered. And for the same reasons experience has shown that with a greater number of cases operated upon the more clearly differentiated becomes the indications and the more clearly is shown its practical value.

In order to obtain the desired result from this operation certain objects must be attained, the most important being that all diseased tissue of whatever nature, whether osseous or otherwise, be thoroughly removed, for unless this is done a recurrence may be always expected. A most important object, and one which intratympanic operative procedures do not as a rule accomplish, is the securing of free and permanent drainage. Of less importance, but still of sufficient gravity to the patient, is the retention of such hearing as may remain, and while this is but a subsidiary object, yet in most instances the radical operation conserves or even improves the auditory perception. In addition one should always bear in mind the great indications for the radical operation is the relief of a serious menace, not only to the health of the individual but also to his life. To obtain successful results, therefore, with certain and rapid healing, it is essential that the diseased areas be eliminated and that the tympanum, antrum, and mastoid cells be converted into a single cavity, with smooth walls, in which there are no recesses, so that every part is readily accessible from the enlarged auditory canal.

The advantages of this operation over other procedures in chronic tympanic suppuration cannot be overestimated, as in the larger proportion of cases it admits of the complete and permanent cure of the aural disease, while in such cases where for various reasons success has not been complete at least all the parts are exposed to view and full opportunity offered to locate and later eradicate any diseased areas which might have escaped observation at the time of the primary operation, or which have developed subsequently. The conditions are made such that asepsis can also be maintained to a much greater degree than would be possible in any other manner, and as the result of the removal of pyogenic tissues from the vicinity of dangerous points the healthy osseous tissue remaining forms an efficient barrier against any danger of an extension of the infection to the intracranial structures.

While in general the indications for the radical operation are sufficiently clear, it is impossible to lay down guiding rules for all cases; yet by careful differentiation the advisability of operation can usually be determined, and it is desired here to indicate as far as possible such rules as may be of value for this purpose. Undoubtedly the indications as enunciated by Politzer form the basis of this subject at the present time, and these may be divided into two main groups, the objective and the subjective. Of the former which indicate operative procedures in order to cure the suppurative process present, marked caries of the tympanic walls, the recurrence of granulation tissue and polypi after its removal in the vicinity of the aditus, the presence of fistula in the mastoid cortex and marked cholesteatomata are to be cited, while hyperostosis of the external auditory canal, facial paralysis or paresis, and well marked symptoms of acute mastoiditis, are also not compatible with local treatment through the canal. In addition, also indicating operation, are those cases with prolonged fetid suppuration resisting less radical measures, and especially is this called for if there is a perforation in the superior segment of the membrana tympani, or if the remnants of the membrana are adherent to the inner tympanic wall, and still more is operation indicated if pus or epithelial masses can be drawn from the region of the aditus. Symptoms of intracranial complications are, of course, of sufficient warrant for radical operative procedures, irrespective of other signs.

Of the subjective symptoms indicating operation associated with more or less of the former manifestations the following may be considered in this connection: Persistent pain in the ear or in the mastoid region, especially if increased by percussion and if involving the occipital or parietal regions;

permanent or intermittent vertigo and cerebral symptoms such as headache, torpor, etc.

In many patients with chronic otorrhea the question of immediate operation, or the advisability of delay for a shorter or longer time, will often prove most puzzling, but in those cases where there is a reinfection, or the chronic suppuration undergoes a period of activity with more or less rapid extension of the pathological process, then it is necessary that the radical operation be promptly performed. In the presence of any of the usual grave complications, one should never delay removing the focus of the disease and at the same time the measures adopted should be of sufficient extent as to remove the possibility of further suppuration. Debatable and open to question as regards the performance of an immediate operation are those cases where the patient suffers little or no pain and when no symptoms of mastoid changes are apparent, but even in such individuals it must be recognized that serious changes may be in progress and yet not be apparent, so that if the osseus lesion is at all extensive it is always proper to err on the side of safety and remove all the diseased tissue by a radical operation, rather than adopt tentative and so-called conservative measures which in no wise will eradicate the disease. In this connection it must always be remembered that the attic, aditus, and antrum, which in many instances bear the brunt of the purulent inflammation, are an essential portion of the tympanic cavity and as a result of their anatomic relationship bear a large share in all the infectious changes that take place in the latter.

Stetter believes that the radical operation is indicated when there is marked dizziness, with disturbance of gait, and when there is nausea and vomiting, while as far as local symptoms are indicative of such a procedure the duration of the disease should be seriously considered, as should also the condition of the posterior aural region, the frequency of attacks of pain, the presence or absence of facial paralysis, and the nature and quantity of the purulent discharge. Jackson advocates this procedure in the absence of mastoid symptoms, when the suppuration has failed to yield in three months after ossiculectomy, followed by the so-called wick treatment, Milligan believing that operation should be performed when the suppuration has persisted for one year, and when for at least three months careful and rational local treatment has been employed without influencing the course of the suppuration. This difficult problem is elucidated by Macewen in a satisfactory manner, when he states that when a pyogenic lesion exists in the middle ear or in adnexa, which is either not accessible, or cannot be effectually eradicated through the external auditory canal, the mastoid cells and antrum ought to be opened.

While operation is undoubtedly necessary when symptoms of septicemia have commenced, or where there is dead or carious bone in the tympanic cavity in whatever location that may be and accompanied by repeated attacks of serious symptoms, or when there is evidence of involvement of the mastoid structure either of long or short duration, yet there is a large class of cases of aural suppuration in which these symptoms are absent, but in which I believe this operation is also indicated in order to obtain a complete cessation of the purulent discharge. In this group belong those cases in which one obtains certain evidence of the presence of dead or seriously diseased bone in the attic or other portions of the middle ear, but is unable to obtain a clear history of symptoms that would indicate serious outbreaks in the past. While in the other class, which comprises those with persistent otorrhea, but in whom manipulation through the canal does not furnish satisfactory evidence of osseous lesions and one obtains a fairly clear history of the absence of any intercurrent exacerbations, it may be difficult to always decide that the indications warrant radical operation, but as a rule in selected cases of this class a permanent cessation of the discharge cannot be obtained in any other manner.

When the symptoms are but slight, whether objective, or subjective, or combined, one must not only be guided in solving this question by the aural symptoms alone, but it is always the wisest plan to carefully study and weigh the general condition of the individual and also his social relations. In individuals in whom the aural suppuration gives evidences of a tuberculous basis, or in those in whom the otorrhea pursues an asthenic course almost from its inception, prolonged local treatment through the canal, or delay in waiting for active symptoms to arise so that clear indications for operation may be obtained, is always advisable; these cases are especially liable to have extensive osseous lesions, and it is always the best policy to operate early, not only to cure the suppuration, but also to avoid the development of serious complications.

When the secretion from the middle ear contains cholesteatomatous masses and from time to time these block the perforation in the membrana tympani, or produce symptoms of pus retention higher up in the aditus or antrum, it is clearly established that little success can be obtained by measures, operative or otherwise, carried out through the external canal, as the morbid changes are either too extensive or the pathogenic areas are inaccessible portions. It has been repeatedly shown that the proliferating epithelial masses are not only derived from the covering of the osseous surfaces, but that they proliferate and penetrate for some distance into the structure of the bone and can only be completely eradicated by removing this upper layer of osseous tissue, so that the radical operation alone can be relied upon to give complete access to all diseased parts.

In the absence of symptoms other than that of a persistent otorrhea associated with more or less foul odor, one must be guided in deciding upon operation by the fact that continuous treatment has not diminished or abolished the discharge, and not by the nature of the discharge, its quality, or quantity, or by the odor, it being a well-known fact that the virulency of an otorrhea cannot always be judged by the amount of the discharge or its odor, although in the presence of a profuse, continuous discharge one is warranted in opening the mastoid. In those cases where the odor is persistent and not at all, or but little, altered by treatment through the canal, radical operation is undoubtedly warranted, as the continuous presence of such an odor implies that there is decomposing pus being retained in inaccessible parts, or that carious bone is present.

There are certain exceptions to the performance of the radical operation when otherwise indicated for the cure of a suppurating otitis in the absence of marked symptoms which should always be heeded and the treatment of the diseased ear conducted accordingly. It is absolutely contraindicated in advanced cases of pulmonary tuberculosis, or when other serious organic diseases are present, while in the very aged individual, where the discharge has lasted for a long time without apparent

inconvenience, it is perfectly reasonable that such surgical intervention should not be considered.

That the operation is not without danger, even in the otherwise healthy individual, cannot be gainsaid in all instances, as it is a trying surgical procedure. It incapacitates the individual often for long periods of time; there can be no surety that the hearing will improve following it, and even with the operation apparently carefully performed the purulent discharge may still continue owing to a progressive osteomyelitic process taking place. A negative danger may be mentioned and that of not having all the diseased tissue thoroughly removed, or the operation being incompletely performed. Paralysis may follow injury to the facial nerve, or the semicircular canal may be injured, with its train of serious consequences. One should guard against unavoidably opening the lateral sinus, or exposing the middle cerebral fossa, and particularly against injury or removal of the stapes and thus exposing the internal ear to the dangers of serious infection. With all this, however, the danger is not as great to the patient as the presence of a continual focus of suppuration in the temporal bone, and one is perfectly justified in saying that the "danger lies not in the operation, but rather in its neglect."

That failure is unavoidable in some cases must be granted from the nature of the pathological changes present, but even if a small proportion are not completely relieved of the discharge, and the operation fails to produce a permanently dry and epidermized cavity, the patient undoubtedly is in a much safer position than before, as all foci and recesses where purulent material may develop have been eradicated. The concealed parts, which before operation were not accessible, or were in part difficult of access, have been fully exposed and are rendered capable of being accurately treated under the sight of the otologist.

In the absence of acute symptoms or complications where the radical operation is advised for the cure of the persistent suppuration, the question of the effect upon the hearing will strongly influence the action of the patient. Where tests show that the hearing is already seriously impaired and the labyrinth is involved, nothing will be gained as far as the hearing is concerned by this operation, but where the inner ear is normal and the patient can hear ordinary conversation fairly well, the majority of cases operated upon show no further impairment of auditory acuity, but rather an improvement. A small number of individuals will, however, suffer from still greater impairment following the operation, but practically this should receive little consideration, as the elimination of the suppuration and of the dangers to health and life which exist even in the uncomplicated case far outweigh the further impairment of what is in the majority of such cases an already impaired hearing.

While it is not desired here to discuss the operative procedure itself in any way, yet certain technical difficulties present themselves that must be overcome before successful results can be obtained, and it will be well to briefly mention these. The most important of these is the difficulty of cleansing the newly formed cavity of all diseased tissue, for unless this is done thoroughly the future outcome is seriously jeopardized, so that in performing this operation one should be especially careful to eliminate all suspected areas of caries or necrosis, rather than to take the chance of a recurrence by allowing a suspicious area to remain. Of these particular areas where carious tissue is apt to be overlooked, it is important to see that the outer wall of the attic is thoroughly removed, as at this point a carious process of the osseous tissue is very frequently found. Not only must the tympanic cavity, aditus, antrum, and mastoid cells be converted into one chamber, but the posterior and superior walls of the external auditory canal must be removed to accomplish this thoroughly, and in addition the remnants of the tympanic membrane, with the malleus and incus if still present, must be entirely taken away. In some cases it is especially important to open up and remove groups of pneumatic cells situated in various locations not usually considered to be involved, and of these the posterior group of mastoid cells should be especially explored. It is also highly important that the cell, or group of cells, at the tip of the mastoid process be eliminated, as in many cases of chronic suppurative otitis without mastoid symptoms at any time it will be found on operation that a focus of diseased tissue, or confined pus, exists at this location.

Thus will the operative field depend entirely upon the condition of the mastoid tissues, as in practically every case of long standing otorrhea the mastoid will be found involved to a greater or lesser degree, and to this point, therefore, should the operation be primarily directed. As a result of constantly carrying out an extremely radical principle in operating it has been found time and again, in the absence of serious local symptoms, and often when the patient is apparently in perfect health, that grave and extensive destruction has been going on in the osseous interior, even to the extent of exposing the intracranial structures, so that the operation has clearly shown that one does not always appreciate the danger in which these patients stand until the parts are exposed to view.

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THE ABORTIVE TREATMENT OF PNEUMONIA.

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For the reason that, in the language of another, "the divisions of the various diseases of the lungs have not been finally settled," and because, for the sake of diagnostic accuracy, many different forms of pneumonia are recognized and described, I wish it to be understood that the statements contained in this paper refer to and include any pneumonic disease, either acute or chronic, which is characterized by exudation into the alveoli and bronchioles, and which results in consolidation and uselessness of the affected area.

Like every other disease, pneumonia is the result of two kinds of causes: the exciting or accidental, as exposure to changes of temperature or to atmospheric conditions; and the predisposing, essential, or specific which consists of vitiated secretions, with their accompanying germs and defective elimination. Von Jürgensen, in speaking of croupous pneumonia, says, "It is a general and not a local disease, the inflammation of the lungs being the principal symptom."

Another authority, who evidently believes the specific cause to be a germ or its secretions, says: "If it were possible to prevent the entrance of the pneumococci into the alveoli of the lungs, pneumonia

would be impossible," and regretfully states that any method of preventing such an occurrence is unknown.

To combat and remove this latter class of causes is the chief therapeutic problem, and the success which attends this effort is the measure of the physician's skill and usefulness. That, taking the profession as a whole, our failures equal if they do not exceed our successes, is a sad commentary upon prevailing methods of treatment. The mortality of pneumonia under any mode of treatment which, to-day, is upheld by the sanction of authority, is appalling; but, to me, no more so than the satisfied indifference with which the majority of the profession pursue, year after year, lines of treatment which statistics prove to be, at best, but little better than pure expectancy.

Why are these unworthy and unreliable methods complacently persisted in when it is so painfully evident that they are wrong, and that greater success is impossible unless means of a radically different character are employed? In no other line of endeavor, professional or otherwise, is such indifference to success exhibited or tolerated. What lawyer, teacher, minister, or dentist is there who would not consider himself disqualified for his position if over 50 per cent. of his undertakings continually proved to be flat failures?

The ordinary physician, however, is not disconcerted by so small a matter. Like the brook he goes on forever, continually treating pneumonia in the same old way, in spite of his confessed inability to do no more in the way of assisting nature to overcome this scourge of civilized humanity.

Although they do not excuse it, there are two reasons for this professional apathy. One is that, in the therapeutic department of medicine, the physician has always been taught to accept as proper whatever form of treatment tradition and authority have decided to be best, and that any deviation from methods thus prescribed constitutes a species of heresy, the punishment of which is professional ostracism. Because of this fact, original thinking and individual investigation are hindered and the professional conscience blunted. The other is that the acknowledged leaders of medical thought and practice are so intensely jealous of their ideas and reputation that, with very few exceptions, they cannot be induced either to accept any modification of the methods they advocated or to investigate without prejudice the merits of any system of practice which radically differs from their own.

The following personal experience—one of many—serves both to illustrate and corroborate the statement just made. In talking with a well-known physician of this city—one who is both an author of distinction and a professor in one of our medical colleges—about the possibility of reestablishing activity in a consolidated lung in tuberculous cases, he not only spurned the idea that such a thing could be done, but when I offered to demonstrate the fact to his entire satisfaction, coolly and unblushingly said: "Rather than acknowledge that what I have taught and written is wrong, I would retire from the practice of medicine." When such narrowness and bigotry exist in the minds of medical teachers, is it any wonder that so many physicians, young in practice, meet with so little success in their efforts to cure the sick?

With regard to pneumonia, I have been waiting for years for some eminent general practitioner and teacher to come boldly forward with some definite and scientific plan of treatment by which the number of cures will, at least, equal the number of failures, but, so far, I have waited in vain.

In presenting my own methods of treatment, I do not wish to censure too severely the older members of the profession for what seems to me to be, upon their part, a lack of careful study of the nature and cause of this serious malady, or to reprove them for adhering to lines of treatment which result in such a high death rate. I do desire, however, to urge the younger members of the profession either to adopt the therapeutic methods I have found so successful, or, by research and experiment, to discover and formulate a better one.

There are two circumstances which account, in a great measure, for the high percentage of mortality which attends the treatment of pneumonia by prevailing methods. The first is the frequent failure to recognize the fact that, in the form in which it usually presents itself, pneumonia is, as Von Jürgensen has stated, a general as well as a local disease, and therefore remedies addressed to the lungs alone, no matter how appropriate and reliable they may be, must often fail to effect a cure. The second is the lack, which has heretofore existed, of a safe and reliable remedy for the removal of congestion. Congestion implies not only stagnation, but chemical deterioration of all of the fluids in the affected area, of the interstitial fluids as well as of those within the capillary vessels. The successful remedy, therefore, must be one which is able, speedily, to remove both of these morbid conditions.

Until recently drugs have been almost the only means available for this purpose, but now more efficient measures are at command. The chief of these, according to my experience, is the ozone-producing, electric current. This remedy, with its method of application, was fully described in a paper entitled, "The Influence of Electroözonation upon Disease," which I read before the New York Academy of Medicine, and which appeared in the *New York Medical Journal* in the issues of January 25 and February 1, 1902.

For the benefit of those who have not seen this article, the following brief outline description of the apparatus by which ozone is generated must suffice:

The machine consists, practically, of an ozone generator fed by a high-tension coil which multiplies the voltage of the commercial current a million or more times and practically eliminates all amperage. To the generator are attached brushes or corrugated wires from which ozone is given off in large quantities, and also connected with it, by means of a wire cord, is a Geisler vacuum tube through which ozone is forced into and through the body, thereby oxidizing all pathogenic products and reestablishing nutrition and vitality. Connected with this apparatus is an electric cabinet which generates light and heat coupled with ozone. Thus, the most important elements which enter into the problem of life are supplied in a form to be utilized.

I find ozonation to be an ideal remedy for all stages and degrees of congestion. Being the result of very rapid vibration, it possesses both physical and chemical qualities in the highest degree of efficiency. By virtue of its vibratory quality it penetrates to, and mechanically acts upon, every cell of the affected region. By urging forward the sluggish contents of the capillaries it equalizes and restores the capillary circulation; by stimulating osmosis, it compels excessive accumulations, of whatever nature, to reenter the circulatory vessels and once more become a part of the active, systemic circulation, and, by contracting and strengthening the muscular walls of the relaxed and distended

capillaries, it enables them to maintain their circulatory function in a more perfect manner.

At the same time these mechanical effects are taking place, others of a chemical nature, resulting from ozonation—the most active and most effective form of oxidation—are occurring. Not only are the abnormal accumulations which have been deposited at the seat of congestion oxidized and destroyed, but the morbific elements in the blood *which constitute the specific cause* are similarly dealt with.

Ever since I fully appreciated the remedial value of this form of ozone, it has been my chief reliance in the treatment of pneumonia. My experience with it comprises over sixty cases, taken as they came, at any stage of the disease, and covering all degrees of severity, with complete recovery in every instance. Several of the cases were in well developed tuberculous patients; some had organic disease of the heart, and one, a case of septic pneumonia, occurred in a patient ill with puerperal fever complicated with a pelvic abscess. One patient, considered hopeless when I was called, was taking a combination of thirteen different drugs and only a teaspoonful of whiskey every two or three hours. In spite of this there was complete recovery. Resolution was established in twenty-four hours; the lungs were free and the heart action normal. The patient was up and out in two weeks.

In another case of double pneumonia, complicated with tuberculosis in the primary stage, the patient recovered and went back to business in two weeks. In regard to age, several of my patients were over seventy-five and one was ninety.

As further evidence of the efficacy of ozonation in this disease, I will cite, in detail, its results in a very severe typical case to which I was called when the patient, who was eighty-nine years old, was supposed to be dying. She had been under treatment for six weeks, confined all of the time to her bed. She was thoroughly exhausted, and, when first seen, was unconscious. The lungs were fairly clear, respiration 32, pulse weak, fluttering, and intermitting every second beat. There was great restlessness with muttering delirium and involuntary discharges from both the bowels and bladder.

Within half an hour from the beginnig of treatment by ozonation, the pulse intermitted only every seventh beat. Within an hour, the involuntary action of the bowels and bladder ceased. Half an hour later, the pulse beat at 90, with no intermission, and the patient fell into a quiet, restful sleep, for an hour and a half, from which she awoke conscious and asking for nourishment.

She received but two treatments daily, but made a complete and uninterrupted recovery. So rapidly did her strength and vitality return that, at the expiration of a month, she was able to take a long journey by rail without the slightest unfavorable result. Her health, since recovery, has been better than for years before the illness occurred. She is now in her ninety-second year, hale and hearty. Her physician remarked that the treatment she received at that time "seemed immediately to bring into activity all conditions favorable to the reproduction of life and vitality."

In acute cases, recovery is more rapid; complete restoration being effected generally within five or six days. Even in those frequently occurring, serious cases of tardy and incomplete resolution, in which, on account of the low vitality, the solidification that has occurred fails to be absorbed and remains a constant menace to the life of the patient, ozonation will establish resolution in a few days, the entire area affected becoming free and clear.

The case of Dr. Robertson, the principal features of which are mentioned in my paper upon "The Influence of Electroözonation Upon Disease" above referred to, illustrates its action in this class of cases. On account of his low vitality, the doctor's recovery from a severe attack of pneumonia was incomplete, the middle lobe of the right lung remaining consolidated. Several weeks after he was able to leave his bed, his pulse was 100, temperature 99.1°, respiration 24. There was an irritable cough with scanty expectoration laden with pus. His physicians believed he was going into a decline, and advised him to give up practice and spend the remainder of his life in the South—a step which he had made preparations to take.

At this juncture, he was brought to me for treatment by his physician who, however, doubted that ozonation could be of any benefit to him. On April 19, 1901, within twenty-four hours after the first treatment, the temperature rose to 105°, accompanied with all of the pneumonic symptoms attending such a high degree of fever. This was followed by abundant expectoration to such an extent that, within the next twenty-four hours, he had thrown off over a quart of offensive, "prune-juice" mucus, and all consolidation had disappeared. Within five days from the first treatment, all râles had disappeared, and not even the slightest roughness could be heard. Strange as it may seem, on April 23, only four days after the first treatment, the doctor replaced his sign in the window, unpacked his furniture, and resumed practice. His health was completely restored by fifteen treatments.

The high temperature which appeared in this case so soon after the first treatment, always occurs in a greater or less degree in cases of this class. It is not caused by an aggravation or encroachment of the disease, as might be supposed. It is, rather, an indication of the increased vitality which ozonation has conferred upon the system, and is due to the successful effort made to establish resolution and to get rid of the consolidation; the intensity of the effort being determined by the degree of vitality which has been acquired and the character and amount of the consolidation to be removed.

This clinical record, comprising over sixty-nine cases of pneumonia treated, with 100 per cent. of recoveries, would seem to be sufficient to establish the fact that there is a rational and successful method of treating this heretofore unconquered disease; so that, now, instead of dreading it, as was formerly the case, on account of its rapid development and frequently fatal termination, I consider it one of the easiest diseases to cure.

It is frequently stated that pneumonia cannot be aborted; that it must always "run its course." While this is probably the case, without exception, in the practice of those who make this statement, I can assure you that such an opinion is erroneous. I have repeatedly demonstrated that, by the proper application of ozonation, pneumonia can be aborted at any stage, resolution becoming established within forty-eight hours from the beginning of treatment. I desire to add, parenthetically, that in my opinion there is no reason, but incompetent treatment, for allowing any acute disease to get well by limitation. Any form of treatment which cannot largely discount nature's unaided efforts, is neither rational nor scientific; it is decidedly worse than no treatment at all.

Ozonation should be applied from half an hour to two hours at a time, and repeated several times daily, according to the severity of the case, but never so frequently as to interfere with a proper

amount of sleep. It should be applied over the head, spine, and abdomen, as well as over the congested area; over the cerebrum and medulla, because it clears the mental faculties and stimulates the nerve centers which control both respiration and motion; over the abdomen, because it augments the activity of the eliminative organs; and over the congested lung area which can be accurately outlined by the painful sensation caused by passing the electrode over it, because it oxidizes and removes the inflammatory deposits.

In treating pneumonia, I do not rely entirely upon any single remedy, however efficient. I give my patients the benefit of anything which I have found can be safely depended upon to remove congestion, reestablish normal circulation in the affected organs, and eliminate effete matter from every part of the system.

As pneumonia is usually precipitated by a chill to the surface of the body, causing congestion of internal parts, artificial heat is an auxiliary remedy of too much importance to be neglected. A profuse and prolonged sweat, at the appearance of the first symptoms, often proves sufficient to bring the disease process to a sudden and favorable termination. Maintain the heat by any practical means; keep the patient's room, which should always be well ventilated and ozonized, at a *tropical temperature* (100° or more of Fahrenheit). The patient should be kept constantly in a mild state of perspiration until resolution is fully established.

There are many ways of doing this. If the patient is able to sit up, a vapor bath may be given. When unable to assume an upright position, the same results may be obtained by burning a few ounces of alcohol under the bed clothing in a shallow cup or saucer which is allowed to float in a deep, narrow vessel partly filled with water to prevent the vessel from breaking. Care must be taken that the bedclothes are raised and supported a foot or more over the patient and so arranged that only the head is exposed and the heated air surrounding the patient's body is not allowed to escape. A cool, damp cloth should be kept constantly on the forehead to prevent headache or an uncomfortable sensation of fullness which might otherwise occur.

Bottles or rubber bags filled with hot water, placed close to the legs and body of the patient, are very serviceable; hot tub baths may be used, with great benefit, in the incipient stage. When available, the electric-light bath is the most natural, effective, and grateful means of applying external heat, as the patient at the same time receives the benefit of powerful light coupled with ozone.

External heat, as a means of inducing perspiration, is to be preferred to drugs; the latter always produce additional effects which it is better to avoid. In fact, the fewer the drugs that are employed in the treatment of this or any other disease, in order to secure desirable results, the better it is for the patient. His vitality is not wasted in maintaining activities which have no direct remedial bearing upon the disease. Encourage sleep. Avoid everything that has a tendency to startle or shock the patient, as noise, unnecessary conversation, touching him with cold hands; and see to it that his chest is not oppressed by heavy coverings or by weight or pressure from any cause, such as poultices.

Just here I desire to utter an emphatic protest against the use of very cold applications, especially in the form of ice, over the lungs. Instead of diminishing the internal congestion, as it is supposed to do, by drawing the excess of blood into the circulation, a very different result, according to Dr. Hensel, is produced. "Owing to the attempt to diminish the heat by ice, the congested blood," he says, "is by no means drawn into the general circulation, but because of the mechanical constriction of the capillaries, through cold, it is merely driven into the capillaries at a little distance from where the ice is placed. While the cold operates and the paralyzing action of the ice on the nerves continues, no evil effects are perceived, but as soon as the ice is removed the congested blood begins to decompose and poisons the rest of the blood in the body. Then we read in the papers: 'In spite of the fact that ice compresses were applied with frequency, the disease was, nevertheless, not overcome, and all the skill (?) of the physicians proved in vain.' The proper way of expressing this, he adds, would be "the inflammation of the lungs passed into putrefaction because the pedant of a doctor made the mistake of keeping the inflamed blood fixed in one place, by the application of ice, instead of conducting it towards the skin and so distributing it through the system."

Another very important adjunct of ozonation, and in some measure a substitute for it, is oxygen. How many physicians are there who use oxygen in the first stage of pneumonia? Yet, this is the very period in which it is capable of doing the most good. At this stage, oxidation of the morbid contents of the air-cells is more rapidly accomplished and normal circulation more readily reestablished than later, when solidification has occurred.

Elimination must be looked after. Keep all of the eliminative organs active. If the bowels are constipated, give a saline cathartic followed by olive oil as a lubricant and nutrient, and keep them open by at least two enemas daily. No more effete matter should be allowed in the colon than is absolutely unavoidable, so that danger from the absorption of toxins will be reduced to a minimum.

In the use of drugs my favorite prescriptions for an adult are: Tincture of aconite root, ½ to 1 drop, with tincture of veratrum viride, 1 to 2 drops, in water, every half hour or hour, until perspiration is well established; and asafetida, 5 to 10 grains, in capsule every four hours. The aconite opens the peripheral capillaries, and the veratrum gives the heart power to force the blood through them and also opens the larger vessels, thereby depleting the congestion in the lungs. This prescription should be discontinued when the crisis is reached, and strychnine, in small doses (1-100 to 1-60 grain), should be given three or four times a day, as the pulse may indicate. I seldom find the strychnine necessary when ozone is administered, because the latter is of itself a powerful stimulant.

The asafetida is a pulmonary and nerve stimulant, and the number of doses should be diminished to one or two daily, as soon as the lungs become free and clear. Parenthetically, I desire to state that I find asafetida, in large doses, to be of the greatest assistance in the treatment of all congestions and particularly of the lungs. It is a mild cathartic and diuretic and exerts a marked germicidal influence. Physicians who cannot avail themselves of ozonation will find it, as prescribed above, of paramount importance in all cases of pneumonia.

The patient should be well nourished in order that his strength may not wane. Maintain nutrition by all the appropriate food he can bear. Delicate persons with weak digestive power require food which is readily digested, such as milk and eggs, in small amounts, frequently repeated. After the crisis I often allow beef juice and hearty food. It is here, in the rôle of improving nutrition, that

ozonation plays such an important part. It seems to stimulate all of the nutritive processes throughout the entire digestive tract. Under its influence foods are digested and assimilated which otherwise the system could neither tolerate nor utilize. Stimulants are seldom needed when ozonation is employed. Otherwise, it is necessary to give them liberally, especially in the form of whiskey, when there is delirium or when the heart's action is weak.

After the lungs are clear, do not keep your patient constantly in bed, under the impression that the recumbent position will conserve his strength; too much inactivity always results in weakness. Let him sit up, more or less, the first day after the crisis. Unless he has organic heart disease, I have found nothing but the best results to follow this practice. Of course, if the patient has become exhausted by a prolonged illness before this specific treatment is resorted to, the recumbent position should be insisted upon; but as a general rule the more the patient is kept in bed the longer will be the period of his convalescence.

With the exception of ozonation, the different features comprised in the method I am advocating are neither new nor untried. They have been successfully employed by me for many years. But since I have been using ozonation my success has been phenomenal.

One word, in conclusion, concerning the advantages afforded by this method. In addition to the greatly lessened mortality, which is its best recommendation as well as a source of great comfort to the patient, it is highly appreciated by business men and those occupying positions of trust and responsibility on account of the speedy recovery it insures.

Moreover, because of the rapid and thorough elimination of the disease, owing to the invigorating methods employed, not only are many complications and sequelæ avoided, but chronic, minor affections from which the patient may have suffered often permanently disappear.

Preventive medicine is the ideal goal of medical science, and the more successful the physician is in preventing disease or curtailing its course the greater service does he render to humanity.

7 West Fifty-eighth Street.

PRIMARY CARCINOMA OF THE INFERIOR TURBINATE, WITH REPORT OF A CASE.

By William Wesley Carter, A.M., M.D.,
New York.
Assistant Surgeon Manhattan Eye, Ear, and Throat Hospital.

Probably no more serious or important duty ever comes to the rhinologist than that of making an early diagnosis in cases of suspected malignant disease of the nose. The disease is insidious in its development, and experience here, as in other parts of the body concealed from direct inspection, shows that the diagnosis is seldom made early enough to eradicate the disease by operation, for the mortality is practically 100 per cent., which includes both operative and non-operative cases.

Malignant disease of the nose is very rare and usually occurs in the ethmoidal or sphenoidal region; the case that I present, therefore, is one of the rarest clinical developments of intranasal malignancy, for the disease is primary and in the lower part of the nose.

Mary C., aged thirty-eight, married, applied for treatment in the Manhattan Eye, Ear, and Throat Hospital early in October.

Her family history is good. She has always lived under fair hygienic conditions. Appetite and digestion are good, and the bowels are regular. She is a moderate tea and coffee drinker and takes beer occasionally.

Her menstruation began at sixteen, was regular until several years ago, since this time it occurs sometimes as often as every two weeks. She does not remember ever being sick except after miscarriage six years ago.

Her present illness began five months ago with a tickling sensation in the right nostril, and a constant desire to blow the nose. In a short time this was followed by spontaneous hemorrhages from this nostril; in four weeks the hemorrhages had greatly increased in frequency and the nostril was occluded. In the meanwhile she suffered continually with headache. At this stage she applied for treatment at a dispensary, where a growth was removed from the right nostril. This relieved the stenosis and other symptoms for the time. In four weeks all of the original symptoms had reappeared. She then went to a private physician, who removed the growth and examined it under the microscope. He found that it was cancerous and advised her to go to the hospital for more radical treatment.

I saw the patient three weeks after the last removal of the growth. The woman was well nourished, showed no signs of cachexia, and except for being extremely nervous seemed to be in good physical condition.

Examination of the nose showed a cauliflower-looking mass attached to the anterior extremity of the right inferior turbinate, and almost filling the nasal cavity; it evidently extended back some distance, but just how far could not be determined by anterior examination, and it could not be seen by posterior rhinoscopy. There was a serous, odorless discharge from the nostril and this, where it filled the sulci between the coarse granulations that covered the growth, had a milky appearance. Otherwise the nose and its accessory cavities seemed normal.

A large piece of the growth was removed with the snare for microscopical examination; this operation was followed by considerable hemorrhage. The tissue was very friable, offering no appreciable resistance to the snare. The specimen was examined by Dr. Jonathan Wright, who promptly stated that it was a typical columnar celled epithelioma. An immediate operation was advised. Believing that a cancer of five months' standing or longer must have so seriously involved the adjacent tissues and especially the antrum, that an excision of the superior maxilla would be necessary, the case was referred to a general surgeon.

On October 4 Dr. Andrew J. McCosh performed the following operation at the Presbyterian Hospital, the writer being present:

Fergusson's incision, reaching from the inner canthus of the right eye down by the side of the nose and through the middle of the upper lip, was made. All the tissues were elevated from the anterior wall of the antrum, and the soft tissues of the nose from the margin of the nasal cavity. The nose was then pulled toward the left, giving a good view of the operative field. It was then seen that the growth was confined to the inferior turbinate, and an opening into the antrum showed this cavity to be normal. The whole of the external wall of the nasal cavity down to and including a portion of the floor was removed, together with the inferior and middle turbinates and a large portion of the anterior wall

of the antrum. From an examination of the specimens removed the pathologist of the Presbyterian Hospital confirmed the diagnosis of cancer.

Though the growth involved only the anterior two-thirds of the inferior turbinate, the operation was extended far into the normal tissue, as was afterward shown by the microscopical examination of numerous specimens. We believe that every particle of malignant tissue was removed locally, for the operation extended far beyond the limits of probable invasion by contiguity.

The external wound was closed and drainage was effected through the nose. Primary union took place and the patient was discharged from the hospital on October 19, fifteen days after the operation.

She was put on tonic treatment and at present, nearly three months after the operation, she seems in better condition than when I first saw her. There are at present no signs of recurrence. A later report upon this point, however, will be of more value.

Points of special interest in this case are:

1—The extreme rarity of primary cancer of the nose, and especially of the inferior turbinate.

2—The early age at which the growth appeared (it being almost unheard of before the forty-fifth year).

3—The age, location, and extent of the growth seemingly being favorable, we have here a fair opportunity to test the efficiency of the radical operation to cure malignant disease of the nose.

The first case of primary cancer of the nose was reported by Robin in 1852. However, as late as 1869 no less accurate observers than Finder, and Cornil and Ranvier denied that malignant disease ever originated in the nose; and though this assumption has been proved to be incorrect, we may still state that its occurrence in the nose is very infrequent compared with other parts of the body.

Dreyfus, who considers only those cases in which there has been confirmation by the microscope, states that out of 9,554 malignant tumors of the entire body there were only 19 of the nose; of these 15 were sarcomata and 4 carcinomata.

In 28,000 patients seen by Herzfeld during a period of ten years, only one case of carcinoma of the nose was observed.

In Frankel's clinic Finder observed 10 sarcomata and 4 carcinomata among 28,000 patients.

Maljutin states that out of 125 malignant tumors of the nose collected by him only 17 were carcinomata.

In 1903 Darnall stated that the total number of reported cases of primary carcinoma of the nose and its accessory cavities was 79. All of these, however, were not confirmed by the microscope. A search of the literature since this time enables me to add to this number 19 cases, making the total number up to date 98. It seems almost necessary, if we consider these statistics, to classify primary malignant disease of the nasal cavities with that of the accessory sinuses, as many of the cases were seen only after the involvement of so much tissue that it was impossible to tell exactly where the growth originated. It is generally admitted, however, that primary malignant disease of the accessory sinuses is much more common than of the nose, and it is highly probable that a great majority of these 98 cases originated in the accessory cavities.

A review of the cases shows that sex has no appreciable influence in the etiology of the disease.

Carcinoma of the nose occurs only in later life, hardly ever before the forty-fifth year. Here carcinoma stands in strong contrast to sarcoma, which may occur at any age, but especially in the young; Schneigelw reports a case of chondrosarcoma of the nose in a child two years old.

By some, trauma is considered an etiological factor, but these men base their belief on such uncertain evidence as the statements of the patients as to when the trouble began, as in a case mentioned by Becker, whose patient attributed the disease to a fall on the back of the head. Irritated areas in the nose from which polypi have been removed have been spoken of as the seat of carcinoma. Cases demonstrating this origin have been mentioned by Trautman and Frick.

As to the origin of carcinoma from polypi, there has been much discussion. As yet, however, no stronger evidence has been brought forward to support this view than that of association. The fact that carcinoma most frequently occurs in the upper part of the nose in the region of the sphenoid and ethmoid, the area usually affected by polypi, certainly suggests some relation between the two. If, however, we take into consideration the frequency with which polypi are found, their occasional occurrence with carcinoma is to be expected. Heyman found that polypi constituted about 10 per cent. of all his nasal cases; and Zukerkandl found polypi in the nose in one out of every ten autopsies. At the same time we are not in a position to say that the irritating presence of polypi does not favor the development of carcinoma. In fact, long continued irritation in the nose, as in other parts of the body, seems to be a strong factor in the etiology. The polypi accompanying the cancer and sometimes combining with it, forming a mixed growth, may be accounted for by the irritation of the cancer and its necrotic products.

There is evidence that cancer may be developed from such benign growths as adenomata and papillomata after the cancerous age has been reached, and when they have been subjected to long-continued irritation. Kümmel, who made a microscopical study of the epithelial cancers of the nose, says that they all remind one of adenoma, and he believes this to be the chief origin of cancer. Cordes reported a case that seemed to be developed from adenoma. Polyak observed a pure papilloma for two and a half years that later showed cancerous metaplasia under the microscope. Citelli and Calamida also found microscopically that a papilloma that had been subjected to many irritations became cancerous. On the other hand, Sir Felix Semon says that he has not seen such transformation occur in 10,000 cases.

The disease is so insidious in its development that it may be far advanced before the symptoms are sufficiently pronounced to send the patient to the physician.

Nasal obstruction and headache are probably the earliest symptoms. Repeated hemorrhages may be mentioned as one of the earliest and most suggestive signs of malignancy; they may be spontaneous or induced by slight traumatism. In my case nasal stenosis, headache, and hemorrhage were the only subjective symptoms. Pain, at first neuralgic, later deep and boring in character, is a late symptom; it is present early if the growth is in the upper part of the nose.

The discharge may be serous, bloody, or purulent, and if the disease is advanced it has a necrotic, fetid odor. When the sinuses are involved, the early symptoms are those of empyema of these cavities.

Infiltration in carcinoma of the nose does not seem to be as rapid as in some other parts of the body. There is a tendency for the disease to extend upwards along the lymph channels that communicate with the subdural and subarachnoid spaces, many of the cases terminated from cerebral involvement. It also extends backward toward the choanæ and ptarygoid fossæ. Recurrence is very rapid after incomplete removal. In my case the growth had fully returned within four weeks on both occasions when it was removed to relieve stenosis.

There is little or no tendency to metastatic deposits in other organs. Glandular involvement does not occur so often, nor as early, as in malignant disease in other parts of the body. The lymph stream of the nose runs to the back of the choana and is collected in the side walls of the pharynx; here it communicates with one or two glands situated near the Eustachian tube. It then divides, one part courses downward and outward, joins the vessels from the tonsils and arches of the gums and communicates with the deep cervical glands, one part goes to one or two glands situated near the greater cornu of the hyoid bone. The second division passes backward and communicates with a gland situated in front of the axis vertebra. In only two of the recorded cases were the glands of the neck involved.

From an anatomical point of view the lateral pharyngeal gland, the gland in front of the axis, and the glands near the greater cornu of the hyoid would be the first involved in carcinoma of the nose.

Cachexia is one of the late symptoms; it was not present in my case.

In making the diagnosis we must differentiate from sarcoma, benign tumors, tuberculosis, and syphilis, also from chronic inflammatory conditions. The writer once saw a granular mass on the right middle turbinate of a man who had been accustomed to take snuff through his right nostril for many years. From its appearance it could have been mistaken for a malignant growth; it proved to be an overgrowth of tissue due to the irritation of the snuff.

Sarcoma differs from carcinoma in that it may occur in the very young; it is usually bluish-red in color and has considerably more consistency, in some cases being quite hard. It produces its deformity by pressure and displacement of normal structures rather than by ulceration, as in carcinoma, and it is not as a rule accompanied by cachexia.

Benign tumors usually have pedicles, while malignant ones are sessile.

There should be immediate cooperation between clinician and pathologist in suspicious cases, for an early diagnosis offers the only chance for successful operative interference. Where a diagnosis of cancer is made, the radical operation should be performed as soon as possible after the removal of the specimen for microscopical examination, lest this procedure should accelerate the disease. We must remember that this traumatism may not only liberate the cells of the cancer, which are very loosely bound together, but it may open up blood-vessels and lymphatics to take them up and disseminate them beyond the intended operative field. Cells thus taken up have been seen in the lymph channels under the microscope by several pathologists. That the fatal termination is greatly hastened by every inadequate operative procedure is borne out by the experience of every writer on this subject.

The prognosis is bad; only recently Bloodgood has stated that not one of the 18 patients with malignant disease of the nose operated upon at the Johns Hopkins Hospital recovered. There is no authentic case on record where recurrence has not taken place after the operation, and often this recurrence has taken place before the patient was able to leave the hospital.

The duration of the disease depends upon the age of the patient and the nature and location of the growth. The disease progresses more rapidly in the aged, and when it is located in the upper part of the nose. The medullary and adenocarcinomata are the least malignant and last the longest. The average duration of the disease is from one to three years. But Heurteux reported a case that lasted fourteen years, Bosworth one that lasted nine months, and Darnall and Gibb each reported one that lasted only seven months.

But one variety offers any ground for a favorable prognosis, and that is the so-called cylindroma of Billroth. However, there still remains among pathologists some doubt as to the malignancy of this growth.

Operative treatment alone is to be considered in dealing with these cases. If the site and extent of the lesion are favorable to complete removal, a radical operation should be done, otherwise all writers agree that a fatal issue is much hastened by interference. If, however, palliative measures are demanded for the comfort of the patient in inoperable cases, portions of the growth should be removed with the galvanocautery. The dangers of the operation are hemorrhage, pneumonia, erysipelas, sepsis, and meningitis.

The choice of operation should be made according to the location and extent of the growth, and with a view to giving access to the greatest amount of nasal tissue. Intranasal operations are useful only as palliative measures.

In some cases a modified Jansen's operation may be effective, but where the growth is in the upper part of the nose, and both sides are involved, perhaps Ollier's operation gives the best view of the field; this consists in sawing through the nasal bones and turning the nose forward on the face. When the antrum is involved, excision of the superior maxilla is the only operation to be considered.

60 West Fiftieth Street.

EMBOLISM.

By JOSEPH N. STUDY, M.D.,

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The name embolus applies to any foreign body floating in a blood-vessel. Before becoming detached these bodies are known as thrombi. One of the very frequent sources of embolism is a pathological condition of the inner coats of arteries, veins, and the cavities of the heart. An altered condition of the blood, in which its viscosity is possibly increased, following disease or other conditions, may at times have something to do in the formation of emboli. Upon either an acute or chronic phlebitis bacteria of various sorts and other matter may collect to form these bodies. It is not improbable that many cases of embolism occur from the direct entrance into the blood stream of elements capable of producing this condition.

An embolism may be septic or aseptic. The em-

boli may be small enough to pass through the smaller blood-vessels, or sufficiently large to completely obstruct the larger arteries, or even a cavity of the heart. A fat embolism sometimes follows trauma to the soft parts, where there exists adipose tissue, as well as in fractures where bone marrow is exposed, the fat globules finding their way into the circulation. Fat embolism has been detected in the brain and spinal cord. It has been thought that a fat globule, by being rapidly propelled against the sides of an artery, may be broken into smaller particles, reaching the floor of the fourth ventricle, where the cardiac and respiratory nerve centers are located, in this way causing sudden cessation of one or both of these organs. It is not improbable that many sudden deaths following diphtheria, pneumonia, and various other conditions, and usually attributed to heart failure, are due to infected septic emboli finding their way to the cardiac nerve centers.

All recognized authorities have in the past taught and emphasized the matter in no uncertain way of the danger of air entering a blood-vessel, and its liability to produce embolism. More recent experiments upon horses and the smaller animals teach that it is only when large quantities of air enter the circulation under considerable pressure that any serious symptoms arise. Then that air may enter a blood-vessel, either from a surgical operation or trauma, to a vessel in sufficient quantities to produce death, is rather improbable. It does seem very probable that metastatic abscesses in various organs and local inflammation, as well as ulcerated conditions, do at times owe their origin to infected emboli. Embolism has complicated and followed various pathological conditions. It has followed and complicated typhoid fever, pneumonia, diphtheria, childbirth. It is said very frequently to follow surgical operations, more especially within the pelvic cavity.

In the differential diagnosis of embolism, where trauma precedes this condition, there are three things to consider. Shock usually occurs within three hours, fat embolism three days, pulmonary embolism three weeks. Seventy per cent. of all emboli probably enter the pulmonary artery. As these bodies most usually originate in a vein, they enter the right side of the heart, consequently the pulmonary artery is a favorable site for their migration. The clinical history of many cases of embolism would indicate that this condition frequently occurs simultaneously with, or following some bodily movements, or excitement, as walking, laughing, or other muscular movements, which seem to aid in liberating these bodies; and when once detached evidently they soon reach their final destination. Embolism may terminate in one of three ways —in instant death, in delayed death, or in recovery. When the pulmonary artery is completely closed death must necessarily soon occur.

It is said that recovery has followed the complete obstruction of one of the primary branches of the pulmonary artery. An embolism is at all times a dangerous quantity to deal with, and as such must so be considered. However, even in the lungs emboli do not always produce death. The lung tissue being nourished by a separate set of vessels, the bronchial arteries, its nutrition need not necessarily suffer. Local inflammation that writers have described so often and termed as embolic pneumonia is very liable to follow the migration of an embolus into the lungs. Such a condition may terminate in various ways.

I desire to report two cases of pulmonary embolism.

Case I.—Mrs. W——, age thirty-one, American, married two years, was never pregnant; menstruation was regular but attended with some unusual pain at times. Her previous health had been good. She presented a most excellent physique, weighing about 140 pounds. She was taken with some pain, not severe, about the left ovary, and was having some little increase of temperature, not exceeding 100.5°. At the end of four days she had a normal temperature and was free from pain, and professional visits were then discontinued. The following afternoon she was up about the room and some neighboring ladies had called to see her, when she expressed herself as feeling quite comfortable. Soon after, she was in the act of walking across the room, when she experienced great difficulty in breathing, was assisted to a couch, and some thirty minutes later died. Through the courtesy of her physician, Dr. J. E. Wright, I was permitted to assist in making an autopsy, and was accorded the privilege of reporting the case. The pulmonary artery contained a spindle-shaped embolus one inch long, completely obstrucing the vessel, which was of a dark red color and of a friable consistence, easily breaking when manipulated between the fingers. The left Fallopian tube contained about one dram of a seropurulent fluid. No other pathological condition was observed.

Case II.—Mr. S., age forty, American, farmer by occupation, previous health good, sustained a fracture of the left patella, the lower fragment being broken into two pieces of about equal size. There was considerable ecchymosis over the knee, as well as swelling. The fracture was dressed in the extended position, and the patient had made satisfactory progress until the twenty-first day after receiving the injury. The man had eaten his breakfast and had read the morning papers, directed his hired man about his work, and expressed himself as feeling well. One hour later he was placed upon the commode for his bowels to move, and when being replaced upon the bed he experienced much difficulty in breathing. He was soon visited by his physician, Dr. A. E. Ehle, and his breathing and heart's action were so alarming that strychnine and one pint of normal saline solution, subcutaneously, were administered. The strychnine was repeated at intervals of two hours. Six hours after the beginning of the attack I visited the patient and noted the following conditions: Respirations 48, pulse 150, temperature in axilla 103.5°; skin somewhat cyanosed and perspiring freely; neither pain nor cough was present, but the patient complained of want of air. The stethoscope revealed air in normal quantities entering both lungs. The following forenoon I again examined the patient, when his respirations were 44, pulse 140, temperature 102.5°. No pain was complained of, but an occasional dry cough. Auscultation indicated that air in normal quantities was entering both lungs, and still he felt the need of more air. Four days later I examined the patient, when his respirations were 34, pulse 125, temperature 102°. Auscultation revealed partial solidification of the lower portion of the left lung. At no time was pain complained of, neither was there any expectoration. At the end of four weeks the man was permitted to sit up. Two months later the patient appeared at my office, the injured limb yet swollen up to the groin, supported by a rubber bandage. His lungs seemed to have fully recovered from the embolic obstruction.

REPORT OF A CASE OF INOPERABLE ROUND-CELLED SARCOMA OF THE OVARY;

SUCCESSFULLY TREATED BY THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS, COMBINED LATER WITH OPERATION.

By HENRY C. COE, M.D., and WILLIAM B. COLEY, M.D.,

NEW YORK.

Mrs. E., aged thirty-two, wife of a lieutenant of the U. S. Army, was referred to Dr. Coe by Dr. H. Eugene Stafford of the Philippine Civil Hospital of Manila on December 29, 1904, under whose care she had previously been. Her previous history, as given by Dr. Stafford, is as follows:

Early in November, 1904, Dr. Bailey of the U.S.A. was called in to see the patient, and he treated her for two weeks for what he supposed was an inflammation of the left ovary, when a tumor developed and he referred her to Dr. Stafford for operation. Dr. Stafford saw her in consultation with Major E. C. Carter of the U.S.A. Examination revealed a large, immovable mass filling the pelvis. The uterus was crowded down almost to the external genitals. There was considerable tenderness of the lower abdomen, which did not permit of much palpation, and the abdominal muscles were rigid. She was prepared for operation and upon becoming anesthetized the abdominal muscles relaxed and the tumor was seen to have grown up to, and a little above, the umbilicus to the right side. Upon opening the abdomen the mesentery was found adherent to the outer surface of the tumor. This being dissected free and a portion incised, the tumor was seen to be nodulated in character, of a dark bluish-white color, and, upon passing the hand down its anterior surface to the pelvis, the greater portion was found adherent. Upon pulling the tumor forward enormous blood-vessels were seen, covering the back of it and springing from and above the posterior brim of the pelvis. From the general appearance, its rapid growth, and extreme vascularity, we decided it was a malignant growth, probably sarcomatous. On endeavoring to free the tumor from the blood-vessels, we found it was not adherent, but was growing apparently from the whole of the pelvic wall, and its bleeding so freely convinced us that it would be wisest to abandon further interference, particularly as her husband desired her to reach home to see her parents before dying. The incision was closed and the patient was more comfortable. A portion of the tumor was tied off and excised and sent to the Government laboratory. The pathological report, which convinces me that the patient will hardly live to reach New York, reads as follows: "An apparently rapidly growing and infiltrating, very cellular growth of probably perithelial origin; perithelial hemangiosarcoma."

The patient entered the General Memorial Hospital on February 20, 1905. At that time the physical examination revealed practically the same conditions as just described by Dr. Stafford. Her general health was steadily deteriorating and she was losing weight. Since the operation she had menstruated every twenty-eight days, the flow continuing for seven days, moderate in quantity. Heart and lungs normal. Inasmuch as the tumor was firmly fixed and clearly inoperable, Dr. Coe turned the case over to Dr. Coley for treatment with the mixed toxins, which was begun on February 24, 1905, the first dose being ½ minim, which was injected into the abdominal wall. The injections were continued three to four times a week, in gradually increasing doses up to the point of producing a moderate reaction, a temperature of 101° to 102°. The patient's general condition was not such as to permit of giving her very large doses, and often a temperature of 102° was followed by a good deal of depression; the highest dose reached was 7 minims and the highest temperature 104.8°, which occurred on March 30, following an injection of 6 minims. Most of the reactions were much less severe, the temperature usually not rising beyond 101°. She received in all forty-seven injections, the last being given May 31. The *x*-ray was given in combination with the toxins, though much less frequently, the patient receiving all told twenty-two exposures of an average duration of ten minutes. There was a very slow diminution in the size of the tumor during the period of treatment and marked increase in its mobility. Her general condition showed no improvement—in fact, it seemed there was slight deterioration. It was clearly evident that her condition would not permit of giving large enough doses to produce complete absorption of the tumor, and in view of the marked increase of mobility we decided, after careful examination, that there was a possibility of removing the tumor by operation.

On June 12, 1905, operation was performed by Dr. Coe, assisted by Dr. Coley. A tumor, about the size of a child's head, was found, originating in the right ovary, markedly pedunculated and almost entirely free from adhesions. No metastases were present in the other organs. The pedicle was tied off and the tumor was easily and rapidly removed, the entire operation taking not more than fifteen minutes.

The effects of the toxin treatment upon the tumor were most remarkable, as shown by Dr. Martha Tracy's report, confirmed by Dr. James Ewing: "The tumor within was very much degenerated, the contents being almost of a puriform consistence. Therefore, it was difficult to fix and stain, and the diagnosis is not clear. Dr. Ewing is unwilling to say whether it is sarcoma, endothelioma, or carcinoma, though of the malignancy there is no doubt." The report of a less degenerated portion of the tumor by Dr. Clark, the pathologist to the General Memorial Hospital, was round-celled sarcoma.

The patient made an uninterrupted recovery, gained twenty-eight pounds in weight during the next six weeks, and returned to her home in perfect health. Within the next six months she conceived and gave birth to a healthy child in the summer of 1906. She remained well up to the latter part of January, 1907, when she contracted pneumonia and died within a few days.

The case is interesting from several standpoints. First, because sarcoma of the ovary is an exceedingly malignant neoplasm. We have never yet seen a case cured by operation. Second, because the tumor, though clearly absolutely inoperable at the start, became operable by the preliminary treatment with the toxins, possibly assisted by the *x*-rays, although we have never had an abdominal sarcoma show much improvement from the *x*-rays alone.

While sufficient time had not elapsed to warrant us in classing the case as cured, the complete restoration to health and prolongation of life for nearly two years, when it was cut short by an attack of pneumonia, make the case of sufficient interest to merit reporting.

Note.—From a recent letter received since the above went to press, there seems a possibility that there was metastases in the lung instead of a typical pneumonia.

MEDICAL RECORD.

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ESPERANTO.

AMONG the countless attempts that have been made to construct an international language to serve as a common means of communication for all the peoples of the earth, Esperanto stands out as the most successful. Volapük seemed at one time about to conquer the world, but the movement went to pieces by reason of certain fatal defects in construction and of the obstinacy of the creator of the language in refusing to accept any amendments looking to the correction of these faults. Dr. Zamenhof, the originator of Esperanto, is, however, a different sort of man, whose modesty and whose love for the creature of his brain forbid that he should destroy this by refusing to listen to proposals for its betterment, if such might be found necessary. But, so perfect is the instrument his genius has created, that there is apparently no room for any but the most trivial changes. It is unnecessary, even if space permitted, to describe the mode of construction of the language, for those interested can readily obtain authorized grammars which can be mastered in a few days of careful study. It is a language of root-words, most of which are already familiar to anyone with a reading knowledge of the three principal tongues of Europe. From these roots, by means of prefixes and suffixes, is built up a vocabulary which seems to meet every verbal need of man, whether for ordinary conversation or for scientific discussion. Anyone of average intelligence can master these rules of construction thoroughly in one week by giving an hour a day to their study. Then, if already familiar with Latin and Teutonic roots, he will be able to read almost at sight any Esperanto text, using a dictionary only to learn the meaning of the few Slavonic roots that Dr. Zamenhof, himself a native of Bielystok, Russia, has incorporated in the language. The ability to write or speak the language would, of course, demand more practice, but the diligent student would in a month find himself able to communicate with ease with Esperantists in any part of the world—at least, so the Esperanto enthusiasts claim.

It will surprise those who have not had their attention turned to the subject to learn what a position this new language has already acquired in the few years it has been in existence. Mr. Joseph Rhodes, vice-president of the British Esperanto Association, says (we quote from the *North American Review* of February 15, 1907): "Statistically considered, up to June, 1906, Esperanto was known to have penetrated to 31 countries, and 377 societies or groups were at work, Europe being credited with 349, America with 16—the United States having then 10 societies in 7 centers—Asia with 7, Africa with 3, and Oceanica with 2. To give a census of Esperantists is impossible, but a recent moderate guess at their number is 300,000. There are also 31 professional societies or organizations using Esperanto for special objects, 28 Esperanto magazines, in which the national language appears side by side with the international, and 8 national periodicals containing a regular Esperanto column. Europe is, so far, the center of gravity, and here the societies are distributed: France, 94; Great Britain, 64; Germany, 35; Austria-Hungary, 28; Switzerland, 22; Russia and Spain, 21 each; Bulgaria and Sweden, 15 each; Belgium, 14; Holland, 7; Denmark and Malta, 3 each; and Monaco, 1."

Any movement, whether linguistic, socialistic, religious, or scientific, which has acquired such a momentum in a single lustrum (Dr. Zamenhof's first pamphlet was put forth in 1887, but, though a few enthusiastic recruits were obtained almost immediately, the language has really been launched but little more than five years) is worthy the respectful attention of thinking men. It is already receiving practical recognition in many of the countries of Europe. The governments of France and Belgium are considering the advisability of teaching Esperanto in the public schools; the London County Council has authorized the study in some of its schools; it is being taught unofficially in the French Army; the London Chamber of Commerce has placed it among the official subjects of examination; the children of many of the royal families of Europe are learning it; and in Germany there are two publishing houses making a specialty of Esperanto publications. Medical men, especially in France, but not a few in this country, are enthusiastic students and propagandists of the language, and there is already in existence one Esperanto medical journal.

The need of an international language for scientists and physicians is self-evident, and the MEDICAL RECORD has repeatedly called attention to this, especially in relation to the Triennial International Medical Congress, in which the babel of tongues is so manifestly a bar to intelligent discussion. The immense advantage that there would be in the use of a single language, understood and spoken by all in these congresses, is universally acknowledged, but unfortunately international jealousies stand in the way of the adoption of English, French, or German as the sole official language. The MEDICAL RECORD has from time to time urged the adoption of modern Greek (a language as easy to learn as French or German) as one which all might accept, without wound to national pride, and we still maintain, for many reasons which we cannot here repeat, that this would solve the problem satisfactorily, at the same time promoting sound scholarship. But, needless to say, the suggestion has failed of acceptance, and we frankly despair of ever hearing the melodious phrases of Hippocrates or Galen resound in the meeting hall of any international medical congress. It remains to ask whether Esperanto will supply this want of a means of international communication among medical men. It may, and we doubt not the question will be seriously considered at the

forthcoming Budapest Congress. Except as a compromise, we cannot imagine any scientific body adopting as its official tongue a Frankenstein creation—perfect indeed in form, but soulless, such as is Esperanto. Nevertheless, the need of some common means of communication is imperative, and the acceptance of any single language, even an artificial one, as the official tongue of those taking part in the discussions at international congresses would be of incalculable service to scientific progress.

SEQUESTRATION ANEMIA IN SURGICAL OPERATIONS ON THE BRAIN AND SKULL.

Hemorrhage must be regarded as the chief source of shock in operative work, and the efforts to check the same have always constituted one of the principle aims of surgical technique. The hemostatic clamp and ligature have been found wanting in many respects, and in certain operations, as on the limbs, the blood has been kept from freely circulating in the member by the application of an appropriate tourniquet. The value of this procedure is undoubted, for not only is the operative field kept clear, but the blood is stored away in other parts for use as a preventive of shock. But what surgeon, asks Dr. Dawbarn, in an article in the *Annals of Surgery* for February, 1907, when about to operate on however vascular a field of the head, the neck, or the body, ever applies this same principle, and, to avoid hemorrhage, accumulates blood in the extremities? The suggestion seems reasonable enough, and if it is advisable in one instance it is obviously so in the other. Naturally the extremities can be made more bloodless than other portions of the body, but Dawbarn claims that experience has shown that we can with entire safety withdraw into the limbs some quarts of the whole bulk of the blood, which constitutes one-thirteenth of the individual's weight. This temporary bleeding into the patient's own vessels can be controlled to a degree by carefully watching the pulse, and the sequestration can be continued until there is a noticeable softening and decrease in the tension, at which point the operation may be begun. In the cases in which the procedure has been applied the writer has observed not only a lessened degree of hemorrhage but also a diminished amount of surgical shock.

It would seem that the suggestion in question might with greatest advantage be applied in surgical operations on the brain or the skull, and Dawbarn has used the method in seven cases of this character. This has afforded a limited though sufficient experience to permit of drawing some conclusions as to its advantages and disadvantages, for it is by no means universally safe or applicable. To begin with, shock is apparently not threatened by sequestration anemia, although the brain and heart may temporarily be deprived of a considerable part of its blood. The vasotonic centers are still sufficiently supplied with the circulating medium, and the partial anemia is well borne compared with the loss of considerable blood, and so constitutes the lesser of two evils. Thrombosis and embolism are the two accidents to be most guarded against, and the causes which might operate to produce clotting of the comparatively quiescent blood are three: changes in the blood itself, in the vessel walls, and in the speed of the current. Normal blood will not coagulate even when the current is markedly slowed, as is evidenced by Bier's method of treatment, but if either the blood or the vessels are unhealthy, the predisposing cause is present which makes clotting possible and sequestration dangerous because of venous thrombosis and possible subsequent pulmonary embolism. Among the conditions which would serve as contraindications on this account are the recent occurrence of typhoid fever or puerperal sepsis, chlorosis or severe anemias of any kind, and the presence of lime salts in excess or atheroma of the vessel walls.

Among the chief advantages claimed for this method of sequestration anemia in brain and skull surgery, as summarized by Dawbarn, are the following: Ease of control of hemorrhage during the operation because of the lessened vascular tension; a shortened operation because of a dryer field; a lessened danger of sudden death from pressure on the respiratory center during work on a brain tumor or similar condition, because there is an accumulation of blood elsewhere, and finally more space between brain and skull for working, which permits the removal of old clots or the separation of adhesions without the risk of lacerating the surface of the brain. One feature about this procedure which needs comment is the fact that should any adverse indications appear during the course of the operation, such as irregular or rapid pulse, it is a simple matter to deal with it by slowly releasing one or more tourniquets, so that an increased supply of blood is afforded to the heart. Weighing the advantages and disadvantages of this procedure against the production of shock and hemorrhage, it would appear that the suggestion is a most valuable one if used with the due and proper precautions enumerated in the writer's paper.

THE EFFECT OF A SALT-FREE DIET IN BRADYCARDIA.

It has been observed in a number of instances that the complete withdrawal of salt from the food resulted in a return to the normal of a permanently slow pulse. Notwithstanding this fact, the knowledge has rarely been applied, because the condition of bradycardia has usually been attributed to some disturbance in the innervation of the heart or to a myocarditis, and treated accordingly, whereas in reality a chronic nephritis is almost always the cause of the trouble. Enriquez and Ambard (*Semaine Médicale*, No. 4, 1907), who have made a practical study of the subject, report one case in which the pulse increased from 32 to 72 beats within a period of seven weeks without any measures other than the withdrawal of salt from the food. At the same time there was a well-marked increase in the body weight. In seeking for a cause for bradycardia, the writers contend that as in a true case the contractions of the ventricle alone are diminished while those of the auricle remain normal in frequency, the innervation of the organ is not at fault, for muscular exertion will affect the contractions of both chambers. The other theory is based on the assumption that the motor impulse in a cardiac contraction affects the myocardium without the medium of the

intracardiac nerves. The connection between auricles and ventricles is represented by a muscle bundle which extends from the right auricle through the septum to the papillary muscles of the ventricles. Division of this bundle leads at once to a disturbance of the synchronism between auricles and ventricles. In the animals used for the experiments the procedure also produced the picture of a permanent bradycardia, and a compression of the bundle referred to resulted in the production of the well-known Stokes-Adams symptom complex.

Thus far eight autopsies have been recorded in cases of bradycardia in which the muscle bundle known by His' name has been found to be the seat of lesions, and this fact may be taken to constitute an important support for the myogenous theory of the disease. The reason why the withdrawal of sodium chloride is effective in such cases, therefore, becomes plain, for a chronic nephritis is usually present, together with retention of the chlorides, and the myocardium is therefore constantly bathed in a hypertonic solution which interferes with its proper functions. By withdrawing the salt, the correct physiological tone of the muscle is restored. An important point, however, is that a salt-free diet must be persisted in for a long period of time before any effect can be noted.

Cardiac Dilatation in Pneumonia.

The sudden death in this city not long since of a man prominent in the theatrical world called attention to the danger of a dilated heart in pneumonia. He had been ill for several days with pneumonia, but the attack was light, and recovery would doubtless have occurred had not acute dilatation of the heart occurred. That this is one of the most frequent causes of death in this disease has long been recognized, and not a few clinicians have believed that herein lies the sole danger of pneumonia, and have based their treatment of the disease upon this theory, their efforts being directed from the beginning of the attack to support of the heart. In the *American Journal of the Medical Sciences* for February, Beverley Robinson devotes a considerable part of an interesting article on "Acute Cardiac Dilatation" to the dilatation of the right side of the heart occurring in the course of pneumonia. He refers to the recommendation by A. H. Smith of immediate recourse to the vasodilators in such cases, since the indication is to shift the mass of blood from the veins when it is stagnating to the arteries and the left side of the heart. Robinson, however, believes that local bloodletting by leeches or wet cups is of greater efficacy, and he prefers this even to venesection. He believes the good effect is to be explained, not by the amount of blood taken from the patient, but by the reflex started locally in the right ventricle that is transmitted to the respiratory center, and from there becomes additionally stimulating to the heart. It is also true, as noted by Lees, that the vasomotor nerves are called into action through this reflex, and afford relief through dilatation of the peripheral arteries. We should beware of the use of digitalis instead of the vasodilators in these cases, though Robinson says that, after distention of the right heart has been relieved by leeches or venesection, digitalis may become very serviceable in giving strength to cardiac beats when the pulse is weak, rapid, and intermittent. Digitalis is also sometimes useful, in his judgment, when the heart as a whole is affected and weakened by the toxemia of pneumonia—not merely its right auricle and ventricle because of the pulmonary obstruction.

A Method of Identifying Tuberculous Pus.

About a year ago Müller and Jochmann described a method for determining the proteolytic power of specimens of pus by estimating the degree of digestion of coagulated blood serum caused by the presence of small amounts of the material to be tested. In order to do this, by means of a platinum loop or a glass rod, small drops of the pus are transferred to the surface of a Petrie dish containing Löffler's blood serum. The dish is then kept for a considerable length of time, preferably twenty-four hours, in an incubator maintained at the temperature of 50°-55° C. The occurrence of proteolytic ferment action is then shown by the formation of minute saucer-shaped depressions, of which the pus droplet forms the center. If no ferment is present in the pus the drop simply dries without causing any change in the surface of the medium. The proteolytic action was ascribed by the authors to the setting free of a ferment from the polynuclear leucocytes, and as one of their conclusions they suggested that it might be found possible to make use of this method in differentiating tuberculous pus from that produced through the agency of other microorganisms, owing to the fact that under the conditions stated proteolysis was not, as a rule, produced by tuberculous pus. This idea has been tested in a large number of tuberculous and nontuberculous cases by Kolaczek and Müller (*Deutsche medizinische Wochenschrift*, February 15, 1907). These authors have found that in dealing with pus coming from untreated, closed, purely tuberculous processes no proteolytic action on the blood serum was obtained, while, on the other hand, pus taken from other infections of the most varied nature never failed to give the characteristic digestion of the serum medium. It therefore appears that if a given specimen of pus does not exhibit any proteolytic powers the case is one of tuberculous nature, whereas if there is well marked digestion of the medium the process is probably one of an acute inflammatory character. The test is not, however, in its practical application as simple as this might seem to indicate, for in cases in which there is a mixed infection, or in which the condition has undergone treatment, particularly if this has taken the form of injections of iodoform, proteolytic powers of considerable activity may be present in the pus. Like many diagnostic tests the method, therefore, has a much greater negative than positive value, but it is quite possible that in the hands of those who have become familiar with its limitations it may prove of service.

The Treatment of Gonorrhea.

The multiplication of the remedies available in the treatment of specific urethritis has led to what is perhaps an exaggerated idea of the part played by local applications in the management of the disease. At any rate, Zieler (*Münchener medizinische Wochenschrift*, February 12, 1907) is of the opinion that in considering the therapeutic problems of gonorrhea one important factor is often lost sight of, or at least is not accorded the importance it deserves. This is the beneficial action of the inflammatory process itself, by means of which the bacteria in the deeper layers of the mucous mem-

brane, where they are more or less out of reach of even those urethral medicaments that have the greatest penetrating power, partly are destroyed by the bactericidal properties of the serum, and partly are brought up to the surface with the exudate. It is largely the virtue of the modern silver preparations that they encourage this favorable condition of local hyperemia and exudation without any attending damage to the tissues, while at the same time, through their antiseptic power, they destroy the gonococci that have been brought to the surface of the mucosa, and which would otherwise be able to proliferate actively in the exudate. While there is nothing essentially new in this doctrine it emphasizes a phase of the phenomena going on in the course of an acute urethral infection that is often disregarded, but which, in view of the modern tendency to attach more and more importance to the inflammatory reactions as salutary processes, must not be overlooked.

An Aid in Eliciting the Knee Jerk.

Clinicians not infrequently encounter difficulty in testing the knee jerks owing to the inability of the patient to relax properly the musculature of the leg under investigation. It was to facilitate the examination in such cases that Jendrassik devised his simple maneuver for diverting the attention of the patient, and thereby eliminating all stimuli that might interfere with the completion of the reflex arc. As is well known, this maneuver consists in having the patient pull, with the flexed fingers of the one hand against those of the other, at the same time looking upward. Krönig (*Berliner klinische Wochenschrift*, October 29, 1906) says that while this procedure is usually successful, it is sometimes difficult to induce patients of a low grade of intelligence, or children, to carry it out properly. He suggests in such cases resort to the following method: The patient is directed, at the word of command, as quickly as possible to take a forcible inspiration, at the same time looking upward. The patellar tendon is tapped while the patient is carrying out the prescribed act, and it is stated that the diversion of attention thus produced is sufficient to abolish all inhibitory stimuli. Krönig says that the measure is so simple that no difficulty is experienced in having patients of any sort put it into execution, and, after trying it in some hundreds of cases, he avers that it is just as effective as the Jendrassik maneuver, and is superior to this in its universal applicability. The method would seem to have the drawback of requiring considerable attention on the part of the examiner in order to time the percussion stroke properly, and we presume that in most cases the Jendrassik method will continue to be generally used. When difficulty is experienced with this it is possible that recourse to Krönig's suggestion may prove of service.

Autointoxication Following Laparotomy.

Intestinal paralysis after abdominal section occurs so frequently that it is accepted by many as a natural accompaniment of an operative invasion of the peritoneal cavity. Various causes have been assigned to account for this complication, among which damage to the gut by handling or exposure, sepsis, and peritonitis have been accepted as the most common and likely. Within two or three days after operation evidences of intestinal obstruction appear, such as meteorism, absolute constipation, nausea, vomiting, small rapid pulse, and a subnormal or slightly elevated temperature—a clinical picture familiar to most surgeons. If the patient dies the autopsy may fail to disclose evidences of either sepsis or peritonitis and nothing is apparently found to account for the often unexpected fatal ending. Dr. Keller of Berlin, writing in the *Zeitschrift für Geburtshilfe und Gynäkologie*, Vol. 55, No. 2, suggests that this form of intestinal paralysis may possibly be due to an autointoxication and reports two instances in which this seems to have been proven. In neither did the intestine receive any injury during the operation, and yet all the usual clinical symptoms of intestinal paralysis were present. The foul stools which followed the administration of a cathartic brought about a relief from the symptoms and the urine showed a large amount of indican. As a previous history of marked constipation was elicited in both of these patients it would be the part of wisdom, in every case intended for abdominal section, carefully to correct this faulty condition. Aside from the anteoperative prophylaxis it is advisable in every doubtful case to stimulate peristaltic action after operation by appropriate means, among which diet and the omission of opium are important factors.

Amyl Nitrite in Hemoptysis.

In the *Lancet* of January 19, 1907, Dr. Francis Hare refers to the recent publication of Abrams of San Francisco relative to the latter's statement that nitrite of amyl promotes hemostasis of the lung largely through reflex action. Commenting on this statement Hare maintains that the only physiological action of the remedy which rests on any secure foundation is the sudden production of vasodilatation, or in other words, the sudden inhibition of vascular tone, in wide areas, if not generally; this being of necessity associated with a fall of blood pressure and a compensatory acceleration of the heart beat. All other actions ascribed to the drug would appear to depend on mere inference from preconceived theories. For example, from the relief sometimes afforded by it in the asthmatic paroxysm, amyl nitrite is inferred to have the power of relaxing the bronchial muscles. But the inference is unjustifiable because the view that asthma depends on bronchial constriction remains an unverified hypothesis. The only view of the mechanism of the asthmatic paroxysm which is consistent with the known physiological action of amyl nitrite is the vasomotor hypothesis; amyl nitrite relieves asthma by relaxing the peripheral vasoconstriction, which is an essential factor in the bronchial vascular distention responsible for the obstruction to respiration.

News of the Week.

The Evil Spirit of Paternalism in Medical Organizations.—In his presidential address to the Medical Society of the State of New York, at its recent annual meeting, Dr. Joseph D. Bryant, now president-elect of the American Medical Association, said: "It would be sadly amiss, indeed, were I not to admonish you at the opening of a united career of the grave perils begotten by the spirit of paternalism which, not infrequently, is a pernicious by-product of organized power. The seductive and oppressive influence of this spirit often usurps, and may inhibit that nobler, more enduring, and beneficent one, characteristic of common manhood and of professional brotherhood. In this relation it

should not be forgotten that the greater and more extended is the membership of a fraternal body, the greater and more extended its constituent paternal desires are apt to be."

New York Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital, Second avenue, corner Nineteenth street, announce that Dr. L. Duncan Bulkley will close his clinical course with four special lectures as follows: March 27, "Practical Points in the Diagnosis and Treatment of Diseases of the Skin;" April 3, "Errors in Diagnosis and Treatment: Donts in Dermatology;" April 10, "Danger Signals from the Skin;" April 17, "The Significance and Treatment of Itching." They also announce a lecture by Dr. William Seaman Bainbridge on April 24 on "Some Phases of the Cancer Problem." The lectures, which are free to the medical profession, will be held in the Out-Patient Hall of the hospital at 4:15 o'clock.

Magazine for the Blind.—The first number of the *Matilda Ziegler Magazine for the Blind*, which has been established by Mrs. Matilda Ziegler, appeared last week. The magazine contains 96 pages and measures 14x12x2 inches. An edition of 7,000 was prepared, and nearly all the numbers have been sent out free, though the nominal price of the magazine is ten cents a copy. The number is made up of articles on a wide range of subjects, and a map of the West Indies and Central America, showing the situation of Kingston and of the Panama Canal, is included. The magazine is printed partly in New York point and partly in Braille point. The secretary of the New York Association for the Blind, Miss Winifred Holt, has announced that the association is in need of funds for running expenses, and that it is impossible on this account to give assistance to the large numbers of blind persons who are anxious to learn of some way of supporting themselves. The treasurer of the organization is Mr. Herbert S. Barnes, of 35 Wall street.

Hudson River Ice.—The report of the chemist employed by the Merchants' Association of this city to examine the quality of the ice being harvested from the Hudson shows that there was considerable evidence of sewage pollution in the samples analyzed. Of twenty-five specimens examined eleven are reported as "good," ten as "contaminated," and four as "bad." It must be remembered, however, that while it is undoubtedly highly undesirable that ice intended for domestic uses should be taken from sources open to suspicion or worse, if these analyses had been made in samples taken from ice that had been in storage for some months, as far as the bacteria are concerned, the results would probably have been much less unfavorable.

Compulsory Vaccination.—A bill has been introduced into the Pennsylvania Legislature requiring all children to be vaccinated before they are two years old, and also providing that persons taking up their residence in the State shall be vaccinated within one month or produce a physician's certificate that they have been vaccinated or have already had smallpox. It is further provided that any child or person required to be vaccinated under the provisions of this act, but suffering from any affection or condition that would as a result of vaccination become dangerous to life or health, may be excused from the enforcement of the law for a period of one year on presentation of a written certificate to this effect signed by a regularly licensed physician and indorsed by a physician appointed by the Department of Public Health or by any local Board of Health of the Commonwealth.

Illinois State University Medical School.—In 1897 the State University of Illinois organized a medical school as one of its departments. Not owning suitable buildings, it rented the premises of the College of Physicians and Surgeons, making an agreement with the college that the expenses of the new department, including rent, were not to exceed the fees received from the students. This agreement has been kept until the present, and the State has not contributed a dollar to the school, which has been supported by fees from its students. The development of the University has reached the stage where the ownership of its medical department buildings is necessary. The bill now before the legislature, while asking for an appropriation of $386,000, states that it is for the purpose of acquiring suitable buildings and equipment for the conduct of the medical department, and that in case the trustees should see fit to purchase the property of the College of Physicians and Surgeons, they shall not pay a sum to exceed the actual value of the tangible property.

Health Matters in Chicago.—Up to the close of February a total of 48,155 children in attendance on the public schools had been examined. Of these, 7,205, or nearly 15 in every 100, were either suffering, or convalescent, from a contagious disease, and capable of spreading contagion among other scholars. There were found 2,049 cases of diphtheria and tonsillitis, 695 cases of mumps, 686 of scarlet fever, 537 of measles, 228 of whooping-cough, 198 of chickenpox, and 2,812 cases of purulent ophthalmia, impetigo contagiosa, scabies, pediculosis, etc. Nearly one-third of the total exclusions were on account of diphtheria and tonsillitis, and nearly one-tenth were on account of scarlet fever. The Health Department asks, Is it any wonder that these diseases have been epidemic? Had medical school inspection been established and continued, as repeatedly prayed for by the Department, it might not have wholly prevented the scarlet fever epidemic, since the growing infrequency of this disease since 1902 had resulted in the accumulation of an enormous crop of children susceptible to its infection. An epidemic among these was inevitable whenever the specific contagion, whatever it may be, should be introduced. But there is no question among sanitarians and students of preventive medicine that its ravages could have been greatly reduced and its spread effectually checked had the early cases been promptly recognized and measures of restriction duly enforced.

The Inspection of School Children.—The Committee on Public Health and Legislation of the St. Louis Medical Society appeared before the Sanitary Committee of the City Council on February 26, together with representatives of other organized medical bodies, and argued in favor of the passage of a bill for the medical inspection of public school children. They report that the passage of the bill is practically assured.

Spectacles for School Children.—The managers of the New York Throat, Nose, and Lung Hospital have issued a circular addressed to school principals in Manhattan and the Bronx announcing that the hospital will hereafter supply spectacles free to school children whose parents are too poor to buy them, and also calling attention to the dental clinic of the hospital, where the teeth of school children will be treated free of charge. The dental clinic was established in October, 1905.

Throat Affections in School Children.—The school physicians of South Manchester, Conn., re-

cently found that 200 out of 1,000 public school children in that city were suffering from enlarged tonsils or adenoids to a degree that made operation advisable.

The St. Louis Medical Society has built a new auditorium and created fresh enthusiasm in its members. Many new members are being elected at each meeting, and the average attendance at the weekly meetings for the first two months of the year has been 129.

The Cincinnati Academy of Medicine celebrated its semicentennial at the Hotel Sinton on March 5 with a banquet, at which 350 medical men sat down. Dr. J. E. Greiwe, the retiring president, was toastmaster, and speeches were made by Drs. Byron Stanton, the only charter member present; Dr. A. G. Drury, Dr. N. P. Dandridge, Dr. P. S. Connor, Dr. B. P. Good, Dr. S. Nickles, Dr. C. D. Palmer, and Governor Bradley of Kentucky. The election of officers for the following year resulted as follows: *President*, Dr. F. W. Langdon; *First Vice-President*, Dr. Wm. Gillespie; *Second Vice-President*, Dr. John Oliver; *Secretary*, Dr. Mary K. Isham; *Treasurer*, Dr. A. G. Drury.

Berlin's Municipal Physicians.—The assistant physicians in the various municipal hospitals of Berlin have agreed to hand in their resignations on April 1. This is in order to express their dissatisfaction at the reply to a petition handed to the authorities over eight months ago. The petitioners asked that the salary of the official assistant hospital physicians be raised from 100 to 120 marks a month, that a yearly vacation of four weeks be granted, and that they be received into the Government accident insurance system. After eight months of delay a negative decision was rendered. Each assistant physician has seventy or more patients under his care and is on duty from 9 A.M. to 7 P.M. In the evening he has to write up the case histories. It is expected that the contemplated move of the physicians will cause the authorities to reconsider their decision.

Information Bureau in Berlin.—In the Kaiserin Friedrich-Haus an information bureau has been opened for the benefit of foreign medical students and physicians. It is the object of the bureau to supply free of charge information in regard to courses, hospitals, collections, and other matters of interest to visiting medical men.

Plague in Russia.—Dr. Schreiber, the worker in the Alexander Laboratory in Kronstadt, who contracted plague from cultures with which he was experimenting, has died, and one of his colleagues is reported to be suffering from a suspicious infection.

Smallpox is reported to be epidemic at Dunkirk, France, and also in Lille.

The Fourteenth International Congress for Hygiene and Demography will be held in Berlin, Germany, September 23 to 29 of the current year. The secretary-general of the congress is Dr. Nietner, Eichhornstrasse 9, Berlin W., to whom all communications with reference to the congress should be addressed.

Congress of the German Urological Society.—The first congress of this organization is to be held in Vienna, October 2 to 5, 1907. The principal theories for discussion will be the diagnosis and treatment of renal tumors, the diagnosis and treatment of nephrolithiasis and albuminuria. One of the features of the congress will be an exhibition of specimens and instruments pertaining to genitourinary surgery. Non-members of the society who wish to take part in the proceedings are requested to communicate with Dr. Kapsammer, IX. Maria Theresienstrasse 3, Vienna.

International Congress of Psychiatry, Neurology, and the Care of the Insane.—A congress for those interested in these matters is being organized under the auspices of the Dutch Society of Psychiatry and Neurology, to be held at Amsterdam from September 2 to 9, 1907. Those who have been invited to be American members of the committee of arrangements are: Dr. G. Alden Blumer of Providence; Drs. Charles K. Mills, John K. Mitchell and S. Weir Mitchell, of Philadelphia, and Dr. R. G. Rabinovitch, of New York City.

Seventh International Congress of Physiology.—This will be held this year at Heidelberg from August 13 to 16, under the presidency of Professor August Kossel. In connection with the congress there will be an exhibition of scientific apparatus. Announcements of communications should be sent to the Physiological Institute, Heidelberg, before June 15.

State Medical College for Oklahoma City.—A charter has been granted to a new regular medical college in Oklahoma City with the title of the Oklahoma State Medical College. The incorporators include Dr. W. J. Darnell of Mountain View, Okla., who has been made President of the school; Dr. West Moreland, Atlanta, Ga.; Dr. H. H. Baty of Rome, Ga.; Dr. J. R. Phelan of Oklahoma City, Secretary of the corporation, and J. P. Eckers of Oklahoma City.

City Hospital Buildings.—Plans have been filed for a group of new administration buildings to be erected on Blackwell's Island as annexes to the present City Hospital. The group includes two one-story reception houses for patients to cost $25,000 each, an operating pavilion to cost $25,000, a three-story kitchen and service building to cost $12,000, a three-story and attic residence for the medical staff to cost $54,000 and to be called Janeway Hall, and a two-story and attic residence for the hospital superintendent to cost $20,000. Plans have also been filed for two new recreation pavilions to be built on the island for the inmates of the City Home for the Aged and Infirm.

For Poor Tuberculous Patients.—A bill has been introduced into the Pennsylvania Legislature appropriating the sum of $600,000 for two years, and providing for the establishment and maintenance under the charge of the State Department of Public Health of one or more sanatoria for the free care of indigent persons suffering from tuberculosis.

Stony Wold Sanatorium.—The managers of this organization, which was incorporated for the purpose of taking care of consumptive working-women and children, succeeded in raising before March 1 the sum of $75,000 necessary to obtain a large donation made contingent in this stipulation, and the sanatorium is now entirely free from debt.

Contagious Diseases Hospital for Brooklyn.—By a decision of the Court of Appeals, rendered last week, New York City may proceed with the erection of a contagious diseases hospital in Hawthorne street, between Kingston and Albany avenues, Brooklyn. A person who objected to the plan to place such a hospital in this situation obtained a judgment at Special Term enjoining the city from the erection of the hospital. The Appellate Division reversed the judgment, and now the Court of Appeals upholds that decision.

St. John's Guild.—The fortieth annual report of this organization shows that the total number of children and mothers who last summer received the benefits of the Guild's floating hospital was 40,983.

Dr. J. R. Whiting has resigned as chief of the genitourinary clinic of Columbia University and as assistant attending genitourinary surgeon to the first surgical division of Bellevue Hospital. Dr. W. S. Reynolds succeeds him at the College of Physicians and Surgeons, and Dr. T. F. McCarthy at Bellevue.

Dr. C. G. Bandler has been promoted to the position of adjunct assistant attending genitourinary surgeon to the first surgical division of Bellevue Hospital and chief of the genitourinary clinic of the Out-Patient Department of Bellevue Hospital.

Dr. H. M. Archer of this city has been appointed honorary medical officer of city fire department, with the rank of chief of battalion.

The Pasteurization Bill at Albany.—The Reece pasteurization bill had a hearing before the Cities Committee in the Assembly of the New York Legislature on Tuesday of this week. Assemblyman Reece, speaking for his bill, said that infant mortality on Randall's Island dropped from 42 per cent. to 16 per cent. in a few years, following the introduction of pasteurization there. Health Commissioner Darlington opposed the bill because it involved mandatory legislation. He admitted that pasteurization was desirable under certain conditions.

Women Physicians in Europe.—Hungary is said to have only twenty-seven women physicians. The figures of the French Bureau of Education show that in 1906 there were 2,264 female students in the French universities, of which number 454 were studying medicine.

Postage Stamps costing 50 per cent. more than the regular issues are now on sale in Holland. The additional amount received is to be used by the government in the combat against tuberculosis.

The Jewish Maternity Hospital has opened its out-door department at 270 East Broadway, and applicants are received daily, except Sundays, between three and five P.M.

Obituary Notes.—Dr. Charles Reed of Brooklyn died on March 5. He was born in Ossining, N. Y., in 1856, and was graduated from the College of Physicians and Surgeons in 1879.

Dr. Thomas A. Skillman of New Brunswick, N. J., died on March 6 at the home of his daughter, Mrs. Ellis Warren, in Princeton, where he had gone to recuperate. He was injured in a trolley accident some time ago, which compelled him to give up active practice. He was graduated from the New York University Medical School with the class of 1878.

Dr. Clifton Scott of Des Moines, Ia., died on February 27, at the age of fifty-four years. He was born in Como, Ill., and in 1883 was graduated from the Louisville College of Physicians and Surgeons. After post-graduate work in Rush Medical College he began practice in Dickson, Ill., but has been a resident of Des Moines for the past seventeen years.

Dr. Alexander MacIntosh of Halifax, N. S., died on February 28, in his seventy-sixth year, after an illness of several weeks. He was born in South River, Antigonish County, and received his medical education from the University of Pennsylvania Medical College, from which he was graduated in 1858. He had practised in Antigonish for over thirty years although for the last fifteen years he had retired from active work.

Dr. J. M. Willis of Temple, Tex., died on February 24, at the age of eighty-five years. He was a native of Barnesville, Ga., and had practised in Waco since 1865. He retired from practice some years ago.

Dr. Lyman W. Bliss of Saginaw, Mich., died in San Antonio, Tex., on February 20, at the age of seventy-one years. He was born in Smithfield, N. Y., and served in the Civil War as surgeon of the Tenth New York Cavalry. He had practised in Saginaw since 1866, and in 1891 was elected president of the State Medical Society.

Dr. Robert Provan of South Brookline, Mass., died on February 24. He was born in New Brunswick, and received his medical degree from Harvard College in 1860. He had practised for many years in South Boston.

Dr. John Barker of Woodbridge, Conn., died on February 16, at the age of seventy-two years. He was graduated from the Yale Medical School in 1860, and, after practising for a time in New Haven, removed to Westville about twenty-five years ago. Five or six years ago he retired from active practice, although he continued to act as medical examiner in Woodbridge.

Dr. J. W. Parker of Kansas City, Mo., died on March 2, at the age of eighty-five years. He was born in Lexington, Ky., and, after receiving his medical education in that city, in 1853 began practice in Kansas City, at that time a village of 3,000 people. He continued in active practice until six years ago, when compelled to retire on account of failing eyesight.

Dr. George T. Church of Brooklyn died suddenly of heart disease on March 10, at the age of forty-nine years. He was a native of Waterville, N. Y., his father being the well-known Justice Charles Church. He was graduated from Hamilton College in the class of 1880, and, after some years spent in various teaching positions, studied medicine at the Albany Medical College and at Dartmouth. He practised for a time in Saratoga Springs, but some years ago removed to Brooklyn. He was one of the examiners of the Civil Service Board.

Dr. William B. Crain of Richfield Springs, N. Y., died of heart disease on March 9, at the age of seventy years. He was graduated from the University of Pennsylvania at the beginning of the Civil War and was assigned to take charge of the United States Military Hospital at Washington, D. C. Later he was assigned to the United States Hospital at New Creek, Va. He served with the rank of Major in the Maryland cavalry until the close of the war, and was at Antietam and other battles. From 1866 until his death he was a successful practitioner at Richfield Springs.

Dr. J. K. Cassel died at Philadelphia on March 2 at the age of seventy-two years. He was graduated from Pennsylvania Medical College in the class of 1861, and he served during the Civil War with the Fifty-seventh Regiment, Pennsylvania Volunteers.

Dr. Fred Suesserott died at Chambersburg, Pa., on March 2, at the age of fifty years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1871.

Dr. Wm. J. Butler died at Wilkesbarre, Pa., on March 4 as the result of injuries received in a railway accident. He was graduated from the Pennsylvania Medical College in the class of 1885.

Dr. J. Ward Steele died at Dover, Del., on March 4, at the age of thirty-three years.

RULE AS TO NEGLIGENCE IN *X*-RAY TREATMENT.

In February of this year a case was brought to trial before Judge Brady and a jury in the Supreme Court in this city, in which a well-known physician was charged with negligence, in that he "unskillfully, carelessly, and negligently administered to the plaintiff what is commonly called or known as *x*-ray treatment, whereby the hair on the left side of plaintiff's head was burned off, and her face and neck on the same side were greatly burned, hurt, and injured." The plaintiff, a waitress, alleged special damage in loss of wages and demanded judgment for $10,000. The case was left to the jury, who found a verdict for the defendant. In the absence of any reported case on this subject in any court in this State, the rules of law stated in the Judge's charge to the jury are of interest. Before considering them, however, the facts as they appeared in evidence should be considered.

The Facts.—The plaintiff, about thirty-five years of age, had had an operation for tuberculous glands on the right side of her neck. A large scar, with considerable loss of tissue, marked this operation. Subsequently, the glands on the left side of her neck were similarly affected, and she applied at a hospital for treatment, but refused an operation. She was then advised that *x*-ray treatment for this malady was often successful, and in the spring of 1903 she applied to a physician for that treatment. After several applications, he noticed on one occasion when she visited his office that she had developed a slight dermatitis. He then suspended treatment for about two weeks. Shortly after, and while still under treatment by this physician, she applied to the defendant for *x*-ray treatment, and during May, 1903, the two physicians treated her contemporaneously, each remaining in ignorance of the other's treatment.

In the fall of 1903 she had three treatments from the defendant at intervals of about ten days. A 16-plate Waite & Bartlett machine was used with a 5-inch General Electric tube. The surface of the tube was not less than 8 inches from the plaintiff's neck, and the exposure on each occasion lasted 8 minutes. Her head and shoulder were protected by sheets of lead foil, with an aggregate thickness of about 1/12-inch. Four or five days after the third treatment a dermatitis of the second degree began to develop, extending from the bottom of the neck to above the ear, and embracing the whole left cheek. She called on the defendant, who prescribed an antiseptic dressing and urged her to call again in a day or two. He saw her only once more, about ten days later, when the wound was purulent and dirty, and the hair about the ear had fallen.

At the time of the trial she had a network of telangiectases over the glands in her neck and extending into her cheek, and a slight sclerosis behind the ear. Her hair had grown again. The glands were still slightly enlarged on both sides of the neck. She had been examined in October, 1904, after suit began, and it appeared that the telangiectases had increased considerably since that time. She had had further *x*-ray treatment from a third physician in the interval.

The Expert Evidence.—The evidence of experts on both sides was that the duration of the treatment and the distance of the tube from the neck were regarded as safe, that the static machine was deemed safer than a coil, that the quantity and quality of the *x*-ray continually varied, not merely from day to day but in the course of a single application, that the protection by a lead sheath was the best known to science, and that no means was known to science of accurately measuring either the quantity or quality of the *x*-ray.

The Law.—On this state of facts, the Judge charged the jury upon the question of the physician's duty according to the familiar rule. (*Pike v. Honsinger,* 155 N. Y. 201). First, he must possess "only that reasonable degree of learning and skill relating to *x*-ray treatment commonly belonging to a physician and surgeon using that treatment in the city of New York in November, 1903." Second, he must use "only reasonable care and diligence in the exercise of his skill and the application of his learning in the treatment by *x*-ray." Third, he was bound to treat the plaintiff "according to his best judgment." The Judge pointed out that the defendant was here charged with negligence or breach of duty only in the actual treatment, the second branch of the duty imposed on him by law, as above defined. The possession of adequate skill and learning, and the exercise of best judgment were thus not in the case. Reasonable care and diligence in the treatment meant "such ordinary care and diligence as is usually given by a physician in good standing. It does not mean the highest possible care and diligence, or such care and diligence as might have been used by some other physician, or even by the defendant himself." The physician is not an insurer or guarantor, and "in *x*-ray he does not insure the patient against a burn."

The part of the charge of chief significance, however, was that in which the Judge dealt with the doctrine known as *res ipsa loquitur.* Briefly stated, that doctrine means that the accident and the surrounding circumstances speak for themselves, and afford *prima facie* proof of negligence. A common instance of the application of the doctrine is found in a railroad collision between two trains. The Court knows, and everybody knows, that when trains are operated with ordinary and reasonable care they do not collide, and the mere fact of a collision, therefore, affords evidence of negligence; the accident speaks for itself. But the Court here holds that the mere happening of an *x*-ray burn is not evidence of negligence, and it reached that conclusion doubtless in view of the evidence of the uncertain state of *x*-ray science and by analogy to cases of bursting flywheel of an electric machine, bursting oil tank, etc. (*Pichl v. Albany R. R.,* 30 App. Div. 166, affirmed 162 N. Y. 617; *Losee v. Buchanan,* 51 N. Y. 76; *Cosulich v. Standard Oil Co.,* 122 N. Y. 118; *Reiss v. N. Y. Steam Co.,* 128 N. Y. 103). In cases of this kind the accident does not speak for itself, because it may happen notwithstanding the use of reasonable and ordinary care. In the case of the bursting flywheel, Judge Landon, afterwards of the Court of Appeals, said that the doctrine *res ipsa loquitur* did not apply: "Because such are the limitations upon human foresight that every reasonable care does not always prevent accidents, and that such is the nature of steam and electricity, and the engines by or upon which they operate, that when such an explosion as this occurs our experience, or even expert experience, is not sufficiently uniform to justify us in presuming that negligence is the cause. The explosion does not in fact speak for itself and tell us its cause."

If this is true of steam and electricity *a fortiori* it is true of the much more uncertain science of *x*-ray. Upon this subject the Judge charged as follows: "If the jury find that the plaintiff received the burn of which she complains in consequence of the treat-

ment by the defendant, they cannot infer that the defendant was negligent merely because the plaintiff afterwards suffered from *x*-ray burn, for the cause of the burn may be beyond human knowledge, and even expert experience may not be sufficiently uniform to indicate a sure means of preventing it. Owing to the limitations of human knowledge, the exercise of every reasonable care does not always prevent accidents, and this is especially true in dealing with such comparatively little known forces as electricity and *x*-rays. The jury cannot find the defendant guilty of the negligence alleged in the complaint unless it can find in the proofs some particular act of negligence which caused the burn. To punish the defendant because he cannot explain the cause of the burn is not necessarily to punish him because he has done wrong, but may be to punish him because he does not know something which science cannot find out, or has thus far been unable to find out. That would be manifestly unfair, and the law will not do it."

This charge is the only judicial expression of the law of this State upon this subject so far as the reports show. It appears to be logically deduced from the analogies above referred to.

The attorneys were Black, Olcott, Gruber, and Bonynge for the plaintiff, and Charles Stewart Davison for the defendant. The counsel who tried the case were Irving L. Ernst, for the plaintiff, and Henry Winthrop Hardon, for the defendant.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

ERASMUS WILSON LECTURE—LEUCODERMA—CONDITION OF BLOOD-VESSELS IN SHOCK—SEQUEL TO ABDOMINAL SECTION FOR DILATED BOWEL—PERICARDITIS AND PLEURISY IN TYPHOID—AMALGAMATION OF SOCIETIES—THE EPIDEMIC—OBITUARY.

LONDON, February 22, 1907.

AN Erasmus Wilson lecture at the Royal College of Surgeons has at last been delivered on a dermatological subject. When the lectureship was founded by Sir E. Wilson it was intended that this should always be the case, though later Sir Erasmus yielded to the wish of the College Council to extend the scope of the foundation. Since then nearly thirty years have elapsed since a dermatological subject has been taken up by the Erasmus Wilson lecturer of the year. At length, however, dermatology has come to its own, and Dr. Willmott H. Evans on the 4th inst. took for his subject Leucoderma. In dealing with it and analogous changes in the pigmentation of the skin he took up a position in direct opposition to the leading authorities and textbooks. He maintains with confidence from very careful examination of the facts that in no way does the nervous system have any part in the production or localization of the patches of leucoderma. He thinks the action of some toxin derived from the alimentary canal may probably be the cause, this being aided by the action of light and sometimes by local injury. The mechanism by which the effect is produced he attributes to the vital action of peripatetic cells. That the familiar facts lend themselves to the first conclusion is obvious. The "tanning" which we see in summer and which so soon fades suggests that differences in color are physiological, and the same may be said as to the color of the different races of men. The tint of the skin in the white races is mainly due to the color of the superficial fat and blood-vessels, modified somewhat by the epidermal pigment which in darker races obscures the other factors. With regard to the common opinion as to a nervous origin it has been said that symmetry indicates this, but Dr. Evans maintains that symmetrical distribution is no sign whatever of connection with the nervous system, and, moreover, leucoderma is rarely symmetrical. He appealed to herpes roster as to which there is no disputing the nervous origin and that it affects only one side. He showed views of nerve areas, root and peripheral, and by means of numerous lantern slides proved that leucodermic patches do not occupy nerve areas. The association of leucoderma with some cases of nervous diseases sometimes spoken of he found so rare as to be mere coincidences. In drug pigmentation Dr. Evans ranged himself with those who consider it the effect of local action, the drug being found where the eruption exists—from which it also appeared that a poison circulating in the blood may be deposited in certain places and not generally. As stated, Dr. Evans considers a toxin from the alimentary canal the cause of leucoderma, as he does also of some analogous diseases. A morbid intestinal condition he found often preceded. The localizing factors he held were mechanical or chemical—trauma and light. The actual mechanism of depigmentation he compared with that of bleaching of the hair in old age which Metchnikoff showed was due to the action of macrophages which swallow the pigment and carry it away. He considered the superactivity of these macrophages was caused by the toxin—their activity waxing and waning according to the varying amount of toxin or of the local adjuvants. It was seldom that these peccant macrophages can be induced to retrace their steps and redeposit the pigment. Should they do so the whitened patches would resume their natural color, but the area affected usually remained free from pigment to the end of life.

The condition of the blood-vessels during shock was the subject of a paper by Mr. J. D. Malcolm at the last meeting of the Medico-Chi. He holds a view opposed to that of Dr. G. W. Crile which was founded on experiment and has been widely accepted, and which attributes shock to a paralysis of the vasomotor center and the consequent relaxation of the vessels throughout the body. Mr. Malcolm repeated the view he has previously proposed, that shock is due to a paralysis of the vessels in the splanchnic area. He said Dr. Crile's theory fails to account for the pallor and other facts, *e.g.* that the first effect of vasodilatation is to increase the volume of blood in the arteries; that fluids cannot enter the veins during extreme shock, or, if they did, would pass into the tissues; that the blood-pressure in the portal vein was raised; that the specific gravity of the blood of animals during shock was raised as shown by Corbett and Roy. These difficulties disappear if we accept Mr. Malcolm's contention that the arteries are contracted. He added that the most successful treatment is in harmony with his views. Stimulating vasodilatation and the application of warmth were the important indications.

Dr. Lockhart Mummery took up the cudgels on behalf of Dr. Crile's theory and asserted from his own experience that the arteries were not contracted, but were relaxed during shock. The capillaries, he said, were empty, but that was because the arterial pressure did not suffice to fill them and the pallor depended on this fact. Fluids entered the circulation easily enough in shock. The blood-pressure in the portal vein rose a little, but never higher than that of the arteries. Loss of heat beyond that caused by diminished metabolism was a doubtful matter.

Dr. Leonard Williams followed on the same side but said exhaustion of the medulla was only partial, so that relaxation was not complete during life.

Dr. A. Morison said the main thing in shock was cardiovascular paralysis, which occurred in different degrees. In the absence of pressure the elasticity of the arteries naturally diminished their caliber. Heat stimulated through the central nervous system.

Dr. Sheen concluded from his personal observation that the arteries were neither contracted nor dilated. In severe injuries the patient at first seemed to have little the matter which could be ascribed to rising pressure. Accumulation of blood in the abdominal veins soon followed.

Dr. Beddard said the first thing to explain was the fall in the general blood-pressure. The main factor was peripheral resistance and this depended on the condition of the microscopic arterioles. Pallor was due to accumulation of blood in the abdominal veins. Even the volume of a limb might be diminished in shock, but the chief point was diminution of resistance in the splanchnic area. The muscular tone was reduced and so the chief source of heat was lost. Hence the application of heat was of the highest importance, for the patient had become, so to say, a cold-blooded animal for the time. Nevertheless shock was not to be considered solely a vascular phenomenon.

The sequel to a case of extreme "dilatation of the rectum and colon as far as the hepatic flexure," for which abdominal section was performed in November, 1904, was related by Drs. Morley Fletcher and Betham Robinson at the last meeting of the Clinical Society. The dilated bowel contained many pounds of dark feces. This matter was squeezed out of the anus by pressure above. There was great hypertrophy of the bowel wall but no sign of peritonitis, no large glands, no abdominal band. The patient, a boy of twelve, did well and was exhibited at the

Society in April, 1905. The boy remained in good health until July when he was seized with abdominal pain and diarrhea and readmitted to the hospital in a comatose state and died next day. The post mortem showed that the dilatation had greatly lessened, the mucous membrane was healthy and no cause for the dilatation could be found. The points chiefly submitted by the authors were (1) absence of symptoms in early life; (2) suddenness of onset; great improvement after completely emptying the gut, followed by careful dieting, etc.; (4) duration of the improvement, and (5) the sudden termination with coma—possibly due to ingestion of some toxic substance or to some infection. In the absence of any condition that could cause obstruction the case might be called by the unsatisfactory term congenital or idiopathic. Some discussion followed as to the origin of such cases. The treatment was approved. It was remarked that the sphincter muscle sometimes showed changes, especially fibrosis, but Dr. Fletcher was able to say that in this case it was quite normal. He added that the circumference of the gut diminished by as much as five inches from the time of operation to that of the autopsy.

A somewhat obscure case was related by Dr. Hawkins of Reading, who had diagnosed it as typhoid fever with the very rare complications of pericarditis and hemorrhagic pleurisy. The patient was a girl of twenty and her first complaint was of sore throat and stiffness of her legs. Five days later she had a rigor followed by diarrhea. No spots appeared but during her illness the abdomen was distended and the bowels moved from twice to seven times a day. Widal's reaction was tested once with positive result. Early in the third week there was a systolic murmur at the apex and blood-stained expectoration which two days later was typically rusty, the physical signs indicating consolidation of left base. In the fifth week the condition seemed critical, respirations 42, pulse 128. Paracentesis was done and 142 ounces of hemorrhagic fluid withdrawn. Improvement followed, but temperature did not become normal until the seventh week. In the discussion doubts as to the case were expressed. One suggestion was that pneumococcal infection would account for the course of the disease and the temperature chart shown was not like typhoid. Another was rheumatic infection, as to which Dr. Hawkins said salicylates had been given for two days with a fall of temperature which rose again. The chief treatment had been hydrochloric acid which he thought the best antiseptic as a routine measure in typhoid.

Another step has been taken this week towards the amalgamation of our medical societies. At a meeting at the College of Physicians on Tuesday those interested in the scheme agreed upon the name of the united body, which is to be the Royal Society of Medicine.

Four fresh cases of cerebrospinal fever were admitted in Belfast yesterday and there were three deaths there, making a total for the week of 103 cases with fifty-seven deaths. The Health Committee decided to close the school which four children who had contracted the disease attended. A case in Hull admitted on Wednesday has proved fatal. Some other cases, sporadic they are assumed to be, have occurred in other districts. Eight cases were notified last week in Edinburgh, of which six died, but it was shown that two were not cerebrospinal fever. At Paisley the totals are eleven cases and six deaths. More cases have been reported in Dublin and other towns. The Irish Local Board has recommended local authorities to adopt notification. The M. O. H. of Cork says in that city this has remained in force ever since the outbreak of 1900.

Surgeon-General Sir John M. Donnelly, K.C.B., died on Monday at the age of seventy-six. He joined the Madras Army in 1856 and served in Burma from 1859 to 1874, filling various offices. In 1885 he became Deputy Surgeon-General and was in medical charge of the Burmese Expedition and for his service made C.B. He remained P.M.O. in Burma until 1890, when he was in the Chin Lushai Expedition, promoted to Surgeon-General and then retired. Last June he was advanced to K.C.B. He graduated M.D., R.U.I., 1855.

Deputy Inspector General Wm. Campbell Seaman, M.D., died last Friday at the ripe age of eighty-nine. The deceased officer, after distinguished service, had retired from the army many years and enjoyed a healthy old age. He was walking out last summer, but the severe winter proved fatal to him. He graduated M.D.Edin., in 1839, and the next year took the L.R.C.S. Ed.

The Abortion of Specific Diseases. In a well-reasoned article in the *Boston Medical and Surgical Journal* of January 31, 1907, Dr. J. M. French protests against the pessimism which denies the possibility of aborting a specific disease. If diphtheria can be aborted, he says, why not other infectious diseases, if the proper remedy be found?

OUR PARIS LETTER.

(From Our Special Correspondent.)

MORTALITY IN PARIS—THE TREATMENT OF PHARYNGEAL CANCER—IMPALEMENT THROUGH THE RECTUM—SUTURE OF THE HEART—THE COUNTRY PRACTITIONER—ELECTRIC MEDICATION—NECROLOGY.

PARIS, January, 30, 1907.

An interesting study on the mortality in Paris during the nineteenth century was presented before the Académie de Médecine by Bertillon. The speaker pointed out the considerable reduction in the death rate in Paris that had taken place during the past hundred years, for, whereas at the beginning of the past century the figure was thirty-two to thirty-three per thousand inhabitants, at present it was only nineteen per thousand. This remarkable improvement was due especially to the reduction in infantile mortality. The causes of death that have contributed the most to the low death rate of to-day were the infectious fevers, principally typhoid fever and diphtheria. In addition to many diseases, the mortality of which had remained stationary, it was necessary to mention two which were more frequently fatal—cancer and nephritis.

In the Société de Chirurgie, Faure read a noteworthy paper on the treatment of malignant disease of the pharynx. He had found that the inverted position was useful in operating in these cases, and he did not resort to preliminary tracheotomy, as he considered that this increased the gravity of the prognosis. He had also given up preliminary intubation. The speaker then outlined the different surgical routes through which the disease might be attacked, which were, of course, different according to the situation of the new growth. For tumors limited to the tonsils he had found that a transverse incision below the angle of the jaw, with or without additional lateral branches, was the most useful. Through this incision it was easy to dissect the entire region, and, after excision of the ascending ramus of the jaw, to remove all the diseased portions of the pharynx, the tonsil, the base of the tongue, and the soft palate. However, the temporary or permanent resection of the ramus of the jaw was a serious mutilation that should not be resorted to when it could possibly be avoided. Operations of this sort, although admirable from the technical standpoint, were unfortunately very severe, and had a mortality of from 30 to 50 per cent. The results obtained also were only mediocre, and Faure had not been able to obtain a single permanent cure among his patients. In most instances the recurrence had taken place promptly, and only in one case did an interval as long as three years elapse. In summing up, he said that malignant disease of the pharynx was undoubtedly the most serious of the cancers amenable to operation. The surgical procedure was always a very severe one, but if carried out in time, while the lesion was still localized, it was possible to obtain, if not absolute cure, at least encouraging results, and under these conditions surgical measures in spite of their gravity should always be resorted to.

Baudet reported an interesting case of impalement of the rectum and perineum. The patient was a child of ten years, who, in climbing over a fence constructed of iron pickets with sharp points, lost his balance and was impaled on one of the spikes. The iron penetrated directly into the anus and emerged through the perineum a little behind the scrotum. In addition to a profuse hemorrhage, the little patient presented disquieting symptoms that suggested the possibility of a peritoneal injury. The peritoneum and the abdominal wall as high as the umbilicus were the seat of an enormous ecchymosis, and a small amount of blood escaped from the anus. Nevertheless, the urinary system was intact, for clear urine was withdrawn by catheter. Baudet, in order to avoid any risk of causing a possible peritoneal infection, did not make a digital examination of the rectum, but examined it by means of a bivalve speculum. In this way he discovered a longitudinal wound on the anterior wall of the rectum, beginning several centimeters above the anus and 5 or 6 cm. in length, but not reaching up to the peritoneal cul-de-sac. Baudet sutured this wound, as well as that of the perineum, and an uncomplicated recovery resulted in the course of a month. Baudet also reported another equally interesting case. This was a wound of the heart caused by a thrust with a foil, and successfully treated by suture. The patient was a man twenty-three years old, who, while fencing, received a thrust in the fifth left intercostal space and became unconscious shortly after the accident. The pulse was hardly perceptible, and an hour later Baudet reached the patient and exposed the pericardium by making a large, hinged flap. He then discovered the pericardial wound, from which a little blood was oozing. At this time the heart was almost motionless, and the wound, which involved the heart muscle itself, was easily sutured. By direct mas-

sage the heart was induced to beat again, and it was found that the hemorrhage was controlled by the sutures. The thoracic flap was replaced and sutured without drainage of the pleural cavity. The patient left the hospital at the end of twelve days, and when seen two months later was free from all symptoms.

The differences in the careers of country and city physicians were discussed by Reymond before the Société de l'Internat de Paris. He stated that the country physician usually had a most difficult and most important rôle to play, and ordinarily he exemplified the highest moral qualities, while his life was rendered arduous through the inadequacy of the remuneration he could receive from the peasants living in villages or on detached farms. The country physician theoretically should be a universal specialist, for he had only his own resources to count on, and frequently was unable to summon any colleagues to his aid. It was to be desired that in the interest of his patients the country physician should have had some experience in surgery and a grounding in several specialties, but unfortunately this was not always the case, and, for example, strangulated hernia, which ordinarily did not have a severe prognosis was frequently neglected until operation had been too long deferred because the practitioner did not have the skill to carry out the procedure necessary to relieve his patient. For this reason Reymond was interested in the question of establishing district hospitals, which would be useful not only from the standpoint of the patient, but which would also provide practitioners with a valuable source of instruction.

The action of electricity in causing remedial agents to penetrate the skin was discussed before the Société de Biologie by Tuffier and Mauté. They had experimented with trypan red, silver, and salicylic acid, and had found that these substances, by means of the continuous current, could be made to pass through the healthy skin. When brought into the tissues in this way they seemed to form different combinations with the cellular protoplasm than was the case when they were introduced by subcutaneous injection. The penetration of the substances used was always very superficial, however.

In the death of Prof. Pierre Budin, French obstetric art has lost one of its chief ornaments. His scientific labors were very diversified, and his busy life was devoted to two main ends. As a philanthropist, he had been struck by the ravages that ignorance of the laws of hygiene among the poor caused among their infants. He therefore started a crusade against this evil and founded the League for the Prevention of Infantile Mortality, which has for its object the education of mothers. As a teacher, Budin was able to systematize in admirable fashion clinical instruction in obstetrics, and it is largely through his offices that the students at present are enabled to receive the practical instruction they do in the maternity hospitals. He died, so to speak, on the field of battle, in the course of a journey through France, undertaken for the purpose of disseminating throughout the country an understanding of the importance of the combat against infantile mortality.

Emile Javal, one of the most illustrious French ophthalmologists, a member of the Académie de Médecine, has died. His name is well known in connection with the work he did on the subjects of astigmatism and strabismus. He himself became completely blind as the result of glaucoma, but in spite of his infirmity he was still able to work and lead a useful life. It was then that he wrote his book, "Entre Aveugles," which has been translated into most European languages.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

RADIUM-EMANATION IN MINERAL WATERS—A NEW OPERATION FOR GLAUCOMA—THE CAUSE OF BOTHRIOCEPHALUS ANEMIA—INDICATION FOR MASTOIDECTOMY IN THE SPECIFIC GRAVITY OF THE PUS.

COPENHAGEN, February 22, 1907.

In the Medical Society of Christiania Prof. E. Poulsson read a paper on radium and its therapeutical effects. He drew the attention particularly to the fact that many of the usual mineral waters, *e.g.* the waters of Gastein, Baden-Baden, Karlsbad, Marienbad, Wiesbaden, Kreuznach, Bath, etc., contained rather large quantities of radium emanation and therefore possessed a relatively pronounced radioactivity. Perhaps this circumstance explained the fact that these waters appeared to act better when drank at the springs than when exported, because the water became destitute of the emanation when kept for a long time before being drank. The explanation might be expected to obtain, especially for those waters the composition of which approached very nearly to that of ordinary drinking water, *e.g.* Gastein, which latter spring has nevertheless enjoyed for centuries a reputation of healing powers. He also mentioned the experiments of Bergell and Bickell, that fresh water from the Kochbrunnen at Wiesbaden, added to human gastric juice, accelerated the digestion, or, in other words, that the radium emanation had an activating influence on ferments or enzymes, a quality well deserving of notice, as many mineral waters were famous for cure of affections of the digestive organs. In order to help those who could not afford to travel to the springs, it would be necessary, he said, to produce mineral waters artificially supplied with radium emanation. Experiments in this direction are now being made at the Pharmacological Institute of the University of Christiania.

In the same society Dr. S. Holth read a paper on a new operation which he had devised for the treatment of chronic glaucoma, and which he proposed to call "iridencleisis antiglaucomatosa." On these new principles he had operated upon forty-one glaucomatous eyes with very good results. When he reviewed the cases of chronic glaucoma operated on by him after the classic method of iridectomy, he was obliged to confess that the results were on the whole far from satisfactory. But in certain cases the results were good, and in all these it was seen that casually a little of the periphery of the iris had healed into the incision and formed a subconjunctival fistula, while the conjunctiva bulbi formed a flat bulla over one or both of the ends of the sclerocorneal cicatrix. Thereby he became convinced that though these operations, when judged after the rules of the classical method, were to be considered faulty, in reality they indicated the true way to a rational treatment, because instead of the failing physiological drainage they provided a new one of similar anatomical nature. In suitable cases of chronic glaucoma Holth therefore recommends that iridencleisis antiglaucomatosa be performed by drawing the iris out through the sclerocorneal incision and covering this by a conjunctival flap. When the operation succeeds, a subconjunctival bulla or localized edema forms itself under the conjunctival flap as a testimony of the recovered drainage, the fluid circulating through the eye now being led back through the subconjunctival lymph vessels. In one case an operated eye could later on be microscopically examined and showed that the iris was incarcerated in the sclerocorneal cicatrix and formed a fistula, the walls of which were covered by black pigmented epithelium. This finding supports the explanation given by Dr. Holth of the efficiency of the proposed operation. Prof. H. Schiötz and Dr. Kolstad congratulated Dr. Holth upon the good results of the operation as shown by the demonstrated patients.

In the Serum Institute of the State of Denmark T. W. Tallqvist, from Helsingfors, has carried out some interesting investigations into the pathogeny of pernicious anemia, especially the bothriocephalus anemia. In the proglottides of *Bothriocephalus latus* he has found, in addition to other substances, a fatty matter (lipoid), with strongly hemolytic qualities. He has shown by experiments on rabbits that this lipoid causes anemia, not only when injected under the skin or into the peritoneal cavity, but also when introduced into the intestinal tract. The experimental anemia produced in this way has a certain likeness to the pernicious anemia of man in respect to the hemoglobin value, the unaltered number of the leucocytes and the remittent course of the disease. This experimental influence discloses itself in an increased erythrolysis, as shown by the increased accumulation of iron pigment in the liver and in the spleen. It is highly probable that it is this lipoid substance that constitutes the blood-destroying poison in the bothriocephalus anemia of man, a resorption of the substance from the gut in certain cases causing the disease to develop. To obtain this result it is, however, necessary that a destruction of the proglottides sets in, as otherwise the active substance does not become free in the gut. Clinical experience shows that in reality in a considerable number of cases of anemia the parasite undergoes some alteration. Substances, in all respects similar to the lipoid of *Bothriocephalus latus* are found normally in the mucous membrane of the intestinal tract (and in some of the organs) of higher animals. These substances are also strongly hemolytic. As it is known that the so-called cryptogenetic form of pernicious anemia is nearly always accompanied by pathological processes in the digestive organs (the mucous membrane of the stomach), it is an obvious conclusion that the blood-intoxication is caused also in these cases by the lipoid substances originating in the diseased mucous membrane of the stomach. A lipoid substance similar to those mentioned above has finally been isolated by Tallqvist from carcinomatous tissues. This substance is also a pronounced hemolytic; perhaps, therefore, the anemia sometimes to be found in cases of cancer can be explained by a passage of lipoid substance from the new growth to the blood.

At a meeting of the Danish Otolaryngological Association Dr. P. Tetens Hald read a paper on the fixing of indications for the operative opening of the mastoid in cases of acute suppurative otitis media by means of the estimation of the specific gravity of the pus found in the external

auditory canal. Dr. af Forselles of Hekingborg had previously tried to establish that when the specific gravity of the pus exceeded 1,046 this was an infallible sign of empyema of the mastoid and indicated a mastoidectomy. Now, Dr. Hald showed that af Forselles had not paid due attention to the errors connected with the method employed for estimation of the specific gravity, so that at any rate the numerical value 1,046 was highly erroneous. But he showed further that, even if correct methods for the estimation of the specific gravity of the pus were used, it was exceedingly improbable that we might in this way get any help to establish with greater certainty the indication for mastoidectomy. Prof. Schmiegelow and Dr. Grönbech said that they had entertained considerable doubt as to the value of the method of af Forselles and congratulated Dr. Hald upon his having shown the fallacies of it.

AROMATIC SULPHURIC ACID IN TOXEMIA.

To the Editor of the Medical Record:

Sir:—Your editorial reference to the use of formic acid in the treatment of toxemia following diphtheria (February 2, 1907) has led me to give my experience with aromatic sulphuric acid. About twenty-five years ago I began using the acid in the treatment of boils, with very successful results. In fact, given in five-drop doses (in one teaspoonful of water) every two or three hours, it will cure boils. Later I had the same results with its use in carbuncle. In case of carbuncle, however, as in some other allied conditions, I have found it necessary sometimes to add quinine. My experience with boils and carbuncles led to the use of the acid in all forms of toxemia and blood-poisoning generally. I even use it in cases in which suppuration has already occurred. Aromatic sulphuric acid will arrest suppurative action. It will, if given in time, prevent suppurative action. I use the acid with opium in appendicitis. My results have been so uniformly good that I prescribe the remedy in all forms of toxemia. I have used it in the acute forms of nephritis complicated by pregnancy. In all cases of blood-poisoning my experience with over two hundred cases shows the acid to be a specific in case of chronic ulcer and sloughing ulcer. I give the aromatic acid internally and use carbolic acid externally. The simple dilute acid will not give the same results as the aromatic acid. In this connection I would add to my previous notes on carbolic acid that I have this winter injected two tuberculous tumors of the neck with pure carbolic acid (liquefied crystals), in each case effecting a cure and leaving only very small scars. I have also injected a cancer of the breast with the acid—carbolic—and have so far brought about a considerable reduction of the size of the tumor.

Robert Mason, M.D.

Exeter, N. H.

Progress of Medical Science.

New York Medical Journal, March 2, 1907.

Accessory Nasal Sinuses, from the Rhinological Standpoint.—C. A. Richardson gives a summary of the symptoms of and methods of diagnosis in inflammation of the nasal accessory sinuses. He calls attention to the variable factor of pain, both as to its presence and location. The *x*-ray promises much in the elucidation of doubtful cases, except that it affords no clue to the condition of the sphenoid sinus, but it is of value in determining the condition of the ethmoid cells.

The Accessory Sinuses from the Ophthalmological Standpoint.—W. C. Posey considers it beyond dispute that sphenoiditis and ethmoiditis may excite retrobulbar inflammation of the optic nerve of varying degrees of intensity as well as paresis and palsies of the ocular muscles. Orbital abscess with resulting displacement of the globus occurs frequently. Apparently simple muscles of the lacrymal sac have proven at operation to have arisen in the lacrymo-ethmoidal cells. Sinus disease may also cause edema of the eyelids. This symptom is regarded as of great importance by the author. The conjunctiva has been turgid and studded with follicles in other cases, where the nasal disease seemed to have involved the nasopharynx rather than the sinuses; dendriform ulcer of the cornea appeared to be dependent upon an ethmoiditis in one instance, and change in the refraction of the eye, occasioned either directly by the pressure exerted upon the globe by the wall of a dilated sinus, or perhaps indirectly as a consequence of congestion and spasm of the ciliary muscle, has been observed not very infrequently. The author states that he has not been able to satisfy himself that ocular conditions other than these were actually dependent upon a sinusitis.

Shreds in the Urine in Their Relation to Prognosis and Diagnosis.—De S. Saxe makes a careful study of this subject. He finds that the shreds are best studied after proper fixation in stained specimens according to the methods outlined, Unna's polychrome stain being the preferred reagent for routine work and Gram's stain when gonococci are to be demonstrated. Urethral shreds proper may be divided into four varieties: Pus shreds, mucopus shreds, mucus shreds, and epithelial shreds, each of which have special naked eye and microscopic characteristics. Several varieties of altered epithelia are found in urethral shreds. Those undergoing hyaline changes may be identified not only by the iodophile reaction, but by a peculiar degeneration as shown by their staining qualities with polychrome methylene blue. Shreds composed of pure epithelia consisting of flat pavement cells with small nuclei are shed spontaneously, or after instrumentation, in the stage of the disease in which the superficial layers of the urethra become lined with squamous cells under the influence of subjacent, submucous lesions. Shreds from the prostate and vesicle include several special varieties which can be recognized under the microscope, but cannot be identified with the naked eye. The so-called comma shreds in reality may be one of two varieties of structures. The true comma shred of Fürbringer consists of hooklets of stratified epithelia, derived from the prostatic duct. A false variety of comma shreds is composed of bits of mucopus shreds which roll up into a lump at one end. The frequency of gonococci in urethral shreds is directly as the proportion of pus cells, and inversely as the proportion of mucus and epithelia in the specimens. This rule does not apply to prostatovesicular shreds. The study of shreds is not of great value in the localization of the affection in the anterior or the posterior urethra. The presence of prostatic or vesicular shreds which can be recognized microscopically is an aid to the localization of the process. The study of urethral shreds is most valuable in determining the stage of the process, the order of appearance being, with certain reservations, as follows: Pus shreds; mucopus shreds; mucus shreds; and epithelial shreds. In the prognosis the variety of urethral shreds present can have but a limited use. The fewer the shreds and the fewer the pus cells therein the better the prognosis. The larger the number of gonococci and of pus cells the worse the prognosis is as a rule. Marriage should not be sanctioned unless the terminal shred or shreds contain no pus cells for months, even after provocative measures, such as the drinking of beer.

Trypsin in Cancer.—W. S. Bainbridge says that the report by Morton, in the Medical Record of December 6, 1906, of benefit following the use of trypsin for cancer was premature. He says the specimen examined, upon which was based the pathological report seeming to demonstrate curative action of trypsin, was taken from near the nipple and not from the periphery of the growth. After this operation Bainbridge gave trypsin in much larger dose and alternated it with amylopsin. Twenty-four days after the operation referred to a third operation was undertaken to remove some enlarged nodules and secondary deposits in the skin which had appeared after the second operation. The pathological reports on these secondary growths showed the presence of malignant cells, which, from the abundance of mitotic figures, would seem to have been in an active state.

Journal of the American Medical Association, March 9, 1907.

Laminectomy.—H. M. Sherman reports a case in which he attempted to make an osteoplastic laminectomy of the cervical vertebræ in the removal of a growth producing pressure symptoms in that region. The difficulties of the operation are detailed, and he concludes from the results that a simple laminectomy in this case would have been the better operation, saving time and tissue. The operation which would be the better one in the kyphotic dorsal region is not so satisfactory in the lordotic cervical spine, where the preservation of the laminæ is not essential for the saving of the function of the extensor muscles. The impossibility of an accurate anatomic suture of the muscles that are divided in making the flap and the possibility of seriously interfering with their innervation are matters also to be considered. The surgeons with whom he corresponded were all in favor of the simple laminectomy in this region. He still thinks, however, that an osteoplastic operation may have its place in case of vertebral tuberculosis in which the angular deformity is practically a right angle; here the sawing of the bone would prevent undue compression of the cord, otherwise unprotected, by the muscles.

Multiple Neuritis Simulating Progressive Muscular Atrophy.—Three cases, one of alcoholic polyneuritis,

one of lead paralysis, and one of progressive muscular atrophy, illustrating the futility of attempting to differentiate these conditions by objective symptoms alone, without study of the etiology and course of the disease are reported by J. Grinker, who holds, nevertheless, to the advisability of clinically separating the cornual from the peripheral lower neuron disorders. His conclusions are given as follows: 1. Clinically, multiple neuritis may simulate a spinal atrophy as regards distribution of paralysis, absence of sensory symptoms, and protracted course. 2. Progressive spinal muscular atrophy may resemble neuritis in the presence of pain, remission of symptoms, and subacute course. 3. Etiology and course are still the best guides in the clinical diagnosis of the various muscle atrophies.

Tumors in the Inguinal Canal.—W. L. Peple reports three cases of this condition in young married women, all of whom had had children. In two, the growth sprang from periosteum or fascia covering the inner face of the ilium, while one lay encapsulated in the inguinal canal, attached only to its coverings. All were of comparatively rapid growth, the average from the first time of observation to operation being twenty-two months. In one case, pregnancy seemed to accelerate the growth. All the growths were apparently fibromata that had undergone myxomatous degeneration, and, while two were distinctly benign in appearance, the other was somewhat suggestive of sarcoma, though not identified as such. He considers the cases somewhat unique, both as regards the growths and the microscopic findings.

The Ripening Operation for Immature Senile Cataract.—The difference of opinion in regard to the important question as to use of the ripening operation for immature senile cataract is remarked by F. C. Todd, and to secure the most recent opinion on the subject he addressed letters to a number of leading ophthalmologists and received sixty-nine replies, which he analyzes and discusses. He believes himself that the ripening operation is imperative in some cases for humane reasons, and reports a case which he thinks illustrates this. The operation is contraindicated in cases complicated with high myopia, choroiditis, or other inflammatory conditions in cases predisposed to glaucoma or where adhesion to the iris is present. It is also not needed when a cataract is nearly mature or in patients over sixty, when the cortex is of such consistency that it can be removed without much difficulty. Nor would it seem needed in the case of well-behaved patients, when irrigation can be used by an operator skilled in his practice. Admitting the advantages of irrigation, he concludes that the ripening operation is indicated: 1. In case of immature cataract (not contraindicated as mentioned above), in which a preliminary iridectomy is to be performed. 2. In those patients who would not be likely to behave well during the extraction, thus preventing the operator from performing much toilet or from practising irrigation. If irrigation be not practised, trituration of the lens would be indicated in all patients with immature senile cataract under sixty, in whom, for special reasons, relief is required.

Turnip-Top Treatment of Chronic Diarrhea and Dysentery.—C. Wilson and H. E. Pressly report six cases, four of chronic diarrhea and two of amebic dysentery, microscopically diagnosed, which were successfully treated with a diet of "greens" composed of turnip tops. One of these patients, on going where the diet was not to be had, suffered a relapse and died, the others continued well. Other vegetables, such as mustard, phytolacca, and spinach are also mentioned as having been used to some extent. The attention of the authors was first called to the remedy by the recovery of an apparently hopeless case on "poke salad" (phytolacca) after leaving their care. Of the two cases of amebic dysentery, one patient had tried all the ordinary remedies and was ready to undergo an appendicostomy or an enterostomy if it would relieve him, as his condition was extreme. The other was not so bad, but had given up his work and never expected to be able to take it up. Both made good recoveries under the "turnip greens" diet. Wilson and Pressly have also tried it in two cases of well-defined gastric ulcer, in one successfully. The other patient was nearly moribund, and while he was able to take the diet better than anything else, it failed to save him. The method of cooking is important, as it is very unpalatable if not properly prepared. As prepared as a domestic dish in the South, ordinary bacon is used, boiled half an hour, and then the turnip tops, spinach, mustard, or phytolacca tops are added and allowed to boil from one to two hours.

The Lancet, February 23, 1907.

Cellulitis of the Spermatic Cord.—F. C. Madden reports a series of cases presenting symptoms of strangulated hernia, but which on operation have shown an empty hernial sac in the center of the swollen inflamed tissues described below. The clinical features of the cases are summarized as follows: The patients generally complain of severe pain in the scrotum and around the lower part of the abdomen on the affected side, with constipation and some vomiting, which, however, is not usually a prominent symptom and is generally remarked only at the first onset. The temperature is raised and the general condition may be decidedly bad. On examination the side of the scrotum appears to be filled with a large rounded swelling which runs right into the region of the external ring—in fact, presents all the appearances of an irreducible inguinal hernia. On palpation, it will be noted that the skin is edematous and the swelling is hard, but doughy on firm pressure, runs well down into the scrotum, and cannot be reduced. There is no impulse on coughing and the whole mass is dull on percussion. The general impression in such cases is that it is impossible to be sure whether we have to deal with strangulated hernia or not, but in any case immediate operation is the proper treatment. An incision is then made over the lower part of the abdomen and the neck of the scrotum, through a markedly edematous skin, and several layers of thickened infiltrated edematous structures are divided, but still no gut is found nor even clear fluid within a sac. Finally, after separating off all the different layers, which are firmly glued together by lymph, a thick inflamed rope-like structure is met with which runs distinctly up into the abdomen through the internal ring. On removing this cord between ligatures, the upper one as high up as possible, it is seen that it consists of a much infiltrated spermatic cord, the veins in which are all thrombosed and filled with purulent clot, while the rest of the structure is thickly studded with small abscesses, or rather collections of pus scattered throughout a kind of spongy tissue in its whole length. On the removal of this portion of the cord an elongated hernial sac of thickened inflamed peritoneum, its serous surfaces adherent with lymph, may sometimes be found and ligatured off at the level of the internal ring. On the completion of the operation a gutter is left, formed by the opening up of the inflamed coverings of the cord and scrotum, and this is packed with gauze and the whole wound is allowed to granulate up from the bottom. The testicles are not affected as a rule, but, as their functions must be quite abolished by the block in the cord, they are usually removed, a procedure which materially simplifies the subsequent course of treatment of the case. After running a modified septic course the patients usually do very well. One case has resulted fatally from extension of suppuration along the retroperitoneal tissues leading to diffuse septic cellulitis. Madden suggests that the condition may be a primary phlebitis with septic thrombosis of the veins of the spermatic cord, though he is at a loss to explain such a lesion without some original septic infection which the cases in question have not presented.

Infective Endocarditis Cured by the Inoculation of a Vaccine Prepared from Organisms Found in the Patient's Blood.—A case is detailed by J. Barr, W. B. Bell, and S. R. Douglas, the inoculations being regulated by the examination of the opsonic power of the patient's serum. The patient was a woman of twenty-five years, who began with a sore throat followed by a large, soft swelling behind the angle of the left jaw. This disappeared in three days. About a week later a continuous high temperature was noted. Antistreptococcus serum was injected without appreciable result. In about a fortnight from the beginning of the case evidences of endocarditis of the right ventricle were present. A small abscess appeared in the foot and a streptococcus was isolated. Later a pure culture of streptococcus was isolated from the blood and a vaccine was made therefrom, according to the method of Wright. The treatment was thereafter carried on along the lines indicated in the title of the paper, and the patient made a complete recovery. The authors say that the problem in these septicemic cases is whether the presence of an area containing living and multiplying bacteria, which from time to time have free access to the blood stream, is at all favorable for the manufacture of antibacterial substances by the infected organism or whether a more efficient production would take place if the bacterial products were brought into actual contact with the cellular tissues and had to pass through the lymph stream before reaching the general circulation.

Condition of the Blood-Vessels During Shock.—J. D. Malcolm takes exception to the idea expressed by Crile that in a state of shock the blood-vessels are paralyzed throughout the body and that this is due to an exhaustion or breaking down of the vasomotor centers. He claims that the superficial capillaries are not dilated during shock,

and no evidence has been advanced to show why it is that their distention does not occur as a consequence of the paralysis of the muscular coats of the blood-vessels which is said to exist. Crile claimed that the fall of blood pressure which he invariably found during shock must result as an exhaustion of either the cardiac muscle, cardiac centers, blood-vessels, and vasomotor centers. He excluded the first three and fell back on the fourth. This argument is based on the assertion that a lowering of pressure in the carotids must depend on a relaxation of some part of the vascular system. This statement Malcolm considers as an untenable proposition. It appears, says he, to be founded on the idea that a contraction of the arteries causes a rise of blood pressure and a relaxation causes a fall. But this is a very incomplete and inexact statement of the well-recognized law that the small arteries exercise a regulating or stopcock action on the flow of blood to the tissues. When fully set forth an essential part of the stopcock mechanism is that a contraction raises the pressure in the large vessels, but at the same time lowers the pressure in the smaller ones, in those beyond the point where the stopcock is supposed to act. Hence, if any vessel has its lumen sufficiently contracted the blood pressure in it will be lowered. Malcolm believes that in this fact we have the true explanation of the fall of blood pressure in shock. The author is convinced from clinical observation that the larger internal vessels, arteries as well as veins, spout more forcibly if divided when the patient approaches a condition of shock than they do if the operation is not severe. He has noted this particularly in the cystic branch of the hepatic artery, renal arteries, and larger mesenteric arteries, and believes it due to the fact that these large central vessels, both arteries and veins, are unusually full. A rise of blood pressure in the large vascular trunks of the internal areas is fully accounted for if the vessels throughout the body contract and if the superficial vessels are more tensely contracted than the central ones. A difference between the superficial and the central areas in this respect ought to exist, for a low temperature acts powerfully in contracting the vessels and the superficial temperature falls markedly in the state of shock. Moreover, the smaller vessels have comparatively a much greater muscular power than the larger. Thus all the conditions tend to collect the blood towards the center of the body if his view is correct. But there is no evidence of paralysis of the vessels anywhere. Concerning the effect of adrenalin in shock, he says that the administration of this remedy here is not free from risk. During recovery from shock if, as he believes, the vessels are relaxing, saline injections should be useful. And at this stage fluid enters the vessels from the rectum almost as quickly as by direct injection. Theoretically, and he thinks practically, injections into the cellular tissue are to be preferred to those into a vein, if some such treatment is considered desirable during shock, because if the fluid does not find its way into the vessels from the cellular tissue an attempt to force it into a vein is likely to be not only futile, but also harmful. He regards the usefulness of injections with a view to increasing the bulk of the blood as very limited in cases of uncomplicated shock.

British Medical Journal, February 23, 1907.

Antistaphylococcic Serum in Furunculosis.—R. T. Thorne refers to the case of a woman of forty-five years with furunculosis of the face and body, lasting over a period of three years. Various remedies failed to give any permanent relief. He therefore made six injections of a vaccine prepared from the pus of a mature furuncle, commencing with 0.5 c.c. and increasing up to 2 c.c., leaving ten days between each injection. These caused no discomfort whatever, and from the date of the first injection to the present time (six months) no fresh furuncles have appeared and the patient is in perfect health.

Acute Intussusception.—A case is reported by W. G. Williams whose patient was a boy of three years, who fell down some steps and complained at once of some severe umbilical pain, which disappeared, but soon returned. Seen half an hour later he presented a condition of partial collapse with frequent pains, but no vomiting. There was a distinct swelling in the right iliac fossa, and extending rather higher up than the usual ileocecal variety, and this was more pronounced during the attacks of pain. Vomiting commenced in about an hour after the accident happened. The patient was at once placed under the influence of morphine, and three hours after the accident an injection of sterilized warm water was given by means of a catheter connected with an india-rubber tube and funnel. After injecting about a pint into the bowel the author placed his right hand over the swelling, while with his left hand he grasped the abdominal wall and small intestine and pulled gently downwards and towards the left side; suddenly, to his satisfaction, the swelling disappeared from under his right hand. He regards it as of the utmost importance in acute intussusception that the patient should be seen and diagnosed early, and at once put under the influence of morphine. An attempt at reduction should also be made as soon as possible, as in this way a good many lives can be saved. In this particular case an injection only was not sufficient, but a little traction applied worked admirably.

Rupture of Dilated Aorta Leakage Bruit.—F. B. Skerrett was called to see a man of seventy-one years who had collapsed while at stool. He found him pale, unconscious, with pupils widely dilated, and lips blue. The pulse was not perceptible at the wrists, and he was only taking short breaths at intervals. On auscultation over the precordial region the cardiac sounds could be heard feebly, but distinct from a continuous adventitious sound which may be described as "gurgling" or "lapping," as of a cat lapping milk. The bruit, which altered in character, the successive laps becoming more rapid and finally lost, was quite different from any sounds I have ever heard in the chest, and suggested at once the leakage of blood. It was thought the man had ruptured his heart muscle. He rapidly succumbed. At the post-mortem examination the pericardium was greatly distended with dark fluid and clotted blood. The heart was hypertrophied, but no rent in it could be found. In the external wall of the aorta were seen large dark-bluish areas almost encircling the vessel. They looked like gangrenous patches, but were really blood-clot infiltrations. The first part of the aorta was somewhat dilated and very atheromatous in parts, and in the inner coats of the wall near to the pulmonary artery was an irregular longitudinal valvular slit quite one and one-half inches in length, through which the blood had leaked. From this it had traveled in the coats of the vessel, and escaped into the pericardium posteriorly. The valves of the heart were in good condition. The rectum was found loaded. The man had not had any symptoms, his only trouble being a chronic bronchitis. A point to remark about the bruit heart was its total independence of the cardiac sounds. Presumably in rupture of the ventricle the sound of leakage, if ever heard, would be intimately related to the cardiac systole.

Merycism or Rumination in Man.—An elaborate study of this symptom is made by E. M. Brockbank, who gives the histories of a considerable number of personal cases. He refers to the medical history of the trouble, and then takes up the questions of mode of onset, power of combat, general health, etiology, age, sex, chemistry, varieties, pathology, mechanism, diagnosis, and treatment. He notes that in children imitation plays an important rôle. In his own experience the affection has come on in very early life, more often below the tenth year. The sexes have been equally involved. It may develop after an infectious fever or follow a blow on the stomach. Disorders of the latter organ frequently precede it, and constipation is a frequent coincident symptom. Many of the cases are very neurotic. As far as known, no chemical defect in the stomach has any causative relation to the attacks. As to treatment, the author says that in many cases, especially in the poorer classes, it is probably useless trying to control the ruminating act when the phenomenon may be called physiological. In the more intelligent classes, by practice, an expiratory effort, at the time of the development of the negative pressure in the thorax, might have some good effect, and cases have been published in which by an act of will the process could be brought on or warded off. The subjects of rumination should be advised to eat their meals slowly, taking considerable pains to chew the solid food well before it is swallowed, and to avoid all specially predisposing foods. They should also take very little fluid with their meals. No simple stomachic drugs have been of any use in controlling the rumination. Smoking acts as a deterrent in some instances. Where there are any concomitant dyspeptic symptoms these should be relieved, and should they have been the exciting cause of the rumination, their relief would probably benefit the merycismus. If the subjects of rumination feel ill after suppression of what is to them a natural process, they must on no account interfere with Nature's demands.

Berliner klinische Wochenschrift, February 25, 1907.

Magnet Operations on the Eye.—Hirschberg says that during the twenty-seven years that have elapsed since he first removed a fragment of iron from the depths of the eye by means of the electromagnet he has repeated the operation 347 times. He considers that it is ill-advised to refrain from attempts to remove a foreign body from the eye on the ground that it may become harmless through

encapsulation, and expresses his conviction that sooner or later the visual power of such an eye will be seriously impaired or totally destroyed. For diagnostic purposes both the *x*-ray and his own instrument, the sideroscope, should be made use of. It is a mistake to believe that the magnet itself can be used to establish the presence or absence of an iron particle in the eye, for the belief that if on approaching the instrument no pain is caused no foreign body can be present has been proved to be erroneous by many cases in his own experience. The author describes two of his most recent cases in which the successful removal of the foreign body by means of the magnet was of especial importance since the eye in question was the only one with which the patient was able to see. In the one case the injury was recent, and a splinter measuring 3.75 by 1.75 by 2 mm. was removed. In the other case the foreign body had entered the eye over a year and a half previously, but was also removed without complications, although the patient's visual power had already begun to show serious impairment.

Observations on the Importance of Mother's Milk During the First Period of Infancy.—Salge says that the importance to the infant of receiving mother's milk during the first period of its existence cannot be sufficiently emphasized, and that no physician should permit artificial food to be used if it can possibly be avoided. In analyzing fresh milk the mistake is frequently made of taking a sample for examination before the child has begun to nurse. Such a sample will always have a low fat content, because the amount of fat in the milk increases steadily during each of the infant's meals. To obtain a proper sample it is necessary to take some of the milk at the beginning and also at the end of each nursing for twenty-four hours, and then make the determination on the mixture of all these. If artificial nourishment is absolutely necessary overfeeding must be carefully avoided, and the author's rule is never to have the intervals between meals less than three hours. At the most, six to seven meals a day should be given, and during the first week the total amount of nourishment should not exceed 250-300 c.c. daily, gradually increasing to 600 c.c. in the course of the first four weeks.

Deutsche medizinische Wochenschrift, January 31 and February 14, 1907.

Calomel as an Antiseptic.—Theopold speaks highly of the value of calomel as an antiseptic for general surgical use and especially in obstetric practice. It has been employed under his direction in from 4,000 to 5,000 confinements conducted mainly under the care of midwives and the results have been extremely satisfactory. The agent owes its safety to its insolubility in water and watery fluids, while its antiseptic property appears to depend on its capacity to produce coagulation of albuminous substances when brought into close contact with them. Experiments with pathogenic bacteria have shown that its antiseptic value is quite high, and that when applied to a given surface it is perfectly capable of preventing infection by small amounts of bacteria. If it is applied together with iodoform a mutual decomposition results with the formation of the iodide of mercury, and the antiseptic action produced is much greater than that of either agent by itself. As ordinarily used there appears to be no danger of causing intoxication by the application of calomel for these purposes, and the author warmly commends it as a dusting powder to be applied to the hands after these have been sterilized in the usual way before performing any obstetric manipulations.

Observations on Hay Fever.—Wolff-Eisner dwells upon the necessity for making an accurate diagnosis in cases suspected to be true hay fever in order to distinguish them from nervous coryza, nervous asthma, etc. In order to do this it may sometimes be advisable to resort to the use of a diagnostic pollen extract. This can be prepared by triturating in a mortar pollens of the different varieties encountered in the locality in question, adding salt solution or plain water, centrifuging, and using the clear fluid. He speaks highly of the use of nose filters and protective eyeglasses with padded rims as prophylactic measures, but does not consider that Dunbar's serum is a true antitoxin. In order to prove a point denied by many, namely, that the conjunctiva alone may in some cases be susceptible to the irritating properties of the pollen, he describes his own case. Ever since being exposed to the pollen of rye, while collecting this in the fields for experimental purposes, he has suffered from a very marked idiosyncrasy to the influence of pollen, but this has always manifested itself only through conjunctival symptoms and there has never been any involvement of the nasal mucosa.

Hemorrhagic Complications of Scarlatina.—Klose, in discussing these complications as well as hemorrhagic conditions in children in general, states that he has found the treatment by the injection of gelatin solutions the most satisfactory. He usually employs a 10 per cent. solution and administers 20 c.c. at a time. For the site of injection he recommends the axillary region midway between the anterior and posterior axillary lines, which he says is also very well suited for the injection of diphtheria antitoxin. The skin in this situation is freely movable, and overlies a satisfactory cushion of fat and connective tissue, while lymphatic glands for absorption are close at hand. If the gelatin solution is carefully prepared the much dreaded danger of tetanus need not be apprehended.

Münchener medizinische Wochenschrift, February 12, 1907.

The Etiology of Erythema Nodosum.—Hildebrandt reviews the reports of a number of authors which appear to indicate that erythema nodosum is not infrequently associated with tuberculosis and describes a case of his own which he considers lends color to the view that there may be an intimate relationship between the two conditions. His patient was a young woman of twenty-four years, who had had enlarged cervical glands in childhood and came under observation with an acute angina and stomatitis. Ten or twelve days later she developed erythema nodosum, and during the acute period of the affection, while new eruptions were still appearing, the urine gave a positive diazo reaction. On injecting some of the patient's blood into two guinea pigs both animals developed tuberculosis, while no other organisms could be discovered in the blood. Somewhat later, first a right-sided and then a left-sided pleurisy followed by pericarditis developed and an infiltration at the right apex could be detected, so that these were all regarded as manifestations of a tuberculous process. Therefore at the time when the erythema nodosum appeared virulent tubercle bacilli were circulating in the blood. The author is of the opinion that while erythema nodosum occurring in a tuberculous patient does not necessarily depend on the tuberculous infection, it may be possible, though it has not yet been proven, that tubercle bacilli may give rise to a disease process that cannot be distinguished from the ordinary erythema nodosum.

French and Italian Journals.

Genesis of Pulmonary Anthracosis.—Francesco Feliciani gives the results of experiments on animals to ascertain the origin of pulmonary anthracosis. The animals were fed with materials containing coloring matters with a view to find out whether these substances would appear in the lungs or other organs. His conclusions are given thus: Experimental ingestion of carbon or carmine in powder does not produce a corresponding pigmentation of the lungs. Those powders ingested do not traverse the intestinal mucosa and do not appear in the liver or mesenteric glands. Injection of powder into the peritoneal cavity does not produce anthracosis in the lungs. Since the biology of germs varies from that of inert powders we cannot say that the same is the case with bacteria, such as the Koch bacillus.—*Il Policlinico*, December, 1906.

Regeneration of Nerve Fibers.—Aldo Perroncito concludes his researches on the regeneration of nerve fibers thus: At the central nerve stump there is a rapid new formation of nerve fibers in continuous lines. The axis cylinder degenerates, but is regenerated by lateral germs or division of the old axis cylinder near its cut extremity. The fibers penetrate the cicatrix and reach the peripheral fragment, anastomosing in its substance. Suture of the nerve assists regeneration by bringing the fragments together, and directing the course of the new nerve fibers to the peripheral stump. Some fibers of the peripheral fragment degenerate; others become club shaped at the ends. The new fibers surround the degenerated ones. The process of repair is not always the same in similar lesions. The return of function is not always proportional to the amount of repair. Electrical conduction in a nerve begins first in the peripheral fragment. No functional activity can be demonstrated in nerves that do not show repair changes. Suture facilitates repair and reestablishment of function.—*Archivio per le Scienze Mediche*, Vol. XXX, Part 5.

Syphilitic Arthropathies.—Guido Marino reports two undoubted cases of syphilitic joint affection because there has been much doubt thrown on the existence of true syphilitic joint lesions. There are two types of syphilitic joint affections. Gummatous infiltration begins in the perisynovial tissues. In another type the lesion is primarily of the bones. The synovial membrane remains intact or is involved secondarily. The effusion that takes place is only a reaction at a distance from the periarticular inflammation. There is articular motion that is relatively pronounced and little pain in movement. These facts show the normal condition of the synovial membranes.—*Il Policlinico*, January, 1907.

Book Reviews.

THE PRACTITIONER'S MEDICAL DICTIONARY. An Illustrated Dictionary of Medicine and Allied Subjects, including all the Words and Phrases Generally Used in Medicine, with Their Proper Pronunciation, Derivation, and Definition. By GEORGE M. GOULD, A.M., M.D., Author of "An Illustrated Dictionary of Medicine, Biology, and Allied Sciences," "The Student's Medical Dictionary," "30,000 Medical Words Pronounced and Defined," "Biographic Clinics," "The Meaning and Method of Life," "Borderland Studies," etc.; Editor of *American Medicine*. Philadelphia: P. Blakiston's Son & Co., 1907.

THIS is a new dictionary (not a revision) similar in style and in get-up to Dr. Gould's other dictionaries with which the profession of this country is already so familiar. In the matter of completeness, as regards the number of titles, it seems to be between the large "Illustrated Dictionary" and the "Student's Dictionary" of the same author. It is of very convenient size and weight, with flexible cover, and bound so as to lie flat on the table wherever opened.

Among the new features in which this dictionary differs from the others by the same author is the distribution of the eponymic terms throughout the book in their alphabetical order instead of their grouping in a table under the one head, "disease." The same principle might profitably, we think, have been extended by breaking up the other tables of signs, symptoms, tests, etc., and distributing their single titles alphabetically. The Basle system of anatomical nomenclature [BNA] has been introduced. In the definitions of drugs the dosage has been given in the metric as well as the apothecaries' system, and the definitions have been changed, where needed, to conform to the directions of the new Pharmacopœia; in the spelling of the alkaloids and chemical terms, however, the dictionary departs from this authority, which we cannot but regard as unfortunate, since the Pharmacopœia is the standard, and if its authority is accepted in the matter of names and preparations it should be also in that of spelling of official drugs. However, the dictionary will not be consulted much for its spelling but for its definitions, and in this respect and in the number of new terms defined the work is one of surpassing excellence. We have failed to find very few of a test list of new words, and those only the latest coined which have really not yet won an assured place in medical nomenclature. One curious omission is that of "eyestrain," a term which is surely worthy of a scientific definition. The work is especially rich in eponymic terms—a most commendable feature, since it is possibly these terms that drive the reader of modern medical books and journals to the dictionary. The illustrations, chiefly anatomical, are not too numerous, and are well executed; the only criticism we would offer is that many of them are too large, one picture taking up sometimes nearly an entire page when it would lose nothing in clearness if reduced at least one-half.

We have tried to point out the defects in the work rather than the excellences, since the latter are assumed to be present in every new book and new edition brought out under the guidance of this veteran medical lexicographer. The good points are numerous and striking, and they will doubtless serve to secure for this new work the same measure of popularity that the dictinnaries which have preceded it have enjoyed. Taken all in all—size, weight, binding, illustrations, definitions, and number of new terms—the Practitioner's Medical Dictionary is extremely satisfactory.

DIET IN HEALTH AND DISEASE. By JULIUS FRIEDENWALD, M.D., Clinical Professor of the Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRÄH, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second Edition. Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Co., 1906.

IN this second edition of their work, the authors have added some valuable material, notably in the chapters on "Salts," Klemperer's work on "Oxaluria," "Diet at Water Cures," and Prochownick's "Diet in Pregnancy and Pelvic Contraction." They have noted Chittenden's work and have added a revised list of recipes for ready reference. It is perhaps unfortunate that in making these timely additions to their work, the authors fail to relieve the book of much that is cumbersome and unessential in the text of the first edition. This would especially apply, for instance, to such chapters as that devoted to the diet in diabetes and that upon diet in phthisis. In the former considerable space is given to dietaries which, while applicable in Germany, are by no means so in England and America, and the space thus taken might, with considerable advantage to American readers, have been devoted to a more exhaustive consideration of the works of Chittenden and Folin, which tend to demonstrate that the old accepted standards of Voit, Von Noorden, and others, of the proteid requirements of a healthy individual, are probably considerably overestimated. The section on "Infant Feeding" and "Diet in Early Childhood" might also with advantage have been condensed. On the whole, however, this second edition will no doubt, like the first, fill a certain need, especially in training schools and as a ready reference book for the general practitioner.

GESAMMELTE BEITRÄGE AUS DEM GEBIETE DER PHYSIOLOGIE PATHOLOGIE UND THERAPIE DER VERDAUUNG. Von Dr. I. BOAS und Seinen Schülern. 1886-1906. Herausgegeben von Dr. I Boas. Specialarzt für Magen and Darmkrankheiten in Berlin. Zwei Bände. Mit zahlreichen Textabbildungen, Tabellen und 4 Tafeln. Band I. Band II. Berlin: Verlag von S. Karger, 1906.

THE one hundred and twenty-six separate articles on subjects connected with the physiology, pathology, and treatment of the digestive functions, comprised in these two volumes of over 700 pages each, represent the research work done by Boas and his pupils in the twenty years that the former's private polyclinic in Berlin has been in existence. Now that the stress of other work has forced him to give up active work in the clinic, Boas presents these contributions in collected form, because, he says, it appears to him to be a duty to give an accounting of what he and his assistants have accomplished during this time. It is indeed a series of records of intelligently directed effort well worthy of those who took part in it, and of the guiding mind that supervised the work. More than one-half of the articles are by Boas himself, and of the other authors many have attained prominence in the field of gastrointestinal medicine. The subjects dealt with naturally are most varied, and there is scarcely a phase of the subject in general that has not been made the object of research by this diligent coterie of workers, so that the two volumes form a work of reference whose importance can hardly be exaggerated. Its utility would have been greatly increased, however, if an index had been supplied.

A TEXT-BOOK OF HISTOLOGY. By FREDERICK R. BAILEY, A.M., M.D. Adjunct Professor of Normal Histology, College of Physicians and Surgeons, Medical Department, Columbia University, New York City. New York: William Wood & Co., 1906.

BUT few departures have been made in this volume from the plan of its first edition. The book has been improved in a general way by changes in some of the drawings and by the addition of several new diagrams. The short sections on Special Technique apnended to each chapter, the semi-diagrammatic character of most of the illustrations, and a happy accentuation of important elements in the text give it numerous practical advantages over other books of this kind. As in the first edition the elaborate section on the nervous system remains the chief feature of the work, which, with some revision and the embodiment of the more recent advances, contributes more than any other of its parts to make the book a useful one. The plan of this section is systematic and particularly adapted to teaching purposes. The author has been successful in simplifying by his treatment this difficult subject, noticeably in those chapters dealing with the fiber tracts of the cord. In this lies one of the chief merits of the book.

TUMORS, INNOCENT AND MALIGNANT; Their Clinical Characteristics and Appropriate Treatment. By J. BLAND-SUTTON, F.R.C.S. Fourth Edition. Chicago: W. T. Keener & Co., 1907.

THIS book is based on the primary fact that the diagnostic power is greatly increased by a combination of pathological and clinical knowledge, and this should be drawn not only from human, but from comparative sources, for in in many instances it is impossible to appreciate correctly the meaning of certain neoplasms without such information. Our views of tumors have so changed within recent years that numerous changes were rendered necessary in the text to bring the book up to date, and this has required the addition of many extra pages. Attention is called to the unsatisfactory classification of tumors which has hitherto prevailed and that adopted by the author, although capable of criticism, seems to fill the desired want. He divides neoplasms into six groups, those of the connective tissues, of the teeth, epithelium, and fetal membranes, teratomata, and cysts. The distinction between innocent and malignant growths is also well put—"the baneful effects of innocent tumors depend entirely on their environment but malignant tumors destroy life, whatever their situation." The book is entertainingly written and constitutes a very desirable presentation of the clinical characters of neoplasms with general indications as to their treatment.

Society Reports.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, January 21, 1907.

THE PRESIDENT, DR. THOMAS E. SATTERTHWAITE, IN THE CHAIR.

Report of the Committee on the Death of Dr. Glover C. Arnold.—Dr. ANDREW H. SMITH, Chairman.

Report of the Committee on the Death of Dr. Alfred W. Gardner.—Dr. ROBERT COLEMAN KEMP, Chairman.

Report of the Committee on the Death of Dr. Alexander E. MacDonald.—Dr. ADOLF MEYER, Chairman.

Experimental Studies in Arteriosclerosis.—Dr. OSKAR KLOTZ of Montreal, Canada, presented this paper, which was read by Dr. Adolf Meyer. The author stated that our conception of the pathology of arteriosclerosis had recently been so altered that much confusion existed at the present time as to what form or forms of arterial disease should be considered under that term. There were many who would limit the term to a single kind of lesion, while others were more liberal and used the appellation to include the great mass of arterial diseases which eventually led to a thickening of the vessel walls. The author of the term leaned towards using the word "arteriosclerosis" for all conditions of hardening of the arteries, and with that interpretation the older anatomists had agreed, reserving, however, the term "atheroma" for another distinct lesion. However, Virchow's description of endarteritis chronica deformans, as the commonest type of arteriosclerosis, had led to the adoption of these expressions interchangeably, and his views had recently found the most favor. In his own studies, Dr. Klotz said, he had given the wider use of the word, and had included under arteriosclerosis, as was formerly the case, all hardening of the arterial coats. The experimental production of arteriosclerosis in animals was of fairly recent origin. The first experiments undertaken were by direct injury, as crushing of an artery. In this way the experimenters had hoped to bring about sufficient change in the vessel walls to lead to aneurysm. They were disappointed in this, but instead of an aneurysm they found that certain local inflammatory changes with endothelial proliferation were produced. It had since been shown that in all cases where an artery was disturbed in its natural bed, thereby affecting the vasa vasorum, an inflammatory reaction was the result. Since the above mechanical experiments were made several other ways had been found to bring about the same results. The chronic endarteritis had been brought about by the intravenous inoculation of bacteria of low virulence. Thus, Dr. Klotz said, he had been successful in producing an endarteritis chronica deformans in the arch of the aorta, and sometimes in the abdominal portion by the injection of old laboratory stocks of the streptococcus or *Bacillus typhosus*. A true inflammation of the media (a mesarteritis) he had not succeeded in obtaining, except when the injury had been induced close to the vessel itself. In that case the inflammation of the surrounding tissue spread into the arterial wall.

The experimental endarteritis chronica deformans had histological characters quite similar to those in the human arteries. The lesion was composed of a heaping up, layer by layer, of the endothelial cells, while the connective tissue underneath the endothelium was also undergoing a proliferation. The result was that a white pearly plaque was produced, under which degenerative changes of a fatty character might develop in the deeper part of the intima. Pathological changes in the arteries had also been produced experimentally by the use of adrenalin, digitalin, nicotine, and barium chloride. In these cases it had been shown that the muscle cells in the middle zone of the media were primarily attacked, and, according to the intensity of the intoxication by these drugs, the cells either underwent a fatty degeneration or complete destruction. Along with the death of the muscle cells, the elastic fibers in the media were also affected, and, like the former, they either became fatty, or, with more severe intoxication, underwent necrosis. In each instance, the muscle fibers were primarily affected. This type of arterial disease, in which the media was first destroyed, was spoken of as Moenckeberg's arteriosclerosis. Not alone was the medial degeneration, with calcification, produced by means of certain drugs, but Dr. Klotz said he had also obtained it by the inoculation of the diphtheria toxin. This was important in demonstrating that the effects of diphtheria were not confined to nervous tissue and heart muscle, but that the muscular elements of the vascular walls were also attacked.

Some Diagnostic Features of Arteriosclerosis in Clinical Medicine.—Dr. LOUIS FAUGÈRES BISHOP, in this paper, said that the importance of arteriosclerosis must be judged by the symptoms which accompanied it. In itself a moderate degree of arteriosclerosis was of no importance to the individual. It was important only when considered in relation to its causes, and the possibility that their continuance might bring about serious functional and structural degeneration of blood-vessels which would endanger the functions of certain structures. To trace the steps in the process of development of arteriosclerosis and its symptoms it was necessary to begin with the physiology of the circulation. The organs of the circulation were composed of the heart, arteries, and veins, which consisted of soft, expansible vessels, capable, when relaxed, of holding three times as much blood as was ordinarily found in the body. For the proper circulation of this blood, the organs of the circulation were maintained in a uniform state of tension, which was altered in one place or another to vary the blood supply to meet the demands of the body. This general tonicity of the vessels was maintained by a central nervous influence that was constantly active. When for any reason this central influence was in excess, we had the hypertonicity of the blood-vessels. This immediately complicated the circulation by demanding a higher blood pressure, and tending to a hypertrophy of the heart. Under such circumstances, arteriosclerosis developed either as a conservative measure analogous to the hypertrophy of the heart, or perhaps also in a measure as a trophic change of central origin. The symptoms of arteriosclerosis were, therefore, the symptoms of hypertonia vasorum, with its irregularity of blood-vessel control, excepting in the case of very gross lesions, where there might be purely mechanical local results due to the blocking or rupture of a blood-vessel. This conception of arteriosclerosis, Dr. Bishop said, seemed to him to explain the local and general symptoms better than any theory that had regard only to the pathological anatomy. The influence of the nervous system in originating and maintaining a vicious tension in the circulation was second only in importance to the results of degenerative kidney disease, and of late years it had seemed to him that the cases of nervous origin were becoming even more frequent than those primarily of nephritic origin. Much was said about the strain of modern life, and it seemed that here was a point where we could put a finger upon a definite result of a too strenuous existence. Constant strain and worry brought about changes in the circulatory system which apparently led eventually to structural changes, to hypertrophy of the heart, and the subsequent secondary degeneration. The condition was found in women as well as in men, although men were more subject to the causes. Dr. Bishop said he had lately come to use the term chronic vascular overtone to describe a disease that had attracted the attention of the students of medicine for many years, and the true nature of which had always been a matter of speculation. It was ordinarily spoken of as high blood pressure, but in the light of his experience he thought that chronic arterial overtone would be a better name. Opposed to vascular

overtone, there was a corresponding condition of vascular undertone, which he had described in several papers under the name of constitutional low arterial tension. The recognition of the physiological fact of the existence of this constantly acting force between the nervous system and the vascular system would explain very beautifully many of the disorders of circulation found in functional and organic disease of the nervous system, and would point the way to the interpretation and treatment of many circulatory disorders hitherto misunderstood and considered incurable.

Visceral Arteriosclerosis.—Dr. Harlow Brooks, in this paper, stated that the visceral arteries were those of the "medium" class, as classified by the histologists, and were the trunks which had a thick and well-developed muscle coat. This heavy media was physiologically necessary, since the blood supply to these organs was alternately increased by the relaxation of the muscle, and decreased during the physiological resting stage by the local contraction of this coat. As a result of this delicately balanced function, even relatively slight changes in any of the walls of these very active vessels hindered or limited the possibilities in these directions. Thus, an alteration in the intima, even if it did not, as in most cases, also extend to the media coat, caused an appreciable alteration in the caliber of the vessel when it contracted or expanded. Most important of all, when the media or muscle coat became even slightly diseased, either by degenerative muscular alterations, by encroachments of interstitial hyperplasia, or by true inflammatory exudate, the physiological relaxation and contraction and the entire control of the nutritive vascular supply was interfered with, and the organ might, as a result, become chronically congested, or perhaps habitually anemic. In either case, the viscus became permanently damaged, and was no longer able to maintain properly its functions and its physiological balance in the interreactions of the body. A disturbance of this equilibrium led first to secondary changes in the immediately dependent organ, and perhaps finally to lesions of the general viscera. Furthermore, disease of the arterial walls in vessels of this class tended to alterations in the general blood pressure, probably in an attempt on the part of the body by an increase in pressure to balance the blood distribution, or to furnish a normal, requisite amount of blood for the functional activity of the diseased organ, especially if it be of great vital importance, as was the case with the heart or kidney. Elevation of the blood pressure, due apparently to local arterial disease, was particularly well illustrated in cases of arteriosclerosis or small contracted kidney, where the blood pressure was almost uniformly elevated, a fact for the full recognition of which we were chiefly indebted to Janeway. In concluding his paper, Dr. Brooks emphasized the following points: 1. The great frequency of visceral arteriosclerosis and its importance, particularly in internal medicine. 2. That it could be diagnosed in many cases, partly by exclusion, partly by its direct signs and symptoms, and partly by the results attending treatment. 3. That treatment was attended with great benefit in a very considerable number of cases, but it must first be based on a close study of the special etiology, on a thorough appreciation of the physiology of the diseased organs, and of the special idiosyncrasies of each instance; and, finally, on a correct diagnosis.

Arteriosclerosis in Diseases of the Eye.—By Dr. Wilbur B. Marple. (See page 421.)

Dr. Reynold Webb Wilcox said the subject under discussion was one of the most important that was before the student of internal medicine to-day. A good deal of work had been done in the line of experimental arteriosclerosis, as had been pointed out in the paper sent by Dr. Klotz, and some extremely valuable contributions to this subject had been made by Pierce of Albany. Although this work was still in an experimental stage, it could be assumed with a fair degree of safety that the changes that were thus produced in the walls of the arteries corresponded very closely to those that were observed clinically in the human subject. We knew that when an artery was injured, followed by secondary changes in the media, precisely the same changes took place as followed the administration of adrenalin or barium chloride. The alterations in the arterial walls were similar in both instances. In regard to the changes induced by pathogenic bacteria, that question was not yet accurately determined, and probably would require further experimentation. In reference to Dr. Marple's paper, the speaker said there was at least one point that could not be too strongly emphasized; namely, the importance of the ophthalmoscope as a diagnostic aid to the general practitioner. In speaking of so-called albuminuric retinitis, Dr. Wilcox referred to the inaccuracy of the term, as this form of so-called retinitis might occur without the presence of albumin in the urine, and *vice versa* there might be albuminuria without the occurrence of retinitis. In speaking of hypertonicity, which Dr. Bishop had emphasized in his paper in its relation to the question of arterial sclerosis, the speaker said that this question was not of recent origin, as high blood pressure had been recognized almost as long ago as the small red kidney of Bright. On the other hand, Dr. Bishop's presentation of the subject was worthy of our most careful consideration because of its great practical importance. In the light of our present knowledge, a more appropriate name for this form of kidney lesion would be chronic arterial nephritis, which it really was. It simply represented one feature of a general arterial sclerosis, and in dealing with the condition, removal of the kidney capsule, as had been recommended in some quarters, could not possibly do any good, however much might be claimed for the procedure in other conditions.

Dr. Robert C. Myles, in speaking of the nasal manifestations of arteriosclerosis, said that for many years he had occasionally met with a certain class of patients who gave a history of recurrent nosebleed, evidenced by very small clots, which, upon examination, were traced, not to erosions of the cartilaginous-septum, as was usually the case, but to the rupture of small blood-vessels on the turbinals or higher up in the nasal tract. At times, these small hemorrhagic extravasations became mixed with muco pus and degenerated, and gave rise to an offensive odor. The condition was usually seen in men who were high livers and of great nervous activity. It was invariably associated with evidences of a general high blood pressure, and at times was the forerunner of a fatal issue from arterial disease.

Dr. Adolf Meyer, in discussing arteriosclerosis of the nervous system, said that neurologists, instead of limiting themselves to the end results of arterial disorders, as they had long done, had at last reached the point where such disorders were studied during the process of their formation, or at least before the onset of the final results. In this field the work done by Fisher, Adler, Janeway, Brooks, Collins, and others might well be a matter of pride with the members of the profession in this city. It was scarcely a decade ago when apoplexy and senile dementia were practically the only neurological conditions thought of in connection with arteriosclerosis, but the more widespread influence of circulatory disorders upon the nervous system was now much more fully appreciated. In the timely recognition of these conditions, the easy methods for measuring the blood pressure had become a valuable routine, and the help of the ophthalmoscope would prove very valuable as the most direct means of inspection of a local vascular net.

Dr. Bishop, in closing, said it was only by recognizing hypertonia vasorum and its relation to the physiological tone of the voluntary muscles that we could in any way understand the beneficial effects of exercise, particularly the resistance exercises as advocated by Schott in the treatment of certain cardiac conditions dependent upon peripheral disease. The speaker said that when Schott's method was first

brought to his attention, he could not understand how the resistant movements had any particular value, and it was not until he had worked out the connection between the tone-maintaining influence of the voluntary muscles and the tone-maintaining influence of the circulatory system that it became clear to him. By these resistance exercises and by moderately severe out-of-door exercise the blood pressure was regulated. This fact he had frequently verified by clinical observation. Whether or not the structural changes in the blood-vessels could be removed he knew by actual observation that prolonged regulation of the circulation broke up the high pressure habit and led to a practical cure of hypertonia vasorum.

Dr. Marple, in reply to Dr. Wilcox, said that the term retinitis albuminurica was not used much by opthalmologists to-day. It was a term that had been introduced many decades ago, and had survived its usefulness. It had been well understood for a long time that it was really due to a vascular degeneration. Not infrequently we saw exquisite pictures of arteriosclerosis in the retina, and no albumin was found in the urine, yet time showed that we were dealing with a contracted kidney. In the retina we had a retinal sclerosis; in the kidney a renal sclerosis.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held February 14, 1907.

DR. GODFREY R. PISEK IN THE CHAIR.

A Case of Complete Alopecia Areata.—Dr. HENRY E. HALE presented a girl, fourteen years old, who noticed three years ago that the hair was falling out from the top of her head. This bald spot spread peripherally until the hair had all disappeared within four months. One month after the hair had disappeared from the scalp her eyebrows and eyelashes disappeared. These latter came and went a number of times Last November she noticed a return of her hair, which was very light and fuzzy, and was now coming back, although very slowly. There was no family history of syphilis, tuberculosis, or wasting diseases.

Dr. HENRY W. FRAUENTHAL believed congenital lues to be an etiological factor in this case.

A Case of Little's Disease.—Dr. WALTER B. JENNINGS presented a boy, six years old, with a condition the mother believed to be due to a difficult and protracted labor. When four years old he had an attack of spinal meningitis. He had been treated in Roosevelt Hospital for rachitis. He cried a great deal during the first year of life. The speaker had seen the child but once, and therefore the history obtained was very incomplete as yet.

Dr. JOHN HOWLAND believed the case to be, not one of Little's disease, but one of cranial hemorrhage occurring at birth. This same child had been presented to a medical society two years ago and then appeared as he now did. The mother had stated that after birth the child breathed badly, and artificial respiration had to be resorted to. He could not hold his head up when eight months old, and when eighteen months old he could not sit up without assistance. There was a free sensorium. The prognosis as regards the physical condition was bad, although his mental condition would always be good.

Dr. L. E. LA FETRA had seen the child when he had spinal meningitis, and at that time a great deal more attention was paid to the meningitis than to the previous history.

Dr. GODFREY R. PISEK said that the diagnosis of Little's disease could be thrown out in this case and without doubt the condition was due to a hemorrhage into the brain which occurred as the result of a prolonged and difficult labor.

A Case of Multiple Bone Tumors (Exostoses).—Dr. HENRY W. FRAUENTHAL presented a young girl who had a number of bone tumors scattered over the body, mostly affecting the flat and long bones, but not the skull.

Dr. SAMUEL LLOYD reported the case of a four-year-old child who fell upon both outstretched hands and developed what he then supposed to be a tuberculous dactylitis, starting in the metacarpal bones of the little finger on both sides. A few weeks later he was surprised to find both olecranons involved, and shortly after these tumors developed in other parts of the body; she had at least half a dozen of these exostoses. She finally died of sarcomatosis, with the characteristic cracked-eggshell tumors. They were not the characteristic osteosarcomata, but they spread and involved the different tissues. Many of these cases, such as presented by Dr. Frauenthal, he believed could be traced back to parentage.

A Case of Mycotic Carditis with Multiple Emboli and Extensive Gangrene of the Lower Extremities.—Dr. K. H. GOLDSTONE reported this case, which was mainly of interest on account of the severity or malignancy of the process, of its comparative rarity in childhood, and of its being somewhat atypical. The child was two and a half years old. The family history was negative. Since last May, when he had a second attack of pneumonia, he had not been well; he coughed, was pale, but the weight remained stationary. In November he suffered an attack of diphtheria, and since then the child was always ailing; his cough grew worse, the pallor increased, he played less but did not lose weight. Dr. Goldstone first saw the boy December 27 last. He had been acutely ill two days prior with cough, dyspnea, fever, and sweating. On examination he found a normal sized child, but pale, with an emphysematous chest, craniotabes, but without any marked bone lesions. There were sibilant and sonorous râles all over the chest; tubular breathing over the left apex and left lower lobe behind. There was emphysematous breathing. The heart was normal. The abdomen was slightly protuberant and soft. The liver and spleen were not felt. The temperature was 100.5°, pulse 110 and respiration 30. The skin was clean. The fingers were not clubbed. The throat was clear, the gums pale, and the child's demeanor was anxious. He believed the child to be suffering from a chronic or persistent bronchopneumonia, and for such treated him. On December 31 he found a purplish discoloration encircling both ankles, about three inches in width, not in separate spots, but one large area of staining. There was no swelling, but the joints were painful to the touch. There were no other spots of ecchymosis noted. The lungs then were clear, except for bronchial breathing behind. The heart was irregular, but there were no murmurs. The temperature was 101.5°, pulse 20 and respirations 30. On January 1 the ecchymoses had extended to middle of the leg and covered half the foot; these areas were swollen, exquisitely tender, but hard and cold. Heart was irregular, but there were no murmurs. On January 2 the ecchymoses had extended to the knees and covered the whole of the foot. The limbs were greatly swollen, cold and almost black. The scrotum and penis were swollen, purple and cold. On January 3 the child was semicomatose. The gangrene had extended half way up both thighs, which were black, cold and three or four times the size of a normal limb, with here and there blebs and areas of broken integument. Petechial spots about the size of a penny appeared over both cheeks. The scrotum was greatly enlarged, black and cold. The abdomen was relaxed. The temperature was 100.5°, pulse 160, respirations 60 The dyspnea was extreme. No urine had been passed for thirty-six hours, and the last specimen showed albumin and blood casts, but no free blood. On January 4 the condition remained about the same until 3 P.M., when the child went into a deep coma. There was no radial pulse. The breathing was of the Cheyne-Stokes type and, for the first time, a faint systolic murmur was heard at

the apex. The heart's action was irregular. Moist râles were heard over both chests. The mucous membranes were blanched, and petechial spots appeared on the eyelids. At 5 P.M. the child died peacefully. No autopsy was obtained and no bacteriological findings recorded, because of the objection of the family to permit even puncturing the skin.

Pigmented Spots in the Sacral Region of White and Negro Infants.—Dr. CHAS. HERRMAN read this paper. He said that these spots occurred in the dark-skinned races and had interested anthropologists for a very long time. In Japan, where 90 per cent. of the infants showed these spots, these macroscopical appearances were discovered over one hundred years ago. The first histological examinations of sections from the skin were made by Baetz in 1885. In 1903 Adachi published an exhaustive paper, in which the histological findings were very fully described. The conclusions were based upon the examination of a very large series of sections from Japanese infants and from apes. From his earlier investigations he came to the conclusion that the characteristic pigment cells which were found in the deeper layers of the corium in these cases, would be found also in white infants, even though they presented no visible spots. He therefore examined a series of sections from twenty-four white infants and found the characteristic pigment cells in ten. Upon the basis of these findings, he suggested that a careful examination of a large series of white infants would probably reveal the presence of visible spots in a few. Acting on this suggestion, a friend, Fujisawa, then attached to the clinic for diseases of children at Munich, found the spots in the fiftieth infant examined. In this he was fortunate, for the spots really occur in about 1 in 400. In 1906 Ebstein of Prague published a paper in which he stated that the spots had attracted his attention for many years. It was unfortunate that he had given to his paper the title "The Blue Spots in the Sacral Region and Other Mongolian Peculiarities in European Infants," for the peculiarities described were those of Mongolian imbecility. The sacral spots were to a certain degree characteristic of the Mongolian race insofar as they occurred in a very large percentage of their infants. The Mongolian imbeciles were so called by English writers from a certain superficial resemblance of their features to the Mongolian type. But they were not in the true sense of the word Mongolian. In this country, Ashmead, in 1905, published a paper on the spots as they occurred in dark-skinned races, but made no mention of their appearance in white infants. The spots occurred in a number of widely separated races in Japan and China, Java, Malay Peninsula, Hawaii, Greenland, etc., and were probably present in all dark-skinned races. They were also present in apes, and in them were of much larger size. During the last eighteen months Dr. Herrman had examined about 1,800 infants. The spots were present in five—that was, about 1 in 400. In all these the hair and iris were dark. In a series of negro infants examined in Dr. La Fetra's service at the Vanderbilt Clinic, the spots were present in 30 per cent. and were more distinct in those cases in which the parents were entirely dark skinned. The spots were most frequently found in the sacral, lumbar, and gluteal regions, and occasionally on the upper part of the back, shoulders, or the anterior surfaces of the extremities, but very rarely on the face; in one case they were found on the inner surface of the thigh. According to one author, they appeared as early as the fourth months of embryonal life. They were present at birth and sometimes became more distinct during the first few weeks; after that they grew fainter and disappeared at the end of the second year, and occasionally, when in an unusual situation, they persisted for a longer time. In white infants there was commonly a single spot; in negro infants several. Their size varied from a dime to the palm of the hand. They were circular, elliptical, or irregular in outline. In white infants they were of a grayish blue color, not unlike a tattoo mark; in negro infants there was often a more greenish tinge. They were not raised above the level of the skin, did not change in appearance on pressure, and the outline could sometimes be made more distinct by putting the skin on the stretch. There was no growth of hair on the surface and no indication of blood-vessels. On microscopical examination of the skin the coloring was found to be due to the presence in the deeper layers of the corium of large spindle or star shaped cells filled with dark brown pigment granules, not unlike those in the choroid. These cells were present in small numbers in about 40 per cent. of white infants, but only in one case in 400 were they in sufficiently large numbers and sufficiently closely grouped to produce a visible spot upon the skin. The spots were easily differentiated from hemorrhages and vascular or pigmented nevi by their characteristic situations, color, absence of hair, or blood-vessel formation, and by the fact that they were not raised above the surface, did not change on pressure, and tended to disappear at the end of the second year. The last point was worth noting, for as they occasionally occurred on the face the question of surgical removal might come up. Why the spots should occur with so much greater frequency in the sacral region was not known, but it was worth mentioning that this region was to a certain extent a point of least resistance, as was shown by the occurrence of developmental anomalies, spina bifida, dermoid cysts, and the other tumors. The fact that the spots were present in the infants of a large number of widely separated races, and the fact that the characteristic pigment cells were present on microscopical examinations in about 40 per cent. of white infants, would speak rather against their being a racial characteristic. The evidence in favor of their being considered stigmata of degeneration was also insufficient.

Dr. HERMAN SCHWARZ and Dr. GODFREY R. PISEK discussed the paper.

Dr. Charles Herrman closed the discussion.

The Surgical Treatment of Empyema.—Dr. SAMUEL LLOYD read this paper. It was now generally conceded that there was but one treatment for the cure of a purulent pleurisy, the immediate evacuation of the pus by some surgical procedure. It was a just criticism that these cases were not recognized earlier and not subjected to a more radical treatment as soon as the diagnosis was made, and this was frequently due to neglect of some of the diagnostic aids now available. Whenever a medical man had a case of pneumonia which did not resolve in the usual way, and particularly if there were evidences of pleuritic involvement, he should suspect a localized empyema, and he should take every possible means of determining whether or not pus was present and responsible for the continuance of the symptoms. Another condition for which these localized symptoms were mistaken was tuberculosis, and Dr. Lloyd had had fourteen or fifteen cases where the physicians had made the diagnosis of tuberculosis. Unless one had all the data necessary to make such a diagnosis definite, the question of empyema should be considered. One of the difficulties noticed was that clinicians depended upon needles of too small caliber to determine the presence or absence of pus in the pleural cavity. The pus in such a case was sometimes thick, filled with fibrin flakes, and would clog any needle except one of considerable size. The needle should be longer than the one usually employed. The syringe should be of considerable size, or, better yet, an aspirator should be employed. The *x*-ray was of value in making a diagnosis, and they had recently had two cases of interlobar pneumonia, and one of abscess of the lung, in which the diagnosis was made by means of the *x*-ray. He emphasized the fact that a fluid which macroscopically

might appear to be simply serous, microscopically might show the presence of a large number of pyogenic microorganisms, and these cases were just as much empyemas as those from which they withdrew the usual creamy pus, and should be operated upon as soon as the diagnosis was made. As to whether one should, at the time of making the exploratory puncture, take out more of the fluid than was necessary for pathological examination, or whether one should take out as much of the fluid as was possible, this to a certain extent depended upon the condition of the patient; experience and surgical judgment should be the controlling factors in determining whether an aspiration should be performed, or whether the operator should proceed at once to a more radical measure. In his series of cases he had but eighteen aspirations. Of these, two were cured and sixteen died. Dr. Lloyd said he favored the early aspiration of the pleural cavity. So soon as the physician was convinced or had a suspicion of fluid in the pleural cavity, if it was showing signs of becoming purulent, or if there was an unresolved pneumonia or tuberculosis, he would introduce a large sized exploring needle and withdraw a sufficient amount of fluid to submit to microscopical examination, and staining, for the presence of micrococci. If these were present, an aspirating syringe should be attached to the needle and all of the fluid withdrawn. Should severe attacks of coughing ensue, the withdrawal of the fluid should stop, and the opening be sealed. In doing this the whole chest should be prepared as though one intended doing a capital operation. If, in the course of the aspiration, it was determined that the lung was coming down and expanding to fill the chest cavity, the operator might be satisfied with the simple removal of the fluid. If, on the other hand, the lung did not expand, a more radical operation was indicated. In cases of emphysema, thoracotomy should be performed. In simple aspiration the best results were obtained in those cases where the pneumococcus was the cause. Thoracotomy should be performed in all cases where it was demonstrated that the fluid was purulent and the lung still capable of expansion. The question of resection of a rib must be determined, to a certain extent, by the condition of the fluid. If the microorganisms were not particularly virulent, and the adhesions of the lung were recent and not too dense to prevent expansion, and the intercostal space was sufficiently wide to allow the insertion of the drainage tube without compression, the probabilities were that the simple incision between the ribs would suffice. But, on the other hand, if these conditions did not exist, resection of the rib was essential. Dr. Lloyd had used incision and drainage only nineteen times; of these patients six were cured, two improved, and eleven died. Simple resection of the ribs had been performed forty-five times, with twelve patients cured, eighteen improved, and fifteen deaths. The problem was not simply one of the evacuation of the pus, but also of obliteration of the suppurating cavity. Dr. Lloyd's experience had convinced him that decortication of the lung as a method of closing old cavities, as suggested by Fowler and Delorme in 1893, had a comparatively small application. He had operated upon twenty cases by this method, in which seven were cured, five died, and five were not improved, and in three the operation had to be suspended because of hemorrhage. He had operated by the Schede-Estlander method five times, with one cure, three patients improved and one death. Dr. Lloyd believed that it was invariably better to make an elastic organ fill up the cavity which it should occupy than to attempt to make the inelastic wall fall in against the collapsed lung. Then followed a description of his method of operating; this will appear in the March *Annals of Surgery*. The anesthetic, in his opinion, should be ether, and the success of the operation depended very largely upon the proper regulation of the anesthetic. The patient should be completely anesthetized until the ribs had been resected and the operator was ready to incise the pleura. Then it was his rule to order that all anesthesia should cease at once, and before the pleura was opened. One reason for this was because occasionally they found that the fluid was evacuated very rapidly in spite of all attempts to control it, the intrapleural pressure being so great that it burst through the pleura as soon as the soft parts and the ribs had been removed; in these cases if the adhesions were recent the lung broke away from them, filled the pleural cavity, and at the same time a large amount of the anesthetic was inhaled. A more important reason for stopping the anesthetic was to allow the patient to recover gradually during the remainder of the manipulation. Sweeping the finger over the pleura caused the partially anesthetized patient to cough, and with each forced expiration the collapsed lung was seen to expand. This should be continued until the full expansion of the lung was obtained. Frequently it would be pushed out of the wound. Unless the patient was pretty well over the effects of the anesthesia, this procedure could not be carried out. There would be no response to pleural irritation under complete anesthesia, and consequently no cough. This was an essential part of the operation. The number of cases upon which his paper was based was 400. Of this number 171 were cured, 114 improved, and 115 died.

Dr. L. E. La Fetra did not agree with Dr. Lloyd in his statement that the empyema should be operated upon as soon as diagnosed. It had always seemed to him that the children did better if the operation was not done at the time of the beginning of the fever which started the empyema; it would be better to wait two or three days, when the temperature would be less. A small number of cases could be cured by aspiration alone, but this fact should not lead them to adopt this as a regular method of treatment for empyema. He thought that Dr. Lloyd's method of administering the anesthetic was a great advance in the management of these cases.

Dr. Herman Schwarz agreed with Dr. La Fetra in regard to the time for operating; not only did the empyema cause the temperature, but the presence of an active pneumonia as well, and children did not do so well in that phase of the disease. In Dr. Koplik's wards a rule they adhered to pretty closely was that a child under the age of two years did not require resection of a rib. They incised the intercostal space and drained the pus. They gave as little anesthetic as possible; in fact, after the skin and muscles were incised, the anesthetic was stopped. When the pleura was incised the child was practically out of the anesthetic.

Dr. Edward W. Peterson corroborated all that Dr. Lloyd had stated in his paper. The age of the child was an important prognostic factor. In children under the age of one year 75 per cent. recovered, no matter what treatment was adopted. The nature of the infection was another prognostic factor. If it was a pneumococcic infection, a large proportion of the cases would recover in recent cases by simple incision. The whole problem was in making the lung fit the cavity of the chest, or else making the chest cavity collapse to fit the lung.

Dr. Lloyd, in answer to Dr. La Fetra's criticism, said that one did not, as a rule, diagnose empyema quite so early, and when diagnosed the case had already passed the acute stage. He said he would not operate during the first two or three days of the disease. In some cases of empyema there would be present a pneumonia; if the case was left alone septic intoxication would rapidly become the prevailing symptom. It had been noticed that when such cases died it was from the empyema and not from the pneumonia. Consequently in his opinion it was more important to stop the intoxication than to increase the pneumonia by any manipulation of the lung, or the administration of an anesthetic. As a rule, the pneumonia met with was a resolving one. In many infants, because of the larger intercostal spaces, they drained better when

a simple thoracotomy was done; it was often not necessary to resect a rib. One of the superstitions in surgery was the insensibility of the pleura, and the reason why the pleura was supposed to be insensitive was because the patients were under the influence of an anesthetic. Let the patient be partially under an anesthetic, or completely out of it, then sweep your finger across the pleural surface, and there would result a cough, or a series of coughs. It had been demonstrated by Dr. Lloyd that a lung did not collapse, in spite of the fact that the opening in the chest wall was greater than the main bronchus. He related an experience he had in operating for an abscess in the lung, caused by a small tack being inhaled. He carried out the operation according to the rules he employed in operating for empyema, with the result that when the patient came out of the anesthetic, instead of a collapsed lung there followed an expanded one, and he could not then find the small abscess. In order to get expansion of the lung, the adhesions must first be broken up; then the pleura should be irritated in the partially anesthetized patient, who would begin to cough; with this cough there would be an attempt to force a way through a partially closed glottis. With each expiration, but not with each inspiration, the lung would come down. The point he wished particularly to emphasize was the mechanical part of this expansion of the lung.

Books Received.

While the MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

TEXT-BOOK OF ANATOMY FOR NURSES. By ELIZABETH R. BUNDY, M.D. 8vo, 252 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1.75.

WOMAN. By MYER SOLIS-COHEN, A.B., M.D. 8vo, 469 pages, illustrated, muslin. The John C. Winston Co., Philadelphia.

THE PRACTICAL MEDICINE SERIES. Under editorial charge of Gustavus P. Head, M.D. Volume X, Series 1906, 12mo, 250 pages, illustrated, muslin. The Year Book Publishers, Chicago.

PRACTICAL DIETETICS. By ALIDA FRANCES PATTEE. Fourth edition, 12mo, 359 pages, illustrated, muslin. A. F. Pattee, Publisher.

PLASTER OF PARIS AND HOW TO USE IT. By MARTIN W. WARF, M.D. 8vo, 88 pages, illustrated, muslin. Surgery Publishing Co.

THE CHEMICAL INVESTIGATION OF GASTRIC AND INTESTINAL DISEASES. By VAUGHAN HARLEY, M.D., Edin., and FRANCIS W. GOODBODY, M.D., Dubl. 8vo, 261 pages, muslin. Longmans, Green & Co., New York.

ORGANIC AND FUNCTIONAL NERVOUS DISEASES. By M. ALLEN STARR, M.D., Ph.D., LL.D., Sc.D. Second edition, thoroughly revised, 8vo, 816 pages, illustrated, muslin. Lea Brothers & Co., New York.

THE PRACTICE OF OBSTETRICS. By American Authors. 8vo, 1,807 pages, illustrated, muslin. Lea Brothers & Co., New York.

TRANSACTIONS OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY. Forty-second annual meeting, Vol. XI, Part I, 8vo, 247 pages, illustrated, paper. Published by the Society, Hartford.

DIAGNOSE UND THERAPIE DER ANÄMIEN. Bearbeitet von Dr. JOSEPH ARNETH. 4to, 208 pages, paper. A Stuber's Verlag, Wurzburg.

EXPERIMENTAL ZOOLOGY. By THOMAS HUNT MORGAN. 8vo, 454 pages, illustrated, muslin. The Macmillan Co., New York. Price, $2.75 net.

INTERNATIONAL CLINICS. Edited by A. O. J. KELLY, A.M., M.D. 8vo, 322 pages, illustrated, muslin, Volume IV, 16th Series, 1906. J. B. Lippincott Co., Philadelphia.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume XXIV. Edited by RICHARD H. HARTE, M.D. 8vo, 501 pages, illustrated, muslin. William J. Dornan, Philadelphia.

MANUEL DE GYNÉCOLOGIE PRATIQUE. Par J. BAROZZI. 12mo, 813 pages, illustrated, muslin. Vigot Frères, Editeurs, Paris.

Surgical Suggestions.

Injuries About the Elbow Joint.—When the *x*-ray is not available the following plan of procedure, suggested by Gerster and described by Dawbarn, may prove of service in facilitating the diagnosis of injuries about the elbow joint when there is much swelling: The patient having been anesthetized, an Esmarch elastic bandage is slowly and firmly applied from the hand up the forearm and over the elbow to the arm-pit. This is left on for about fifteen minutes and then removed from below upward, the final turns upon the upper arm being allowed to remain. The removal of the edema in this manner permits of the recognition of a fracture or dislocation, and this having been accomplished, the upper turns of the bandage are removed.—*International Journal of Surgery.*

Writers' Cramp.—The following plan was successfully used by Hartenberg to cure a case of writers' cramp: The patient, who had suffered from the condition for about fifteen years, was instructed to apply a rubber tube firmly around the biceps for twenty minutes at a time every morning and evening. At the end of a few weeks the patient had almost entirely recovered.—*Archives de Neurologie.*

Indications for Tracheotomy.—James Berry gives the following advice in regard to determining whether or not tracheotomy is necessary. Two points that guide in the decision are the cyanosis and the recession of the chest-walls. Cyanosis alone is not sufficient indication for the operation. It may be due not so much to laryngeal obstruction as to obstruction within the chest itself. In diphtheria, for example, there may be much blueness of the face from pneumonia even though the larynx be quite free from obstruction. Tracheotomy in such a case as this would be worse than useless. Recession of the chest-wall is a very valuable indication for the operation. When you see the supraclavicular fossæ receding deeply at every attempted inspiration, when the lower ribs and the epigastrium are sucked violently inwards each time the child tries to breathe, then the dyspnea is due to an obstruction in or near the larynx, and relief to the dyspnea is urgently demanded. The dyspnea being severe and progressive, dyspnea and the recession of the chest-walls indicating laryngeal obstruction, tracheotomy is indicated, if intubation cannot be performed.—*The Clinical Journal.*

Rectal Feeding.—Becker proceeds in this way: The number of meals in twenty-four hours should not exceed two, one meal in the morning and one late at night. One hour before the morning meal a suppository of opium and belladonna is introduced, and then an hour later the rectum is carefully cleansed with lukewarm water to which some salt is added—it need not be physiological salt solution. The temperature of the cleansing water should range—like the other things introduced into the rectum—from 42 to 45 degrees centigrade. It should be introduced into the rectum with moderate force in moderate quantities, say 150 c.c. at a time, and the tube should remain in the rectum for the return of the soiled water. A good sized rectal tube should be used for the cleansing, and the tube should have a rather wide lumen, and should not be too flabby. The introduction and the letting out of the water are repeated until the water returns absolutely clean. Then the tube is turned and pushed in and out several times to ascertain and insure that all the water, or at least as much as possible, has left the colon and rectum. Now the patient is given a short time of rest, say fifteen or twenty minutes, after which the rectal meal is introduced. The same rectal tube is used and is introduced about 15 c.m., and then the meal, 200 c.c., at most 250 c.c., is slowly introduced at a temperature of from 42° to 45°.—*Wisconsin Medical Journal.*

Poison Ivy.—Since there is apparently much doubt as to the best method of treatment of the dermatitis of rhus poisoning, the information may be of interest that in the powdered crude sulphur of the stores we possess a remedy everywhere obtainable and usually promptly successful. Its application is best made by mixing it with a little water, and perhaps a few drops of glycerin, this to be rubbed over the affected area two or three times a day. Next best is its use mixed with just sufficient lard to bind it. As to the time of activity of the poison I remember a patient who infected himself in early spring before appearance of the leaves by tearing out roots in a clearing for garden culture.

C. G. AMENDE, M.D.

New Instruments.

A THERMESTHESIOMETER AND A POCKET ESTHESIOMETER

By FREDERICK PETERSON, M.D.,

NEW YORK.

THE temperature sense is generally tested by the application of test tubes containing hot and cold water, and such a method is, as a rule, sufficiently accurate for the practical and gross determination

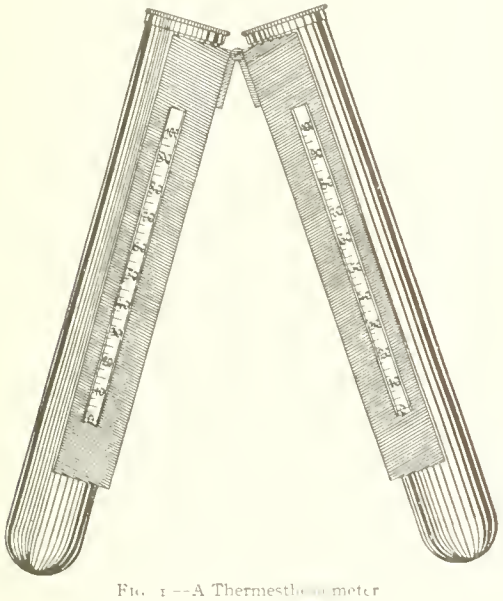


FIG. 1.—A Thermesthesiometer.

of the loss of this sense in, for instance, a case of syringomyelia. But I have long felt that some more precise instrument should be used for this purpose, since the more we study the skin and its innervation the more important does it become from the neurological standpoint. I need only allude to the fact that at one time we spoke of general sensibility as one of the five senses, whereas now we know that there are four or five, perhaps more, skin-senses, such as touch, heat, cold, pain, not to speak of other forms of general sensation, like pressure, muscle-sense, space-sense, tickling, etc. Now we have, too, a new and wonderful relation of the skin to psychic processes, as revealed by the electric psychometer; and we have the new studies of Head, Rivers, and Sherren on the various avenues by which the epicritic and protopathic systems of sensory fibers reach the central nervous system. In studying the temperature sense it is found that certain points on the skin feel cold and others warm impressions, that these points are separate, and that they are unequally distributed over the surface of the body. For instance, on the legs one finds areas of several square centimeters where neither cold nor heat is perceived. Furthermore, cold points are in general more numerous over the body than warm points. Another interesting phenomenon is that if a cold point be touched by an object heated above 45° C. a sensation of cold is produced. To the end, therefore, that more exact measurements of the temperature sense may be made, I have devised the thermesthesiometer shown in the illustration. It consists of two metal test tubes with covers, united at one end by a hinge, so that it may be opened like a compass when in use, in order to insulate each tube from the other, and closed when replaced in its case. Each tube has attached to it a thermometer inclosed in wood, but in contact with the metal of the tube on one side, so that the temperature of each may be accurately known at any time. The instrument has been constructed in the best manner with carefully tested thermometers by M. Sendtner, maker of instruments of precision, Schillerstrasse 22, Munich, Germany, whose American agent is Eimer & Amend, New York.

In addition to the thermesthesiometer, Sendtner has constructed for me the convenient pocket esthesiometer shown in the accompanying illustration, with a needle, blunt point, and camel's hair brush which slide back into the handle on the principle of some of the metal lead-pencils.

4 WEST FIFTIETH STREET.

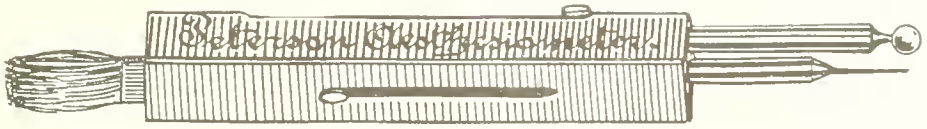


FIG. 2.—Pocket Esthesiometer.

Therapeutic Hints.

Sore Nipples.—These may be painted with a 4 per cent. solution of silver nitrate, or an ointment having the following composition may be applied:

℞ Bals. Peruvian 3i
Ungt. tq. rosæ.
Lanolini ..... āā ℥ss

Epidemic Influenza.—

℞ Phenacetine ..... gr. iii
Quin. sulphat ..... gr. iv
Pulv. ipecac et opii ..... gr. ss
Ext. aconiti ..... gr. ⅛

M. et ft. pil. No. 1. S.: One pill four times a day.

Migraine.—Carron de la Carrière recommends pills of extract of Indian hemp, each containing 0.015 of the drug. These are given every night for thirty days, at the end of which time, if no improvement has resulted, the dose is increased to two pills. The remedy may be used over long periods without danger. During acute attacks the forehead is rubbed with the following:

℞ Menthol 5.0
Chloroform 5.0
Methyl salicylate 5.0
Lanolin 30.0

—*Presse Médicale.*

Scabies.—

℞ Sodii carbonat ..... ℥i
Sulphuris ..... ℥iii
Glycerini ..... ℥vi
Gum. tragacanth ..... gr. xv

The patient rubs himself with ordinary soap for half an hour, then takes a bath, followed by brisk friction with the above mixture. The following day and for two or three days afterward the patient takes a starch bath (one pound of starch for each bath), and powders himself with the same substance.—*Medical Press.*

Opium Habit.—For the mental and physical depression Ringer recommends:

℞ Tr. capsici ..... ℥iv
Pot. bromid ..... ℥iv
Spt. ammon. aromat ..... ℥iiiss
Aq. camphoræ ..... ℥vi

Sig.: A dessertspoonful several times daily as required.

Menorrhagia.—

℞ Acid. gallici ..... ℥ss
Acid. sulphurici dil.
Tr. opii deod ..... āā ℥i
Infus. rosæ comp ..... ℥iv

Sig.: A tablespoonful every four hours.

—BARTHOLOW.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

UNIVERSITY OF THE STATE OF NEW YORK.

January 29-February 1, 1907.

The candidate is required to answer any 10 of the questions on each paper, but no more.

ANATOMY.

1. Locate and define (a) odontoblasts, (b) the ductus venosus, (c) the vesiculæ seminales.
2. Describe the arrangement of the bones of the ear.
3. Mention and describe the various forms of epithelial cells.
4. Describe microscopically (a) bone, (b) cartilage.
5. What is unstriped muscular tiber and where in the body is it found?
6. Describe the popliteal artery and give its branches.
7. What are ductless glands? Name the important ductless glands.
8. Describe a spinal nerve.
9. Give the minute anatomy of the skin.
10. Describe the appendix vermiformis and give its topography.
11. Give the origin, insertion, action and nerve supply of *one* of the following muscles: pectoralis major, levator ani, internal oblique.
12. Describe the superior petrosal sinus.
13. Give the gross anatomy of the tongue.
14. Describe the ovaries and give their relations.
15. What anatomic parts are normally found in the left hypochondriac region?

PHYSIOLOGY AND HYGIENE.

1. Describe bones as to varieties and functions. Give the general structure of bone.
2. What constitutes the lymphatic system and what forces are concerned in the circulation of the lymph?
3. Describe the controlling forces that regulate the circulation of the blood in (a) the arteries, (b) the capillaries, (c) the veins.
4. State the functions of the medulla oblongata.
5. Give the physiological mechanism of the valves of the heart.
6. Compare expired air with inspired air. What is (a) external respiration, (b) internal respiration?
7. Describe micturition. What mechanism serves to keep the urine in the bladder until it is voluntarily voided?
8. State where in the body *each* of the following substances is found and mention the special purpose served by each: (a) ptyalin, (b) pepsin, (c) glycogen, (d) trypsin.
9. Give all the causes of (a) contraction of the pupil, (b) dilatation of the pupil.
10. Mention the functions of the facial nerve and state the effects of its complete paralysis.
11. What kinds of contamination does the presence of *each* of the following substances in drinking water indicate: (a) nitrites and nitrates, (b) excess of chlorin? Give the causes of hardness of water.
12. Describe the best method of constructing a house drain.
13. What special measures of prophylaxis may be best employed against (a) typhoid fever, (b) yellow fever, (c) malarial fevers, (d) rabies?
14. Describe the best method of heating and ventilating a hospital ward.
15. How may milk be adulterated and how may it be contaminated with infectious elements?

CHEMISTRY.

1. Define destructive distillation, smelting, normal salts.
2. Name *two* monads, *two* dyads and *two* triads. Illustrate each in a graphic formula.
3. Describe the metric system of weights and measures and give the practical equivalent of each unit in Troy weight.
4. Give the uses and the chemical properties of phosphorus and mention any peculiarity of phosphorus in its relation to oxygen.
5. What constitutes hard water? How may the presence of albuminoid matter in water be recognized?
6. Give the chemical properties of ozone.
7. Name 10 principal elements chiefly concerned in the chemical changes taking place in life and describe the preparation of *one* of them.
8. Describe the preparation and give the properties of chlorin. On what important chemical feature does the useful application of chlorin depend?
9. Give the percentage composition of normal urine as to water, urea, uric acid, organic matter, and sodium chlorid.
10. What is electrolysis? State the ionic theory.
11. Give the chemical features of disinfection.
12. Mention the general properties of organic compounds.
13. What are hydrocarbons? Give the name and the formula of one important hydrocarbon.
14. Describe a method (laboratory or otherwise) of making alcohol (ethyl). What is the percentage of alcohol in (a) porter, (b) port wine, (c) champagne?
15. Describe the preparation and state the uses of cyanogen.

SURGERY.

1. Give the symptoms and the treatment of actinomycosis.
2. Mention the most common sites of epitheliomata.
3. Mention *three* operations on the stomach. Describe *one* of these operations and give the indications for its performance.
4. Give a classification of complete fracture according to (a) line of separation, (b) mode of production, (c) number of fractures present.
5. What are the immediate and the remote effects of a fracture-dislocation in the lower dorsal region?
6. What tumors occur in bone?
7. Give the treatment of hip joint disease in children.
8. Give the predisposing and the exciting causes of aneurysm.
9. What operative measures are applicable in the treatment of stone in the female bladder?
10. What is meant by secondary suppurative inflammation? Give the most frequent sources of secondary suppurative inflammation of the abdominal wall.
11. Give the treatment of an injury of the rectum involving the peritoneum.
12. What are the specific diseases of the vulva? Describe *one* of these diseases and give treatment.
13. Describe convergent strabismus and give its surgical treatment.
14. Give the symptoms of syphilitic rhinitis in the newborn.
15. Describe the pediculus pubis and mention the symptoms to which it gives rise. Give treatment.

OBSTETRICS.

1. Give a brief description of the physiology of reproduction.
2. Describe the liquor amnii and state its functions.
3. What pathological conditions of the internal organs of generation are liable to cause abortion? Give reasons.
4. Give the causes and the treatment of umbilical hemorrhage in the newborn.
5. Give the prognosis and the management of a face presentation.
6. Describe the effects of syphilitic infection on childbearing.
7. Mention the factors that affirmatively determine pregnancy between the third and the fourth month.
8. What is understood by premature artificial delivery? Mention the conditions that justify this procedure.
9. Give the treatment of retrodeviation of the uterus when it complicates pregnancy.
10. Give the technique of catheterization of the female.
11. Make a diagnosis of tubal pregnancy. State the dangers of tubal pregnancy.
12. Describe phlegmasia alba dolens and give the treatment.
13. Give the symptoms of pelvic abscess. Through what channels may pelvic abscesses drain?
14. Define vaginismus. Give the etiology and the treatment of vaginismus.
15. Give a technical description of the operation of craniotomy.

It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any textbook on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.

PATHOLOGY AND DIAGNOSIS.

1. What pathological changes occur in (a) tumefaction, (b) hypertrophy, (c) induration, (d) calcification?
2. Describe the bacillus of tuberculosis and give a method of demonstrating the same.
3. Mention some of the structural tissue changes caused by pyrexia.
4. What changes occur in the red blood corpuscles in progressive pernicious anemia?
5. Describe a method of making a bacteriological diagnosis in diphtheritis.
6. Under what pathological conditions may casts be found in the urine? Describe *two* varieties of casts.
7. Give the macroscopic and the microscopic appearance of pus.
8. Describe the skin lesions occurring in psoriasis.
9. Mention the pathological conditions that may arise from the presence of calculi in the gall-bladder.
10. Mention the changes that may occur in the nervous system as a result of syphilis.
11. What muscles are involved in the paralysis following lesions of the musculospiral nerve?
12. Describe a test meal and give the method of its use.
13. Describe the onset and the course of ophthalmia neonatorum.
14. Give the incubation period of (a) scarlatina, (b) measles, (c) variola, (d) varicella, (e) rötheln. Give the clinical history of *one* of these diseases.
15. Mention *three* pathological conditions the local symptoms of which are manifested in the epigastric region.

THERAPEUTICS, PRACTICE, AND MATERIA MEDICA.

Questions prepared by the Board of Examiners representing the Medical Society of the State of New York:

1. Give the therapeutic uses of lobelia.
2. Give the physical signs of aortic obstructive lesions of the heart.
3. Give the physiological action of digitalis on the heart and on the kidneys.
4. Define and describe iodism.
5. Give the treatment of acute lobar pneumonitis.
6. Mention the official preparation of strophanthus. State the dose of this preparation and describe its physiological effects.
7. Give the therapeutic uses of sanguinaria.
8. Give the diagnosis and the treatment of gonorrheal rheumatism.
9. Mention *five* official preparations of senna and state the dose of each.
10. Describe the therapeutic uses of sulphur.
11. State the period of incubation in hydrophobia. Describe the prophylaxis in hydrophobia.
12. What preparation of apomorphin is used medicinally? Mention the doses of this preparation and state for what it is employed.
13. Mention the class of acids administered to acidify alkaline urine.
14. Give the signs and the symptoms of intestinal perforation in typhoid fever.
15. State the dose of (a) liquor potassii arsenitis, (b) liquor sodii arsenatis.

ANSWERS TO STATE BOARD EXAMINING QUESTIONS.

UNIVERSITY OF THE STATE OF NEW YORK.

January 29 to February 1, 1907.

PHYSIOLOGY AND HYGIENE.

1. Bones are described as: (1) *Long bones*, consisting of a shaft (which is hollow), and two extremities; examples, humerus, tibia, metacarpals. (2) *Short bones*, which are compressed, short and spongy in structure, except on their surfaces; examples, the bones of the carpus and tarsus. (3) *Flat bones*, consisting of broad, flat plates of bone inclosing some cancellous tissue; examples, parietal, scapula. (4) *Irregular bones*, consisting of compact tissue externally, and cancellous tissue internally, are such as cannot be grouped under one of the preceding divisions; examples, vertebræ, ethmoid.

The *functions* of bones are: (1) for protection (chiefly the flat bones); (2) for muscular attachments (chiefly the long bones); (3) for support of the body (chiefly the long bones); (4) for locomotion and motion (chiefly the long bones); (5) for strength (chiefly the short bones); (6) to maintain the shape and outline of the body.

2. The lymphatic system consists of: lymphatic glands, lymph vessels, perivascular lymph spaces, the lymph canalicular system, the pericardial, pleural, peritoneal, and synovial cavities, and the lacteals.

The forces concerned in the circulation of the lymph are: (1) The pressure of the blood in the blood-vessels; (2) thoracic aspiration; (3) muscular contractions of the voluntary muscles; (4) contractions of the intestine; (5) the action of the valves in the lacteals and lymphatics.

3. The circulation of the blood is regulated in (a) *the arteries*, by: (1) the elasticity and tone of the arteries, (2) the force and frequency of the cardiac contractions, (3) the resistance in the capillaries; (b) in the *capillaries* it is regulated by: (1) the action of the heart, (2) the action of the arteries; (c) in the *veins* it is regulated by: (1) the action of the heart, (2) aspiration of the thorax, (3) the contraction of the muscles, and (4) slightly by the valves in the veins.

4. The functions of the medulla oblongata are: (1) It is a conductor of nervous impulses or impressions from the cord to the cerebrum, from the brain to the spinal cord, also of coordinating impulses from the cerebellum to the cord; (2) it contains collections of gray matter which serve as special nerve centers for the following functions or actions: respiration, salivary secretion, mastication, sucking, deglutition, speech production, facial expression; it also contains the cardiac and vasomotor centers.

6.

	Expired Air.	Inspired Air.
Oxygen	16.6 per cent.	21 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	4.4 per cent	0.04 per cent
Other gases	Often present.	Rare.
Watery vapor	Saturated.	Variable.
Temperature	That of body.	Variable.
Volume	Diminished.	Varies.
Bacteria	None.	Always present
Dust	None.	Always present.

(a) External respiration is the interchange that takes place between the blood and the gases in the lungs; (b) internal respiration is the interchange that takes place between the blood and the tissues of the body.

7. The urine is kept in the bladder by the sphincter vesicæ and by the muscular and elastic fibers of the urethra.

8. (a) *Ptyalin* is found in the saliva; it changes starch into dextrin and sugar; (b) *pepsin* is found in the gastric juice; it changes proteids into proteoses and peptones in an acid medium; (c) *glycogen* is found chiefly in the liver and the muscles, also in the white blood corpuscles, and in the placenta; (d) *trypsin* is found in the pancreatic juice; it changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; it acts in an alkaline medium.

9. (a) The pupil *contracts*: (1) when stimulated by light; (2) on stimulation of the third nerve; (3) on paralysis of the cervical sympathetic; (4) when the eye is accommodated for near objects; (5) during sleep; (6) through the action of certain drugs, called myotics, such as opium, and the local influence of physostigmine; (7) when the eyeball is turned inwards. (b) The pupil *dilates*: (1) on removal of the stimulus of light; (2) on paralysis of the third nerve; (3) on stimulation of the cervical sympathetic; (4) when the eye accommodates for distant objects; (5) in deep chloroform narcosis; (6) in dyspnea; (7) under the influence of certain drugs, called mydriatics, as atropine; (8) under the influence of pain, or fear.

10. The facial nerve is the motor nerve of the muscles of expression, also of the platysma and the buccinator; it also supplies the muscles of the external ear, the stylohyoid, and the posterior belly of the digastric. Through the chorda tympani it is a nerve of taste and a vasodilator of the vessels of the submaxillary and sublingual glands.

"When it is paralyzed, the muscles of the face being all powerless, the countenance acquires on the paralyzed side a characteristic, vacant look, from the absence of all expression; the angle of the mouth is lower, and the paralyzed half of the mouth looks longer than that on the other side; the eye has an unmeaning stare, owing to the paralysis of the orbicularis palpebrarum. All these peculiarities increase the longer the paralysis lasts, and their appearance is exaggerated when at any time the muscles of the opposite side of the face are made active in any expression, or in any of their ordinary functions. In an attempt to blow or whistle, one side of the mouth and cheeks acts properly, but the other side is motionless, or flaps loosely at the impulse of the expired air; so, in trying to suck, one side only of the mouth acts; in feeding, the lips and cheek are powerless, and, on account of paralysis of the buccinator muscle, food lodges between the cheek and gums." (Kirkes' *Physiology*.)

11. (a) The presence of nitrates and nitrites denotes contamination from nitrogenous organic matter of animal origin; (b) the presence of excess of chlorin denotes organic impurity of animal origin.

Hardness of water is caused by the salts of calcium and magnesium; usually the bicarbonate or sulphate, but sometimes the chloride, phosphate, or nitrate.

15. Milk may be adulterated by the addition of water (clean or dirty), by skimming, by the addition of coloring matters or preservatives, and by the addition of solid substances, such as sugar, flour, etc.

Milk may be contaminated with infectious elements by being obtained from infected cows, by being diluted with water containing disease germs, by the cans, containers, vessels, etc., being contaminated with dirty water; through carelessness in handling by persons who are infected.

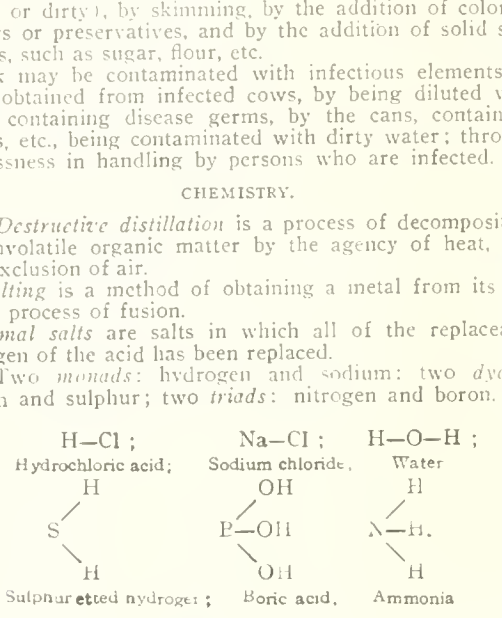
CHEMISTRY.

1. *Destructive distillation* is a process of decomposition of nonvolatile organic matter by the agency of heat, and with exclusion of air.

Smelting is a method of obtaining a metal from its ore by the process of fusion.

Normal salts are salts in which all of the replaceable hydrogen of the acid has been replaced.

2. Two *monads*: hydrogen and sodium: two *dyads*: oxygen and sulphur; two *triads*: nitrogen and boron.



4. The chief uses of phosphorus are in making matches, rat paste, and phosphor bronze. It is also used in medicine in cases of osteomalacia, rickets, and as a nerve tonic.

The chemical properties of phosphorus are: chiefly its readiness to enter into combination with oxygen; it is a reducing agent; it is not acted on by HCl or by cold H_2SO_4; it is oxidized by hot H_2SO_4, and by HNO_3.

5. Hard water is a water containing an excess of calcareous salt. (See above, Physiology, 11.)

6. Ozone is a strong oxidizing agent; it oxidizes nearly all metals in the presence of moisture; it decolorizes indigo and other pigments of organic nature; it is but slightly soluble in water.

7. Carbon, hydrogen, nitrogen, oxygen, iron, chlorine, sodium, potassium, calcium, sulphur.

Hydrogen is prepared by the action of zinc on dilute sulphuric acid:

$$Zn+H_2SO_4=ZnSO_4+H_2$$

8. Chlorine is prepared by the action of hydrochloric acid on manganese dioxide:

$$4HCl+MnO_2=MnCl_2+2H_2O+Cl_2$$

It is an active disinfecting and bleaching agent in the presence of moisture. It acts by decomposing the water, the nascent oxygen thus liberated attacks the odorous or coloring substance. Chlorine will not bleach a dry substance.

9. Water, 95.00 per cent.; urea, 2.80 per cent.; uric acid, 0.06 per cent.; organic matter, 3.75 per cent.; sodium chloride, 0.80 per cent.

10. Electrolysis is the process of electrical conduction accompanied by the separation of the constituents of the electrolyte; or the decomposition of a chemical compound by passing an electric current through it. The primary products of electrolysis are called ions; those which separate at the positive electrode or anode are called anions; those which separate at the negative electrode or cathode are called cations. A solution of sodium chloride contains NaCl, but it also contains the cation Na and the anion Cl; and the action of the electric current is to separate these ions (which are already liberated) at the respective electrodes. It is supposed that the hydrogen and metallic ions are charged with positive electricity, and the hydroxyl and acid-residue ions are charged with negative electricity; hence the former are attracted to the cathode and the latter to the anode.

11. Chemical disinfectants act in virtue of their power to form definite chemical compounds with the bacteria which are responsible for the infection. The bacteria are thus rendered harmless. In order to accomplish this the disinfectant must come in direct contact with the bacteria, and in the combination thus effected both bacteria and disinfectant change their chemical properties.

12. Organic compounds may be either gases, liquids, or solids (either crystalline or amorphous); may be either volatile or nonvolatile; may be either colorless, tasteless, odorless, or have any variety of these qualities; they are changed by heat and chemical reagents with a readiness which is directly proportionate to their complexity.

13. Hydrocarbons are chemical compounds consisting of carbon and hydrogen only. *Example*, Methane, CH_4.

14. Ethyl alcohol can be formed synthetically from calcium carbide, water, and hydrogen. Thus (1) calcium carbide and water form acetylene:

$$CaC_2+2H_2O=CaH_2O_2+C_2H_2$$

(2) Acetylene vapor and water form aldehyde:

$$C_2H_2+H_2O=CH_3.CHO.$$

(3) Aldehyde and nascent hydrogen form alcohol:

$$CH_3.CHO+H_2=CH_3.CH_2OH$$

(a) Porter, 4 to 6 per cent.; (b) port wine, 19 to 25 per cent.; (c) champagne, 8 to 12 per cent.

15. Cyanogen is prepared by heating mercuric cyanid:

$$2\ Hg\ (CN)_2 = 2\ Hg + 2\ (CN)_2$$

SURGERY.

2. On the skin, mucous membranes, or at the junction of skin and mucous surfaces; lip, ala of nose, glans penis, cervix uteri, eyelid. The cylindrical celled epithelioma is more likely to occur in the stomach, the rectum, and uterus.

3. Gastrotomy, gastrostomy, gastrorrhaphy.

The *indications for gastrotomy* are: In the removal of foreign bodies from the stomach, for exploration, for the treatment of various conditions existing in the stomach, pylorus, or lower end of the esophagus (such as ulcer, stricture, etc.).

4. (a) Transverse, oblique, spiral, longitudinal, dentate, T-shaped, V-shaped, and comminuted. (b) By external violence, either direct or indirect; by muscular contraction; spontaneous. (c) Single and multiple; this latter may be double, triple, or quadruple, etc.

5. "Paraplegia below the part injured is present in most cases, and with it some amount of general shock. When the cord is disintegrated or divided, symptoms of spinal myelitis rapidly follow, and a fatal issue often occurs at an early date from toxemia following septic cystitis or sloughing of the nates. The special phenomena of paraplegia in the region referred to are:—complete paralysis of the muscles of both limbs, including those passing to them from the trunk; total anesthesia of the legs, gluteal and perineal regions, and possibly the lower part of the abdomen; whilst, if the vesical centers are destroyed, there is total paralysis of the bladder, with relaxation of the sphincter, dribbling of urine, which early becomes ammoniacal, and cystitis, due to trophic changes; if the centers escape, retention with overflow is the usual result; the rectum and sphincter ani are paralyzed, causing incontinence of feces, the passage of which is unrecognized from the anesthetic condition of the anus."—(Rose and Carless' *Manual of Surgery*.)

6. Sarcomata, chondromata, osteomata, carcinomata, fibromata, myxomata, angiomata, myelomata.

8. *Predisposing causes*: atheroma, syphilis, old age, intemperance, undue exertion, embolism. *Exciting causes:* injury to an artery, increased blood pressure (either from increased heart action or from obstruction beyond the aneurysm), blows, strains, sudden exertion.

9. Litholapaxy, suprapubic lithomy, vaginal lithotomy, lithotrity (and extraction with forceps or by mere manipulation).

11. Laparotomy should be performed at once, the abdominal cavity must be thoroughly cleansed out, and particular attention be paid to asepsis, disinfection, and drainage.

14. Coryza or "snuffles," with a thin, watery discharge which does not readily respond to treatment, and which causes excoriation; fissured lips, "rhagades," and a hoarse cry.

15. The pediculi pubis are the shortest of the pediculi, but are broader and flatter than the pediculi capitis. The head is fiddle-shaped, and they bear a general resemblance to a miniature tortoise or crab. They have six legs; the two front pairs are used for walking, and with the claspers on the hinder legs they stick tight to the pubic hair, and generally have the head buried in the follicular orifice. The nits are situated quite near the base of the hairs.

The *symptoms* are: itching in the pubic and perineal regions, excoriations from scratching, hemorrhagic puncta or papules.

Treatment: The pubic region should be shaved, washed with soap and water twice a day, either mercurial ointment should be rubbed in, or lotion of corrosive sublimate should be applied.

OBSTETRICS.

2. The liquor amnii is the fluid contained in the amniotic sac; it is alkaline in reaction, has a specific gravity of about 1.001 to 1.008, its quantity is variable, but is generally about two pints. It consists chiefly of water, but contains small

amounts of albumin, epithelial cells, urea, phosphates, chlorides, etc. Its source is unsettled.

Functions: (a) *During Pregnancy*: (1) As a protection to the fetus against pressure and shocks from without. (2) As a protection to the uterus from excessive fetal movements. (3) It distends the uterus, and thus allows for the growth and movements of the fetus. (4) It receives the excretions of the fetus. (5) It surrounds the fetus with a medium of equable temperature, and serves to prevent loss of heat. (6) It prevents the formation of adhesions between the fetus and the walls of the amniotic sac. (7) It has been supposed, by some, to afford some slight nutrition to the fetus.

(b) *During Labor*: It acts as a fluid wedge, and dilates the os uteri and the cervix; it also slightly lubricates the parts.

3. Malformations, and displacements of the uterus (chiefly retroversion, and prolapse); inflammations of the uterus or appendages (metritis, endometritis, salpingitis, ovaritis); adherent uterus with perimetritis; undue rigidity of the uterine muscles; extreme laceration, erosion, or ulceration of the cervix; tumors of the uterus; pelvic congestion, acute or chronic.

4. If primary, it is due to slipping of the ligature or injury to the cord; and the cord should be re-ligated in a proper manner. Secondary hemorrhage is due to either: hemorrhagic diathesis, deficient coagulability of the blood, or loosening or tearing of the normal coagulum from the hypogastric arteries. *Treatment*: compression with hare-lip pins, and application around these of a figure-of-eight ligature.

9. The patient (the bowels and bladder having been emptied) should be placed in the knee-chest position, and the uterus replaced by manual pressure. If this proves unsuccessful, a repositor may be used; and the procedure may be facilitated by drawing down the cervix with a volsellum forceps. If the uterus is bound down by adhesions, tampons soaked in ichthyol and glycerin should be placed in the posterior cul-de-sac. After reposition, the uterus should be kept in place by a pessary or tampons.

In case the uterus becomes incarcerated, in addition to the above procedures, anesthesia may be necessary; and if reposition is not possible, the advisability of inducing abortion or of performing a hysterectomy may have to be considered.

13. Fever, chills, pulse weak and rapid, pain in lower abdomen and thighs, anorexia, pelvic tenderness, prostration; there may be painful urination and defecation.

Drainage may take place through the vagina, or through the abdominal wall.

14. Vaginismus is a condition of painful and spasmodic contraction of the vaginal orifice, which renders coitus either painful or altogether impossible. Its *causes* are irritable hymen, ulcer, or fissure anywhere in the immediate vicinity, urethral caruncle, carunculæ myrtiformes, a long perineum with vaginal orifice placed too anteriorly. The *treatment* consists in removing the cause when possible, tonics and general constitutional treatment; dilatation of the vaginal orifice may be necesary; local application of a 5 per cent. solution of cocaine will relieve the hyperesthesia and allow of coitus.

PATHOLOGY.

3. Cloudy swelling, fatty degeneration, coagulation necrosis; these occur principally in the muscles, the liver, kidneys, and the heart.

9. Impaction in the gall duct, causing biliary colic; dilatation and inflammation of the gall-bladder; hypertrophy and cirrhosis of the liver; carcinoma of the gall-bladder.

10. Formation of gummata; meningitis, myelitis, and degenerative changes in the nerve tissues; hemorrhages; encephalitis. As a result there may follow: mania, melancholia, paretic dementia, pseudoparesis, myelitis, paraplegia, hemiplegia, locomotor ataxia, general paresis, neurasthenia, hysteria, epilepsy, and neuralgia.

11. Triceps, anconeus, supinator longus, extensor carpi radialis longior, brachialis anticus, supinator brevis, extensor carpi radialis brevior, extensor carpi ulnaris, extensor communis digitorum, extensor indicis, extensor minimi digiti, extensor pollicis longus, extensor pollicis brevis, abductor pollicis.

12. Ewald's test breakfast consists of one or two dry rolls, or one or two slices of dry bread; and about two-thirds of a pint of water or weak tea. This is taken in the morning, no food having been taken since the previous evening. The contents of the stomach are withdrawn about an hour to an hour and a half after the test meal, and examined.

15. Cancer of the stomach, cancer of the pancreas, aneurysm.

THERAPEUTICS, PRACTICE, AND MATERIA MEDICA.

1. It is used internally in asthma, bronchitis, and constipation; locally for the eruption in poisoning by rhus toxicodendron.

3. It slows the heart, increases the force of the systole, and prolongs the diastole. It also causes a rise in blood pressure. On the kidneys it exerts more or less of a diuretic action.

4. Iodism is the name applied to the condition resulting from the prolonged use of iodin or the iodides.

The symptoms of iodism are: Severe coryza, sore throat, conjunctivitis, headache, nausea, anorexia, metallic taste in the mouth, increased flow of saliva, eruption on the skin which may go on to suppuration.

6. Tinctura strophanthi. Dose ♏viii. It paralyzes the muscles, first causing stiffness, and later, loss of voluntary movement; the heart is particularly influenced. In small doses it has the same effect as digitalis, increasing the force of the systole, prolonging the diastole, stimulating the cardiac contractions, and causing increased blood pressure. It is also a diuretic.

7. It is used as an expectorant in bronchitis, and as a gastric and hepatic stimulant.

9. (1) Confectio sennæ; dose, ʒj. (2) Fluidextractum sennæ; dose, ♏xxx. (3) Infusum sennæ compositum; dose, ʒiv. (4) Syrupus sennæ; dose, ʒj. (5) Pulvis glycyrrhizæ compositus; dose, ʒj.

12. The hydrochloride. As an expectorant, gr. 1/30; as an emetic, gr. 1/10.

13. Benzoic acid.

14. Severe, sudden, abdominal pain; collapse; small, rapid pulse; the abdomen is distended and tender; the legs are drawn up and the thighs flexed; there may be nausea and vomiting; blood examination shows the presence of leucocytosis.

15. (a) Liquor potassii arsentis, ♏iij. (b) Liquor sodii arsenatis, ♏iij.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION		
Alabama*	W. H Sanders, Montgomery	Montgomery	April	1-6
Arizona*	Ancil Martin, Phoenix	Phoenix	April	1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	9
California	Chas. L. Tisdale, Alameda	San Francisco	April	16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	9
Delaware	I. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W. C. Woodward, Washington	Washington	April	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta	April	—
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago	April	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	J. F. Kennedy, Des Moines	Des Moines	March	19
Kansas	T. E. Raines, Concordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St, New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Augusta	July	9
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	W. S. Fullerton, St. Paul	St Paul	April	2
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	St Louis, Kansas City	April	16
Montana*	Wm. C. Riddell, Helena	Helena	April	—
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May	6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C. F. Wheelock Univ of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May	21
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	March	26
Oregon*	B. E. Miller, Portland	Portland	April	—
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg,	June	—
Rhode Island	G. T. Swarts, Providence	Providence	April	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April	1
Vermont	W. Scott Nay, Underhill	Burlington	July	9
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 9, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	494	225
Diphtheria	278	29
Measles	416	14
Scarlet Fever	320	12
Smallpox	—	—
Varicella	90	—
Typhoid Fever	44	4
Whooping Cough	59	8
Cerebrospinal Meningitis	24	24
Malarial Fever	...	.. .
Totals	1725	316

Rhinopharyngitis Mutilans (Destructive Ulcerous Rhinopharyngitis): a Problem in Tropical Pathology.—James Farquharson Leys states that it may help the European reader to realize the extensive and striking prevalence of this rhinopharyngitis in the few limited regions from which it is reported, if he will apply the figures representing its prevalence in Guam (one to one and five-tenths per cent.) or in the Dominica district (three per cent.) to some populations with which he is familiar. A single case of this kind in Europe would probably be attributed to tuberculosis or tertiary syphilis. The disease appears to be of an infectious nature. It seems to be local, not constitutional, and this suggests, according to the writer, that its cause may be of a fungoid nature. The destructive and mutilating serpiginous ulceration of the nasopharynx is usually self-limited, and has little or no effect upon the general health. The disease begins in the soft parts, but later attacks the bone of the palate and nasal septum, and finally destroys these entirely. At this stage the disease usually arrests itself, leaving the victim with no septum, the nasal cartilage and skin fallen in, and the nose and mouth one large cavity. The writer believes that this disease is not a late manifestation of yaws or of any other constitutional disease, but that it is more probably a peculiar, independent, local affection caused not improbably by the local invasion of some infecting organism. He declares, however, that he does not wish to advocate any mere hypothesis as to its etiology.—*The Journal of Tropical Medicine.*

Barlow's Disease in the Island of Cuba. Joaquin L. Dueñas says that infantile scurvy exists in the Island of Cuba, under the same forms and identical features assigned to it in other countries. Its frequency is apparently less than in other parts of the world, but the writer believes that it will increase as the disease becomes better known. The disease was developed in children fed upon boiled cow's milk, sterilized cow's milk, condensed milk, and maternal milk; and for some reason the employment of each of these modes of feeding was disadvantageous to the health of the child. As the immense majority of children reared upon the same kind of nourishment do not suffer from scurvy, it would seem that the true cause of the disease must be traced either to the presence of some noxious element contained previously in the milk, or in its subsequent development in the intestine by virtue of a defective elaboration of the ingested material. It must be admitted, too, that some organic or functional deficiency in the individual is a causative factor of great importance. In the writer's opinion the toxic agent which produces the scorbutic anemia of the child and the hemorrhagic syndrome which characterizes it, is of a chemical, and not of an infectious, nature. Barlow's disease differs from rickets. Of the author's seven cases, three offered no signs of rickets, neither did they present osseous symptoms, nor the premonitory signs described by Comby, at the level of the stomach, intestine, liver, spleen, and lymphatic glands. The writer concludes that he can add nothing new to what is already known with regard to the diagnosis, prognosis, and treatment of infantile scurvy.—*Archives of Pediatrics.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 8, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, Los Angeles	Feb. 16–23	2	..
Florida, Jacksonville	Feb. 16–23	1	..
Georgia, Augusta	Feb. 19–26	2	..
Indiana, Indianapolis	Feb. 17–24	1	..
La Fayette	Feb. 18–25	2	..
Iowa, Cedar Rapids	Feb 1–28	1	..
Davenport	Feb. 14–28	3	..
Des Moines	Nov. 22—Feb. 22	16	..
North English	Dec. 1–Feb. 10.	75	..
Louisiana, New Orleans	Feb 15–22	8	1
Michigan, Detroit	Jan. 26–Feb. 2	8	..
"	Feb 9–23	13	..
Missouri, St Joseph	Feb. 16–23	25	..
St. Louis	Jan. 26–Feb. 2	1	..
New York, New York	Feb. 16–23	1	..
North Dakota, General	Sept 1–30	4	1
"	Oct 1–31	14	..
Ohio, Cincinnati	Feb. 22–Mar. 1	1	..
Oregon, Milton	Jan. 10–Feb. 23	10	..
Pennsylvania, Homestead	Feb. 14–28	2	..
South Dakota, Sioux Falls	Feb 16–23	1	..
Washington, Spokane	Feb. 16–23	10	..
Tacoma	Feb 2–9	1	..
Wisconsin, La Crosse	Feb. 16–23	1	..
Milwaukee	Feb. 16–23	9	..

SMALLPOX—FOREIGN.

Africa, Cape Town	Jan 12–19	1	..
Argentina, Buenos Aires	Jan. 5–12	7	..
Brazil, Rio de Janeiro	Jan 13–20	3	1
Canada, Nova Scotia, Digby Co.	Feb 23		Present
Halifax	Feb 16–23		1Imp.on S.S. *Pomer'n*
Toronto	Feb 16–23	2	
Yarmouth Co.	Feb. 23		1 Present
Chile, Coquimbo	Feb. 2	25	11
Iquique	Feb 2		Present
China, Hongkong	Jan 12–19	3	2
Ecuador, Guayaquil	Jan 1–31		23
"	Jan. 26–Feb 9		3
France, Paris	Feb 2–9	7	..
Great Britain, Bristol	Feb. 2–9	2	..
Cardiff	Feb 2–9	4	1
Liverpool	Feb. 2–9	1	.
Manchester	Feb. 2–9	1	.
Southampton	Feb. 2–9		1
Italy, General	Jan. 31–Feb 7	8	..
Luxemburg, Canton Remich	Jan. 26–Feb. 9	12	..
Madeira, Funchal	Feb. 10–17	1	1
Mexico, Aguas Calientes	Feb 9–16	..	8
Netherlands, Flushing	Feb. 9–16	2	..
Persia, Gilan Province	Nov. 1–30		Present
Kermanshah	Nov. 1–30		Present
Mash-Had	Dec 31		Present
Tourbat-i-Haidari	Oct 1–Nov 20	56	..
Russia, Odessa	Feb 2–9	19	4
St Petersburg	Jan. 26–Feb 2	1	..
Spain, Seville	Jan 1–31		22

YELLOW FEVER

Ecuador, Bucay	Feb. 13		1
Duran	Feb. 14		Present
Guayaquil	Jan 1–31		22
"	Jan 20–Feb 9		3
Huigra	Feb 8	1	1

CHOLERA.

India, Bombay	Jan 22–29		2
Cochin	Jan 14–22		2
Madras	Jan 19–25		2
Rangoon	Jan 12–19		6

PLAGUE.

Brazil, Rio de Janeiro	Jan 13–20	9	3
Chile, Antofagasta	Feb 2	5	2
Taltal	Jan 31		Epidemic
Egypt, Alexandria	Feb 4–6	1	1
Ismailia	Jan. 28–29	2	1
Suez	Feb 5	1	1
Assiout Province	Jan. 29–Feb 6	3	3
India, Bombay	Jan 22–29		51
Rangoon	Jan 12–19		18
Japan, Formosa	Dec 1–31	292	184
Mauritius	Dec 6–20	44	28
Peru, Callao	Jan 14	1	..
Catacaos	Jan 14	3	2
Chiclayo	Jan. 14	10	10
Lima	Jan. 14	3	3
Mollendo	Jan. 14	2	1
Pascasmayo and San Pedro	Jan. 14	30	10
Paita	Jan. 14	5	3
Trujillo	Jan. 14	21	12
Turkey in Asia, Dieddah	Jan. 11–20	17	16

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Original Articles.

FRACTURE DISLOCATION OF THE SPINE.*

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ACCORDING to the statement made by Keen,[1] 60 per cent. of the fractures of the spine are fracture dislocations, while 20 per cent. are simple fractures, and the remaining 20 per cent. simple dislocations. Kocher[2] has classified the injuries of the vertebral column, and Von Bergmann presents this classification with a few practical modifications as follows:

Partial injuries: (1) Distortion; (2) single dislocation of the lateral joints; (3) contusion; (4) isolated fractures of the vertebral column (pressure fractures); (5) isolated fractures of the arches and spinous processes. Complete dislocations with fracture: (6) Complete dislocation (dislocation of the lateral joint and displacement in the region of the intervertebral disk); (7) dislocations with fractures due to pressure dislocation of one or both lateral joints and pressure fracture of the body; (8) complete dislocation with fracture, dislocations with diagonal fractures, dislocation of the lateral joints, and dislocation in the region of the vertebræ.

Distortion may be produced by a fall on the head with a bending forward or backward of the body. Kocher says: "As long as the continuity of the bodies of the vertebræ and their ligaments is preserved, overextension may simply produce distortion. If extension is associated with torsion, the joint is more affected on the side to which the face is turned. With flexion and rotation, on the other hand, the opposite joint suffers most damage. Sometimes several vertebræ are affected at the same time. The fourth, fifth, and sixth cervical vertebræ are most commonly affected."

The symptoms of this condition are those resulting from pain. The head is held stiff, the ear drawn down toward the shoulder of the affected side, and the face turned toward the healthy side. All motion is avoided, and pressure—whether upon the head or the lateral joints or spinous processes, or upon the neighboring vertebræ—causes pain. Occasionally there are symptoms of injury to the cord present in these cases. This is usually due to hematomyelia (Wagner-Stolper[18]). The cord is rarely if ever crushed. Fixation and extension constitute the best treatment. Recovery occurs usually in from three to four weeks, although the patient should be kept under observation for a longer period of time.

"There may be isolated bilateral dislocation." The rare cases of bilateral dislocation, without injury to the cord, are considered as isolated dislocations. In an isolated dislocation the intervertebral disk remains intact. A blow upon the nape of the neck, or a fall backward on the head, will sometimes produce a unilateral dislocation of the lateral joints. The *x*-rays usually will show the displacement of the bone, and the position of the head—drawn down toward the healthy side—will usually enable one to make the diagnosis. The cord is not apt to be affected, although hematomyelia may be present. In these cases reduction should be effected under an anesthetic, and then fixation and extension should be continued. Isolated fractures of the bodies of the vertebræ are always pressure fractures, and are usually caused by a fall upon the head or neck, or upon the sacrum or feet. They are most common in the dorsal and upper lumbar regions, but rare in the cervical. In these cases a certain amount of anteroposterior deformity is noticeable, although this may be so slight as to be overlooked. The deformity may disappear, too, as soon as the patient is in a recumbent position, but may become patent when the erect position is assumed. The symptoms may be so slight as to be completely overlooked.

Fractures of the sternum should lead one to suspect an injury to the vertebral column. Sometimes the cord is completely destroyed, at other times it is simply pressed upon by the displaced vertebral bodies.

Chipault[3] has suggested wiring the spinous processes in these cases in order to prevent slipping, but often they can be treated by a plaster jacket with extension and counterextension, and should remain in a recumbent position. In case the cord has not been injured this would be the better method of treatment, but with the appearance of pressure upon the cord at any time, operation should be undertaken. This pressure may be due to hematorachis, hematomyelia, or—when it comes on later—to the formation of callus, decreasing the size of the spinal canal and making pressure upon the cord.

The fractures involving the posterior portion of the spine, spinous processes, and arches may frequently be treated simply by rest. When, however, a fracture of the spine or laminæ, or both, is accompanied by symptoms referable to the cord, operation should be undertaken at once, for the probabilities in these cases are that the arch has been driven in and is compressing the cord, or spicula of bone have penetrated it. One must also remember, in this condition, as in the former, that a gradually increasing paralysis, coming on at any time after the injury, is indicative of pressure upon the cord, and should call for immediate operative interference.

The fracture dislocations, on the other hand, present a much more difficult problem. Most authors agree with the statement that they are produced by a bending of the body either forward or backward, causing a crush and dislocation of the body or bodies of the vertebræ, and usually accompanied by very marked destruction of the spinal cord itself. Occasionally these conditions are produced by very powerful muscular action, according to Cheyne.[4] Usually they are caused by indirect violence, as when

*Read before the Medical Society of the County of New York, February 25, 1907.

the body is bent forcibly downward by the caving in of an embankment or the falling of some heavy weight. In these cases the spine, after it has been bent over, jumps back again, so that little or no deformity may be noticeable at the time of injury. Thorburn[5] believes this to be a frequent cause of the condition, and in the cervical region considers that they are twice as common as those in which the displacement is permanent.

Chipault, on the other hand, after a consideration of a very considerable number of cases, does not believe that this temporary displacement occurs. The majority of observers, however, have considered that this was the usual cause of the condition, and it seems to explain much better the extensive lacerations of the cord which are usually found in this class of cases.

In my paper, reviewing 103 cases of spinal surgery, published in 1891,[6] I quoted Hutchinson's[7] conclusions based upon twenty post-mortem examinations. He says: "Permanent compression of the cord or of any part of it is very rare—not more than one in ten—and as most fractures in this region are due to bends, fractures of the laminæ are of little consequence and never cause compression. Instances of great displacement sometimes occur, and can rarely be benefited by operation, while cases in which during life there is the greatest displacement are not always the most serious." In considering this question, I found that in 35 cases in which the cause of compression was given, 11 were due to temporary, and 13 to continued bony displacement, thus controverting the statement made by Hutchinson, and showing that continued depression of the bone was the most frequent cause of the compression of the cord.

The cases in which the cord is found crushed, but not compressed (at operation or post mortem), are probably explained by the springing back of the spinal column into position when the patient is straightened up and laid in a horizontal position. They may spring back so nearly into normal position that it is almost impossible to recognize any deformity. Sutton[8] has reported an interesting case of intrauterine fracture of the spine caused by a fall of the mother at the fifth month of gestation. This child was born at the eighth month, and, while the upper part of the body was fully developed, all below the umbilicus corresponded to the development of a five-month fetus.

These cases of fracture dislocation of the spine resolve themselves, therefore, into two classes: (1) those in which the spinal cord is not injured, and (2) those in which there is more or less interference with the functions of the cord itself. In the first set of cases operative treatment would not be indicated in the beginning. The only symptoms directly due to the fracture are, first, those common to all other fractures, such as deformity, increased mobility, crepitus, etc. The patient, however, in a case of fracture of the spine, is unable to walk, is markedly shocked, and even though the examiner does not succeed in eliciting crepitus or false point of motion, which would probably be very dangerous symptoms to look for in these cases, he will readily make out a point of marked tenderness along the spine. Local signs are usually unsatisfactory. Either no irregularity can be detected, or an irregularity that is so slight as to be of little consequence—sometimes a prominence of the vertebra may be noticeable, or there may be a depression along the line of the spinous processes, or we may be able to make out a lateral displacement. When these signs are present, they are a great aid in diagnosis, and would be almost conclusive evidence of the location of a fracture if associated with marked tenderness on pressure, localized pain—increased materially whenever the position of the patient is altered—or with a fracture of the sternum. Extravasation of blood, too, may occur early, and by the time the patient is examined it may be possible to recognize a distinct infiltration of the surrounding tissues.

In making the examination, the greatest care is essential, for the slightest twisting of the patient may displace the injured vertebræ and cause compression or laceration, or even complete destruction of the cord. Lathrop[9] says that with the aid of the Roentgen ray the fracture can be definitely seen and splinters of bone can be located; but it is impossible in many of these cases, in my opinion, to get a satisfactory *x*-ray plate, nor is it advisable to manipulate the patient any more than is absolutely essential to remove him from the place of the accident and to institute the proper treatment.

I do not myself favor the application of plaster-of-Paris unless there is marked mobility of the fragments, but think that the patient is better if placed in a horizontal position on his back, on a springless bed, and with sufficient extension and counterextension to compel him to remain in the dorsal position. In those cases in which there is marked mobility of the fragments, and where it is difficult to restrain the patient and keep him quiet, a plaster jacket should be applied.

A much more complicated picture is presented when the spinal cord is involved. If it were not for some of the recent articles that have been published, referring to the possible regeneration of the spinal cord, I should feel that the last word had been said on that subject in the articles I read before the American Medical Association, Section on Surgery, in June, 1900,[10] and before the Surgical Section of the Rochester Academy of Medicine, May, 1901.[11] The question, then, is the one asked by Burrell:[12] "Is the spinal cord irremediably damaged, and can we tell whether a spinal cord is irremediably damaged, or not?" To this must be added another: Does regeneration of the spinal cord take place, and, if so, what must be done in order to put it in the proper position for regeneration?

The symptoms in these cases are those due to the compression or destruction of the cord itself, and we owe to Thorburn much of the accuracy of our knowledge of the symptomatology of this class of injuries. At the time that he published his brochure (1889)[13] he said that surgeons would probably in the near future open the spinal canal with as little danger and as little hesitation as they now operate upon the cavity of the cranium. This prophecy has been abundantly fulfilled.

Burrell[12] recognizes three types of cases: (1) those in which the cord is crushed; (2) those in which doubt exists as to whether the cord is irremediably damaged, and (3) those in which it is fair to assume that the cord is not irremediably damaged. The first forms by far the largest class of spinal injuries. There is one other condition that has been found in a certain number of these cases, and that is compression by blood-clot. Four of these cases were reported in my first paper, and Keen's case of spinal hemorrhage is reported in full in my paper read before the Rochester Academy. At this time I also reported a case of my own of the same character.

Walton[14] asks whether we really have reliable symptoms establishing, except through their persistence, irremediable crush of the cord, for, if we have not, are we doing justice to the patient when we rely on the time-honored dictum that the damage was

done at the moment of impact, that the pressure of fragments has been spontaneously relieved, and that nothing can be accomplished by operation He says that fracture of the spine with complete transverse lesion of the cord is accompanied by immediate relaxed motor paralysis involving the parts below the level of the lesion. There is entire absence of rigidity, of spasm, convulsive movement, or other irritative sign in the motor sphere. The statement that signs of motor irritation may appear at the level of the lesion seems based rather upon theoretical considerations than upon actual observation. Partial injury to the cord, including the results of hemorrhage, may be indicated by a slower onset of paralysis, by unilateral or irregular distribution (affecting for example, the arms more than the legs), by the preservation, or comparative preservation of reflexes, and by the rapid improvement. In diagnosticating the level of the lesion by studying the muscles involved in the paralysis, the tables of Thorburn, based on clinical rather than on anatomical or experimental observations, have stood the test of practical application. It would appear that the motor symptoms may reach a much higher level than the sensory—at least in case of lesion of the lumbar enlargement.

In fracture with total transverse lesion the area of anesthesia is generally sharply marked, and at a level corresponding to the segment crushed—that is, at a level materially below the seat of the lesion. Most authorities agree that the upper roots of the brachial plexus supply the cap of the shoulder and the radial side of the arm and hand, while the lower roots supply a strip down the ulnar side of the arm and hand. The seventh dorsal segment supplies the ensiform region; the eleventh dorsal, the umbilicus, and the lumbar, the front and outer and inner aspects of the thigh to the groin, and the inner aspect of the leg. The sacral supplies the region below the knee in front on the outer aspect, as well as the whole or greater part of the foot. It supplies also the back of the leg and a strip in the middle of the posterior surface of the thigh, and the saddle-shaped area, the perineum, scrotum, and penis. The fourth cervical segment furnishes sensation down to a line below the clavicle adjoining the distribution of the second dorsal. The absence of representation on the trunk of the intervening segments is explained by the fact that in the budding and growth of the upper extremity, the areas supplied by the fifth, sixth, seventh, and eighth cervical, and the first dorsal are carried down the arm. For a similar reason the twelfth dorsal closely approximates the third sacral on the buttocks. It is probable that complete anesthesia in any area implies loss of the segments above and below the one which supplies that area, as each part of the body receives sensory fibers from these segments (Sherrington). It should not be forgotten that in case the roots are crushed at the same level as the cord the anesthesia will reach to the level of the lesion. Below the well-known strip of hyperesthesia which surmounts the anesthesia and points to root irritation, is apt to appear a strip of thermal anesthesia and of analgesia (Kocher).

Incomplete anesthesia points to incomplete lesion of the cord. The same is generally, but not invariably, true of anesthesia of limited or of unilateral distribution. It is generally true of anesthesia limited to regions far below the level of the lesion, and in general the varying modification of the different forms of anesthesia at different levels points to incomplete lesion. Injury to nerve roots alone sometimes appears in the cervical region after stretching and bruising—perhaps with temporary displacement of vertebræ and rupture of ligaments (distortion). In this lesion the sensory symptoms, like the motor, are apt to be limited to the arms.

Retention, rather than incontinence of urine, is the rule in all varieties of spinal fracture with injury to the cord, even when the lesion involves the lumbar region. There may be either retention or incontinence of feces, more often the former. The sensation in the rectum and bladder may be preserved in incomplete lesions, even though voluntary evacuation is impossible. The symptoms referable to vasomotor disturbance are variable and baffling. The most common observation is a rise in the superficial temperature of the lower extremities, which may be replaced later by coolness of the extremities, and sometimes—though not usually—by marked coldness. The skin is generally dry. Sweating is absent.

The knee jerk is lost in case of complete destruction of the cord. The superficial reflexes are also generally lost or diminished in these cases—probably always lost in complete lesions. This may not necessarily be limited to the reflexes below the lesion, but may involve those higher up. The Babinski reflex may appear when no other reflex is present.

With these data at hand we can form some fairly definite conclusions with regard to the condition of the cord—whether there is a complete or an incomplete destruction. In one of my other papers I said that in the former case it is useless to operate; in the latter it becomes necessary to consider at what time the operation can best be performed.

If operation is undertaken at once there is danger of interference where a spontaneous cure would result if the patient were left alone, or where a complete destruction of the cord renders operative interference useless. If, however, operation be delayed too long, and a compression be allowed to continue, a degeneration may result which would be as serious as though the functions of the cord had been destroyed by the original injury. Horsley insisted that operation should be undertaken early, and this was my own opinion as expressed at that time, provided the symptoms present indicated interference with the functions of the cord. In other cases I should wait until the shock following the injury had been overcome, watching the patient's condition carefully, however, and at the slightest indication of any symptoms pointing to an extension of the interference with the action of the spinal cord, whether that interference be due to hemorrhage or to compression from depression, callus, or to the exudation of lymph, I should operate at once.

In this connection, however, it is important to take into account the general results following fractures of the spine treated without operation, and the same statistics that I used in my former paper will illustrate this point. Thus, Gurlt reported 217 deaths out of 270 fractures, or over 80 per cent.; while Burrell, from the tables of the Boston City Hospital, cited 82 cases with 64 deaths, or 70 per cent., and of the 22 per cent. of recoveries only 11 per cent. were satisfactory, the other 11 per cent. being completely disabled. Burrell has published a series of 244 cases in his paper already quoted, but as he does not say whether this last series includes both operative and nonoperative cases, we have thought best not to include it here. These statistics also show that in the fatal cases the greater number of deaths occurred within a few days. It is, therefore, evident that if we operate immediately after the injury we will have failures that should not be charged against

the operation itself, and if possible we should wait before operating until the question can be settled whether the patient will overcome the shock or succumb directly to the effects of the injury.

There is another objection to immediate operation. In so-called concussion of the spine there may be a certain amount of anesthesia and paralysis. The recovery, however, will be complete, or at least so nearly so that no appreciable lesion can be made out. Immediate operations in these cases would be unnecessary, as they would have recovered spontaneously had they been left alone for a sufficient length of time. It is impossible, too, in the first few hours to determine with any degree of certainty how severe the injury really is, nor can we absolutely localize the injury to the cord. In my opinion, therefore, we should wait until this period of shock has passed and until it is evident that there will be no spontaneous recovery complete enough to render life bearable. If after this period has passed the patient still continues to improve, no operative interference should be considered, but as soon as the symptoms begin to show retrograde phenomena, or seem to have reached the end of the improvement, operation should be undertaken.

In those cases where no improvement follows the recovery from the shock, and yet the suspicion remains that a complete crush of the cord has not occurred, we should operate immediately. This divides the cases, therefore, as follows: (1) those that evidently have complete destruction of the cord; (2) those where, following the recovery from the shock, it is evident that the lesion of the cord has not been completely destructive and yet no improvement is noted. Operation here should be done as soon as these facts are determined; (3) those where the lesion of the cord is incomplete and where the symptoms of compression are extending as evidenced by increasing paralysis and the enlarged area of anesthesia; here operation should be undertaken immediately, as there is a hemorrhage, an inflammatory thickening, or some acute process present that threatens the destruction of the cord unless it is controlled; (4) those in which improvement is noted at first but is arrested later; operation in these should be done as soon as it is settled that the improvement has ceased; (5) those who made a full recovery, or almost so, under the usual conservative methods, where the paraplegia or other symptoms develop at a later date; this is probably due to compression from callus, and the operation should not be delayed any longer than is essential to establish the fact that there has been a loss of function.

Regional statistics are important in determining the result of operations. Thus we find out of 27 affected in the cervical region, operated on immediately, 21 died, while out of 10 operated on at a later period only 2 died; in the dorsal region, out of 49 operated on immediately, 23 died, while of those who were operated on later, only 5 died, from a total of 63. Even in the lumbar region the same disproportion exists; thus, from 6 immediate operations, 4 died, while from 22 done at a later period, only 4 were fatal.

The following table shows the results better than any description I can write:

Cervical Region.	Immediate Operation.	Later Operation.
Deaths	21	2
Recovery	0	2
Improved	2	1
Not improved	0	4
Subsequent death	4	3
	27	12

Dorsal Region.	Immediate Operation.	Later Operation.
Deaths	23	5
Recovery	4	10
Improved	9	18
Not improved	6	16
Subsequent death	7	16
	49	65

Lumbar Region.	Immediate Operation.	Later Operation.
Deaths	4	4
Recovery	1	6
Improvement	1	6
No improvement	0	4
Subsequent death	0	2
	6	22

Sacral Region.	Immediate Operation.	Later Operation.
Deaths	0	0
Recovery	0	1
Improved	0	3
Not improved	0	0
Subsequent death	0	0
	0	4

This emphasizes the fact, which is already recognized, that the cervical is the most dangerous region for operation, and at the same time the least satisfactory in its ultimate result. The results in the dorsal region have improved since the earlier statistics, due probably to the improvement in technique, the greater rapidity with which the operation is done, and the fact that operations are done earlier than was formerly the case. The lumbar region shows a surprisingly small number of surgical interventions when it is taken into account that the safety of the operation in this region and the decided improvement following it was emphasized in all the earlier papers on this subject. I cannot but feel that some of the incomplete recoveries recorded have been due to incomplete relief of the compression. Unless the operator has had considerable experience in spinal surgery, it is a very easy matter to overlook a compressing point. It is essential, in order to make the operation perfectly successful (1) to remove enough laminæ to absolutely settle the fact that there is no remaining compression of the cord; (2) to chisel off any projecting bone, whether it be a portion of a vertebral body or bodies, or one or more articular processes; (3) to remove all blood clots, even though laminæ of unaffected vertebræ have to be removed to get beyond the hemorrhagic area; (4) to look out for thickening and compression resulting from inflammatory processes or injuries of the structures within the vertebral canal. It is sometimes difficult to be absolutely certain whether all compression has been done away with, but one usually recognizes the fact that the cord is smaller in the exposed area than it should be, and that its pulsation is not complete, not as full as in a normal cord. Care should be taken, therefore, that the cord dilates to its full extent, and that the pulsation returns. This can happen only where the cord has not been completely destroyed. And if the operator cannot be sure of this fact without opening the dura, he had better make an incision and definitely determine whether the integrity of the cord has been preserved. He will also sometimes recognize the fact that the dura is discolored, looks as though there has been an intradural hemorrhage, and while this accident, if it has occurred, has probably produced more or less disintegration of the cord itself, the dura should be opened and this blood clot removed, for one may look for a certain amount of regeneration in the cord provided it is relieved from the compression at a sufficiently early period, and provided it has not been completely destroyed.

After commenting on the former statistics of the operation, Keen said: "With such statistics before us it is impossible to draw any other conclusion than that operation is advisable in case extension directly after the accident fails to reduce the deformity. Of course, the limitations arising from the time that has elapsed since the accident, the region involved, and the severity of the lesion must be given due weight in reaching a conclusion in any given case. In an instance, therefore, of such gravity, followed by such an immense percentage of deaths, if no operation be done, it would seem to be advisable, with our present experience, in all suitable cases, to give the patients the real, though often desperate chance that operation offers, and that the operation should be done at a much earlier period than has hitherto been the rule." If this was the conclusion reached after a careful weighing of all the data presented up to that time, how much more emphatically may we advise operation at the present time.

This brings us, then, to a consideration of the question of regeneration of the cord after complete injury. In view of what has been said by several recent writers on the subject, and also of the experimental work that has been done along this line, is it possible that in our former papers we were mistaken in saying that complete destructive lesions of the cord could not be improved by operative measures, and therefore should not be operated upon? Bolton[15] says: "Many observers have studied the processes of repair of injuries of the cord in many classes of vertebrates, and while there is complete regeneration after division in some of the lower orders, in mammals there is practically none. In the immediate neighborhood of the lesion degenerative changes occur in the ganglion cells and fibers cut off from their trophic centers; while in those in which the connection is preserved there is a feeble and never-completed attempt at regeneration only. The lesion is repaired by the growth of ordinary cicatricial tissue from the connective tissue cells of the blood-vessels and the Pia mater."

In 1892 Leckie[16] suggested the feasibility of removing a sufficient amount of the spinal column, in cases of destruction of a small portion of the cord after fracture, to permit of the approximation of the separated ends by stitches. Chipault and Maydl had both discussed this question of suture of the spinal cord, and dismissed it as impossible owing to the inelasticity of the cord itself and the resistance of the ligaments. Leckie proposed to shorten the spinal column in order to overcome these difficulties, and to permit of the divided ends of the cord being placed in apposition and the suturing of the membranes. There should be no insuperable difficulty, he says, in the removal of a part or the whole of a vertebra, or even portions of two adjacent vertebræ.

Mixter and Chase[17] report a very suggestive case, which is summed up as follows: "High fracture of the spine—sixth cervical vertebra—in which all the classical symptoms were present, upon which authorities have previously based their opinion that operation was contraindicated, because it suggested total transverse lesion with a crush of the cord beyond repair. The patient was operated upon within twenty-four hours, and lived eleven and a half months, during which time there was marked and steady improvement. From a condition of total paralysis involving all of the body excepting the anterior surfaces of the arms and the right hand, and the shoulders and scapular regions and head, the patient regained nearly normal use of his hands and arms, and such improvement in the condition of his body and legs as to lead one to believe that if an unfortunate complication had not arisen further improvement might have been expected. From a condition of total anesthesia over the area above referred to there was practically complete recovery by the ordinary tests. A series of cross sections of the spinal cord from the pons to the coccyx made it possible to study the paths of degeneration following a crush at an unusual length of time after injury. Pathological anatomy of the spinal cord showed that descending degeneration of all injured axons occurs in motor tracts below the level of the lesion, and of the common tract, which is composed of short, descending sensory collaterals from injured sensory neurons. It shows the occurrence of ascending degeneration of all sensory axons involved in the lesion. The sections demonstrate that normal sensory and motor axons exist at the seat of the lesion, though their functions were interrupted at the time of the injury, which suggested total destruction of the cord. The operation showed fracture and depression of the spinous processes and laminæ apparently lying against the cord with a blood clot under the laminæ, but none under the dura. The condition of the bodies of the vertebræ not known." It should be noted that no sign of regeneration was found.

The question is pertinent—What is the value of operation in injuries to the spinal cord? (1) It removes depressed fragments of bone apparently lying against the cord. (2) It removes blood clots. (3) It allows the escape of exudate and makes room for inflammatory thickening. (4) If extensive hemorrhage is present, either extra- or intradural, it relieves pressure from the cord. It has been shown that degeneration from pressure appears within four days. If a cord is injured by crush and not totally destroyed, the continued pressure of a blood clot may succeed in completing total destruction. (5) Traumatic spinal edema may be of such extent as to demand greater space for enlargement of the cord to avoid further destruction of fibers. (6) There is absolutely no method by which one can early diagnosticate slight or great pressure of a fragment of bone, the pressure of a small or a large hematoma, whether there is a momentary pinch of the cord or slight pressure. (7) The fact that the cord looked normal in these cases does not preclude the possibility that pressure had existed, nor prove that a condition had existed in which drainage and relief of pressure were not distinctly beneficial. (8) The patients did not suffer from any ill effect of the operation *per se*. The dangers of operation are very slight compared to the possible benefit, and the further satisfaction is obtained that the surgeon *knows* that continued pressure does not exist. Typical symptoms of a complete transverse lesion are not infallible, in which case the surgeon is not doing all in his power to relieve the patient's condition unless he operates.

As a rule, operation in most if not all of the cases can be delayed a few hours until a greater stability of the nervous system is regained; a few cases might impress one with the immediate necessity of operation. It seems reasonable, then, to assume that even with the appearance of total destruction we have to do with a condition which for a time has interrupted the registration of sensation and motion on the cerebrum over certain neurons which after regaining equilibrium will resume their functions. Though fiber degeneration persisted through the year following the operation, and no signs of regeneration were made out in the microscopical examination, the suggestion seems pertinent that the steady improvement

indicated an increased transmission of impulses through the remaining scattered fibers, the analogue of which is found in the increase of functions occurring in the kidney after unilateral nephrectomy, showing the power of nature to accommodate herself to adverse conditions.

Thomas[19] has examined the cord microscopically in several cases dying within a few days of the accident, and he emphasizes the fact that hemorrhagic conditions exist as well as marked degenerative changes of the cord itself, for a considerable distance beyond the actual crush. He calls attention to the fact that sensory and paralytic symptoms are of the greatest value for the diagnosis and the location of the injury to the cord, but that the injury is apt to be even higher than the symptoms would indicate. This bears out a suggestion that I made in a former paper with regard to the necessity for the surgeon to carry his exploration farther than the involved segment, and it also suggests the possibility of a marked improvement in the symptoms, with an absorption of these minute hemorrhagic areas, as I suggested in a discussion before the New York Academy of Medicine last year.

Weissman's dictum that nerve cells once destroyed are never replaced seems to be true, although some observations, notably those of Worcester and the reports of several operators on the spine, would seem to prove the contrary. Barker[20] says: "Regeneration of severed nerve fibers within the spinal cord and brain is unfortunately very much less complete than in the peripheral regions." Oliver[21] says that "sufficient regeneration of nervous tissue to carry on the functions of the spinal cord does not occur, and no method is at present known by which these functions may be restored.

Dr. L. Pierce Clark[22] concludes that animal experiments fail to provide conclusive data that central tracts of the nervous system ever regenerate so that the former function is restored. In warm-blooded animals, and in the human species in particular, an abortive attempt on the part of the cord to regenerate, is largely, if not solely confined to fibers of undoubted peripheral type. Histological analysis of cases of hemisection, compression paraplegia, myelitis, and other like destructive lesions of the cord, fail to show positive evidence that actual structural regeneration of axis cylinders ever occurs in the central nerve tracts of the human spinal cord. In case of complete division of the brain and spinal tracts, there is simply degeneration followed by sclerosis. A most acceptable reason for nonregeneration of such tracts was shown in the fact that the component nerve fibers did not possess a neurilemma sheath from which nerve regeneration mainly if not solely occurs. This lack in cord and brain tracts in contrast to the regenerating peripheral nerves was due possibly to a difference of embryological origin for the two structures of the nervous system. The seven cases cited by Stewart and Hart of cord regeneration being merely hemisections, either do not fulfill the conditions of test, or lack definite and convincing evidence of regeneration. In cases of complete transverse division of the cord, from either experimental or clinical data, there is not sufficient justification to warrant suture of the spinal cord in an attempt to cure the defect.

None of the cases that have been reported up to the present time as cases of regeneration of the spinal cord have demonstrated to my mind the slightest sign of actual regeneration. Although all of them are reported as complete transverse lesions of the cord, in none of them has that been proven, and it is more than likely that there have been nerve fibers that were not destroyed and that have recovered their function, allowing for a more or less considerable improvement in the patient's condition. My own experience in this condition relates simply to two cases. In both of them there was apparently a complete transverse section of the cord, and in both the whole of the pulpy mass was removed, and a suture applied bringing the severed ends of the cord in apposition. One patient lived but three weeks and showed no signs of regeneration. The other lived for ten months, died of the usual kidney complications, and showed absolutely no recovery of function below the removed segment. Up to the present time it seems to me that we are obliged to confess that spinal regeneration in the human species has not been proven, and that it is fallacious to hold out this hope to the patient. But from a consideration of the cases that we have studied we must agree that our previous statement in regard to complete transverse lesions of the cord is probably too drastic, and that some of these cases would probably be improved if they were operated upon. We should therefore suggest that in the future, and until we have a sufficient number from which to draw conclusions, all of these cases should be submitted to the surgeon for operation. At the same time, as it will not increase the dangers to the patient's life, we should advocate that the plan of approximating the cord, as suggested by Haynes,[23] should be carried out, but would warn operators against making a complete section of the apparently destroyed areas, for fear of cutting out nerve fibers that are not involved in the destructive process and that may resume their normal functions. A long series of histological examinations of these cords will have to be made before the question of regeneration can be definitely settled.

I have now performed laminectomy thirty-two times, and while some of my cases have improved to a marked degree, a very considerable number have shown absolutely no benefit from the operation. In none can I attribute the improvement to regeneration, but rather to the conditions already suggested. If regeneration of the cord does occur, we should have had more improvement in some of the cases that were not benefited.

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PATHOLOGICAL CHANGES IN FRACTURE-DISLOCATIONS OF THE SPINE.*

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The pathology of the bone conditions in fracture-dislocation of the spine is essentially surgical, and my remarks on it must be brief, if, in the limited time, sufficient space is to be devoted to the lesions in the nervous system.

Permit me, then, to dismiss the bone lesions with saying that in one-third of the lesions of the spinal column the cord escapes all injury. This is especially apt to be the case in the cervical region, where the canal is larger and there is greater freedom of movement in the bones. It is also more apt to be the case in children than in adults.

Of the regions affected by fracture-dislocations, the cervical region and lumbar region contain about one-half the cases; the dorsal region the other half. Most of the dorsal fracture-dislocations involve the eleventh or twelfth dorsal vertebra. These produce the lumbar type of paralysis, and so should by right be classed with the lumbar fractures.

Thus, neurologically considered, the great majority of the cases of traumatic spinal paralysis are either of the cervical type (including the first dorsal segment of the cord) or of the lumbo-sacral type, including, of course, the cauda equina. Surgical statistics show a great preponderance of the latter over the former. Possibly some clinical cases, in which the bone lesions are not recognizable and the cord symptoms are slight and inconspicuous, escape identification in surgical wards. If they do, the actual number of cervical and lumbar cases would tend to be more equal.

Isolated fractures of the spinous and transverse processes of the laminæ occur chiefly in the cervical region. Fracture of the spinous process occurs in about 8 per cent. of the cases, and in about 4 per cent. as an isolated condition. Only in the rarest cases does it constitute a menace to life, and then by being thrust forward by muscular violence to compress the cord.

Fractures of the laminæ as isolated conditions also occur in the cervical region. These are sometimes recognizable by digital examination.

Late results of injuries to the bones consist in osteomyelitis, which is very rare, in tuberculosis, and in traumatic spondylitis or Kümmell's disease, which affects most frequently the third and seventh dorsal vertebræ.

While the injuries to the bones are, of course, of great surgical interest, the whole importance of this subject centers about the injury which they produce in the cord, and all clinical expressions should be in terms of cord rather than bone. As far as the membranes of the cord are concerned, they are practically never injured alone. They may be lacerated, and the lacerations cause extensive bleeding within the spinal canal, either inside or outside the dura. In my opinion, however, this never occurs as an isolated condition; that is, it never occurs without there being an extensive contusion of the cord associated with the bleeding. This condition, known under the term of hæmatorrhachis, has played quite an important rôle in the clinical history of spinal cord injuries. A special symptomatology has been constructed for it—notably, shooting pains. The surgeon is on the alert for it, with the idea of relieving pressure and, as a consequence, of relieving symptoms.

*Read at a meeting of the Medical Society of the County of New York, February 25, 1907.

But if, as autopsy records seem to show, and as a careful examination of the literature seems to show, hæmatorrhachis never occurs by itself, but only as a part and parcel of a general spinal-cord injury, there is very little use of operating for it, as the hemorrhage will be rapidly absorbed. I have been on the lookout for this condition for a great many years, and have never yet seen a case of pure hæmatorrhachis.

The cord itself may be contused, lacerated, or cut in two. Its external appearance may show the effect of this by dents, punctate hemorrhages, or dislocations; or else the cord, even when severely injured internally, may show nothing abnormal on its external appearance, the extent of the damage becoming apparent only when it is sectioned. Thus it cannot be said that a cord is normal because at operation its external appearances are normal.

When the cases have not been quickly fatal, and come to operation or autopsy a long time after the injury, the cord is bound down by adhesions to the dura, and the dura by adhesions to the bony canal. The cord is shriveled, oftentimes to one-third of its original size. When removed from the canal and sectioned, it shows to the naked eye a disarrangement of the constituent parts, of which dislocation of the gray matter, fissures, discolorations, and hemorrhages are the common pictures.

In recent cases the cord may be so soft that it oozes out when cut into.

Microscopical examination shows the picture which is described as traumatic degeneration, viz., disintegration of spinal-cord elements, large round cells, myelin drops, blood cells and blood pigment, nerve cells and nerve fibers in various stages of degeneration; in old cases the whole is obscured by an overgrowth of new connective tissue. Properly stained, there will also be foci of ascending and descending degeneration; with a Marchi stain this can be demonstrated five days after the injury.

The hemorrhage in spinal-cord injuries has a predilection for the gray matter. It often occurs as a focus of bleeding at a single point, from which focus columns of blood ascend and descend the cord, in the gray matter. As the blood is absorbed cavities are left in the cord, a condition to which Van Guison gave the name of hæmatomyelopore. This focal hæmomyelia may occur in any region of the cord as part of the lesions secondary to fracture-dislocation. It may also occur as a primary condition, without demonstrable injury to the bone. It is then found only in the cervical region, and results from stretching of the cord in sudden flexions of the neck, *e.g.* diving in shallow water. This condition, which I have called primary focal hæmatomyelia, has a rather unique clinical symptomatology and course, and its prognosis is relatively good.

Finally, small blood extravasations may occur up and down the cord with or without spinal fracture.

The extent of a traumatic lesion in the spinal cord varies from the case where the cord is only lightly contused or pressed upon, causing a few elective, slight, and temporary symptoms, to where it is reduced to a pulp, or even cut in two.

Partial lesions are particularly frequent in injuries to the cervical region and to the lower segments of the cord.

In fractures in the dorsal region the bone displacement is usually extreme and the cord lesion consequently severe. Few dorsal lesions of the cord, therefore, are partial. As a result, the outlook in dorsal cases, as a class, is less favorable than in cervical cases, as a class, in spite of the fact that a

severe cervical lesion is more quickly fatal than a severe dorsal lesion.

By a partial lesion is understood a lesion in which one or more of the spinal functions, *e.g.* paralysis, sensibility, sphincter control, is not included in the paralysis.

Many cases have the appearance, from the presence of all symptoms in pronounced degree, immediately after the accident, of being total transverse lesions; yet such cases in the course of weeks or months may show, by recovery, that the cord could not have been injured even in one-half its extent.

For many years clinicians have endeavored to determine from the clinical symptoms the extent of the damage done to the cord itself, and it has generally been accepted as a guiding rule for operation that total abolition of the reflexes, especially in the cervical region, indicated a total lesion.

This rule is not reliable, as, for several days after the accident, the knee jerks may be absent, then return and become exaggerated; or, in some cervical cases, knee jerks, once exaggerated, may later disappear altogether.

Regarding the question of repair after spinal cord injuries, there are much confusion and haziness of ideas—and also intelligent disagreement on well-defined issues.

The question of repair and recovery after fracture-dislocation presents itself to my mind as follows:

The injury to the cord takes place at the time of the trauma. The cord is bruised or lacerated, or compressed, as the case may be. As a result, there ensue more or less softening and shrinking of the cord. The true damage, therefore, is a result of the initial and brief violence—the secondary and long-continued pressure which may result from a narrowing of the canal having little or no effect. It is as though a banana were in a tube and the tube were suddenly narrowed to half its size—all the injury to the banana would have occurred at the time of compression. So with the spinal cord. It is neither firm enough nor elastic enough, nor tough enough to offer any substantial resistance to compression.

Furthermore, long-continued pressure of the spinal cord seems improbable for the reason that from the moment of the initial compression onward the cord undergoes softening, with a constant reduction in its volume, thus making more room in the canal and less opportunity for the so-called permanent compression. This explanation leaves out of account two conditions—one in which splinters of bone have pierced the cord, and the other in which there is compression of the cauda equina. The first, though rare, undoubtedly occurs, and when in the cervical region constitutes a cause for operation. In the second case the relief of pressure is as strongly indicated and is as successful as it is in the peripheral nerves.

The question of regeneration is the most important one in spinal-cord pathology. If the cord regenerates, the field for operative procedure is very extensive. Does the spinal cord regenerate?

It is well known that intramedullary fibers can be bruised and contused, and yet the symptoms which accompanied the original injury pass away almost entirely. But this, it is unnecessary to say, does not prove regeneration. It is a recovery from the original shock of the injury, and occurs, in my opinion, quite as often without as with the surgical relief of pressure.

The question of regeneration is this—Do nerve fibers of the spinal cord, which have once been actually severed in their continuity, regenerate? In no experiment on a cold-blooded animal has it been possible to divide the spinal cord completely and then secure a restitution of conducting function. Schmaus has shown that a divided spinal cord can be reunited by nerve fibers in case some of the blood-vessel-carrying tissue is left—that it is along this tissue that the new fibers push their way. But such fibers are few in number, embryonic in character, and form no connecting link of function between the two ends.

I am loath to go into a discussion of the recently reported cases of suture of the human spinal cord—they have in no instance been accepted by neurologists as proving regeneration, and I think the early enthusiasm of surgeons in regard to them has somewhat lessened of late. The neurological opinion, therefore, is mainly unanimous that regeneration of divided ends does not take place in the central nervous system.

52 West Fifty-third Street.

THE TREATMENT OF FRACTURE DISLOCATIONS OF THE SPINE.*

By IRVING S. HAYNES, PH.B., M.D.,

NEW YORK.

Fracture of the vertebræ may occur independently of dislocation, and a dislocation without a fracture; yet the two are so often associated, and it is usually so difficult to diagnose one condition independently of the other, that it is found more convenient and practical to group these injuries of the spine under a comprehensive term. This is especially useful, as the treatment is similar in both conditions.

In practice we are confronted then with cases in which the spine has been damaged, with or without a concomitant injury to the spinal cord. If the injury is one to the spine alone, the treatment becomes much simpler than where there is associated with it a lesion of the cord.

We may deal with all such uncomplicated cases on the expectant plan; that is, by extension and immobilization in a plaster jacket. Should there be unmistakable evidences of a fracture-dislocation without cord involvement in any region of the spine, excepting the thoracic, the setting or reduction of such a fracture-dislocation may be attempted under general anesthesia without a cutting operation: bearing in mind, however, the imperative need there is of preventing a further displacement, due to moving the patient, with a resulting injury to the cord.

In the majority of these cases it will be found that, even with general anesthesia, reduction cannot be obtained without exposing the lesion through a free incision, and assisting the efforts at reduction by prying the articular processes into position, or by resecting the lower ones which oppose such reduction.

In the thoracic region, it is practically impossible to reduce the deformity through manipulation alone, and, therefore, it is better, if there are no cord symptoms, to treat the case by plaster jacket.

There is greater need of the application of an immobilizing dressing in the case of the injured spine than in fractures or dislocations in general, because, even if the cord is not involved at first, we never know when it may become so through a slipping of the injured vertebræ. Cases of sudden death are recorded where such a fatal termination has followed the voluntary or passive movement of

*Contributed to a symposium upon fracture-dislocations of the spine, at a meeting of the Medical Society of the County of New York, February 25, 1907.

the patient in bed. I had such a termination follow in a case of dislocation of the fifth cervical vertebra upon the sixth. Under ether anesthesia, by extension, counterextension, and manipulation, the dislocation was reduced and a plaster collar, including the chest and head, applied. This became so uncomfortable after twenty-four hours, and the patient was in such evident distress, that the cast was cut open along the front, but not removed. The man, who was much relieved, attempted to move his head, and died almost immediately.

It is quite a problem how to apply a plaster jacket in these cases of fracture-dislocations without subjecting the patient to too many risks. The plan I have used in some cases is this: In cervical injuries, either during or without general anesthesia, the patient's head and shoulders are brought beyond the edge of the table, and firm extension is made in a horizontal plane, maintained by a broad bandage behind the occiput and beneath the chin, fastened so it cannot slip and long enough to pass over one shoulder, across the back, and under the arm of a strong assistant, who is seated high enough to bring his shoulders a little above the level of the patient. The assistant braces his feet against the table on which the patient lies, and can maintain extension in such a position without fatigue for half an hour. For lower regions of the spine I have found the hammock support very satisfactory. With an ordinary hospital iron bedstead, where the crosspieces at the head and foot are about on a level, a sling can be improvised by passing several turns of a strong body bandage from one to the other, forming a support eighteen inches wide. The patient is placed on this face downward and steadied by assistants holding his arms upward and legs downward. The sagging of the support produces extension in the spine, and the support is included in the jacket from which it can be removed later.

If we do not wish to move the patient sufficient for the use of the above method, a safer plan is to make a wide Scultetus' bandage composed of thick canton flannel, well rubbed up with plaster mud. This is laid on the bed alongside of the patient, who is carefully rolled over, face downward, on to the bandage, and the ends of the bandage are carefully adjusted without disturbing the patient.

While there are many cases on record of fracture-dislocations of the spine without cord involvement, there are so many more in which this structure is damaged that in dealing with these conditions of the spine we must first consider the nature of the cord injury, and be guided by that more than by any other factor in the treatment we shall institute.

Even at the present day, valuable time is frequently lost in waiting to arrive at an opinion as to the exact nature and extent of the damage to the cord, and the dictum is quite universally accepted that, if the cord is completely severed by the scissor action of the vertebræ, then no operation is to be undertaken.

However, competent observers are quite unanimous in also declaring that it is often impossible to predict the exact nature or extent of the cord injury within a reasonable time. Being then "at sea" regarding the exact pathological state present it seems to me it is our duty to act at once. I mean by that as soon as shock has been recovered from, or the associated injuries, if any, have received adequate treatment.

The following conditions, in themselves, are recognized as justifying the operation of laminectomy, independent of whether the operation will or will not benefit the primary lesion in the spine:

(1) To remove pressure from bone, whether the posterior arch of a vertebra or only spiculæ of bone.

(2) To arrest hemorrhage, remove blood clots, and arrest an advancing paralysis.

(3) To allow oozing in traumatic edema of the cord.

(4) To provide drainage in septic conditions involving the cord.

The cord is such a fragile structure that contact with any foreign body, as serous exudate, blood clot, pent-up pus, or bony spiculæ or masses, speedily induces such grave pathological changes that its restoration to normal is impossible, unless such substances are removed at once and pressure is relieved. Without wasting precious time, then, in debating whether the patient before us has or has not a severed cord, I wish to urge immediate operation in every case of fracture-discoloration of the spine presenting symptoms of cord involvement, even if the severity of the symptoms seems to point to complete destruction of the cord. Mistakes in diagnosis are easy to make here; we cannot be sure of the extent of the injury to the cord for several days, and meantime the period has passed within which surgical interference might have obtained striking results.

Early operation will allow of the removal of the laminæ, or pieces of bone which are constricting or pressing into the cord, will furnish an opportunity to arrest hemorrhage, and so prevent pressure from a blood clot, and will provide an outlet for the edema, which often follows spinal injury.

The operation of laminectomy is not a difficult one, and not many instruments and assistants are needed. Let the incision be in the median line four to six inches long. Expose the spinous processes and laminæ for at least five vertebræ, the center one being the seat of the injury. With Rongeur forceps bite off the spinous processes at their bases, and open the spinal canal first in the middle line and then laterally, removing the laminæ and intervening ligaments. Do not waste time with any of the methods for plastic work in the removal of the spinous processes and laminæ, as they consume valuable time and their removal does not weaken the spine to any perceptible degree. Having exposed the cord, remove any projecting piece of bone pressing upon the cord, arrest hemorrhage by hot compresses or by ligature. Do not stop here; open the dura in the middle line and inspect the cord. If there be oozing of blood or serum, the first needs to be arrested by fine ligatures passed by a short, round, full-curved needle, the second to be provided for by drainage of the subdural space. Suppose the cord is severed; then opens a new phase of the treatment of spinal injuries. Many writers, but, I am glad to say, not all, advise us that in case the cord is severed operation is hopeless, because regeneration of a severed cord is impossible. I am not here to-night to debate the question. My reasons for advocating surgical treatment, even in such desperate cases, have been given at length in a previous publication, and I shall not bore you by repeating them to-night.

I respect the opinion of the men who assert that no operation is justifiable upon a severed cord because no regeneration is possible in its conducting paths after such a lesion. They know more about the histology, pathology, and reparative processes of the spinal cord than I do, but I will say this, and say it emphatically, that whether their kind of regeneration is possible or not, Nature has in a few cases of sutured cords effected some sort of union of the many severed fibers. When the cord has been

severed, and no attempt made to unite it, death has followed in every case in less than a year. In the few cases on record, five in all, where the spinal cord was sutured, and the ends brought together, one patient died in ten days as a result of the injury, the other four lived and were improving at the date of the report; one two and one-half years, and one over four years since the injury; and all of them showed unmistakable evidence of a less or greater restoration of functions between the sutured segments of the cord.

Having attended to the damaged spinal canal and its contents, the fractured or dislocated vertebræ have to be considered. Loose pieces of bone are removed, but those firmly adhered to ligaments and not encroaching on the spinal canal are not disturbed; a dislocated vertebra may be reduced by removing the locking articular processes as before indicated. The wound is then closed for primary union over a drain of several strips of rubber tissue or strands of silk-worm gut, and a plaster cast is applied as described above. The drainage should be removed in twenty-four to forty-eight hours. Treatment does not cease here, however, for if paralytic symptoms are present, then must massage, electricity, and passive motion be instituted and maintained for an indefinite period, depending altogether upon the condition of the patient.

Bedsores must be given careful consideration in prophylaxis and treatment. They are unquestionably due to pressure necrosis, and can be prevented by using a water bed and close attention to relieving pressure over the various bony prominences. Cystitis is a serious complication, often followed by a fatal pyelitis. Sterile catheterization with systematic irrigation of the bladder must be instituted early and maintained as long as necessary.

After three to four weeks of treatment in bed, if the patient's condition allows it, a new plaster jacket should be applied with a Sayre's extension tripod, or after the horizontal hammock plan, and this should be worn, changed as often as necessary, for several months; or if a less rigid support is permissible, the Taylor spinal brace can be adjusted. Such support should be worn for at least a year after a laminectomy for a fracture-dislocation.

1125 Madison Avenue.

PHOTOTHERAPY IN NERVOUS DISEASE.*

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When invited some time ago to take part in this symposium and present a short paper upon some topic that was especially interesting me in the domain of neurology or psychology, I at once fixed upon the subject of phototherapy. Not that I had any very large or notably valuable experience along this line, but it so happened that I had recently installed in my office an incandescent light apparatus of considerable power, and, like the child with the new toy, it was superseding in immediate interest other and more familiar physical method. I shall not attempt to emulate the too common tendency in the exploitation of physical methods of treatment, by claiming for light therapy exraordinary and uniformly successful results. Nevertheless there is much truth in the alliterative phrase—light and life, darkness and death—and in the artificial incandescent electric light we have a method of utilizing powerful luminous and calorific effects, and to a less extent actinic effects as well, second only to the source of all light and heat—the sun. It is well to have a definite conception as to what phototherapy means. It means light treatment. For practical purposes the rate of vibration is all-important in classifying the different forms of vibratory energy.

The slower rates which influence the auditory nerve and are translated into sound are unavailable for therapeutic use. As the rates increase in frequency we get the perception on the thermic sense as heat, and still further increase gives us light—the visible spectrum. Beyond the visible into the invisible region of the spectrum we get the ultra violet and the *x*-rays. While there are no sharply defined lines between these different rates of energy, we are nevertheless able to comprehend the actual difference between sound, heat, light, and electricity by our senses and the ultra-violet and *x*-rays by chemical means.

In the earlier experiments by Finsen and his followers, the term phototherapy came to be used to include as much or more of the invisible rates as the visible, notwithstanding the fact that what is invisible can hardly be called light.

Strictly speaking, then, this term should be used to include the visible spectrum only. In therapeutics, light is utilized by three methods: Sunlight, the arc light, and the incandescent electric light. Light is essentially the same from whatever source obtained, but as a matter of convenience it is important as to how and where we get it. The combined luminous, calorific, and actinic rays of sunlight are more powerful than from any artificial source, but the obstacles in the way of its general utilization are obvious. It is with the incandescent (sometimes called leucodescent) lamp light, with its powerful heat and light rays, that I have to do in this paper. The ultra-violet ray to be sure is a part of the incandescent light, but it is unavailable for use in the mechanism of the incandescent light apparatus because of its inability to penetrate glass. And yet the incandescent light is by no means devoid of chemical power, for it is sufficiently rich in the blue, indigo, and violet frequencies, to the passage of which glass is no hindrance. The arc light more nearly approaches concentrated sunlight in its actinic and luminous power, but is deficient in heat rays, and its chief value lies in its localized and superficial action, which in certain conditions, as Finsen so ably demonstrated, is powerfully curative. The incandescent light therefore is manifestly inferior in some respects to either sunlight as used by the Finsen method, or to the arc light. It is weaker in chemical effects, and its luminous power is also inferior to the other two, but the heat emitted is far greater, and in my experience this combination of calorific and light effects renders it far more valuable than the arc light in its general constitutional influence, and in the relief of local painful conditions. That the higher rates of vibration (the ultra violet) are useless for the production of constitutional effect is due to the fact that they penetrate the body only under pressure or other methods of producing dehematization of the skin, and then but slightly, while the combined rays act efficiently to a great depth, even passing completely through the tissues, as evidenced by their action on a sensitized plate placed on the opposite side of the body. The incandescent light bath differs in its heat, to say nothing of its light effects, from the ordinary hot air bath, in that in the former the heat is communicated to the body through the transmission of radiant

*Read before the Medical Association of the Greater City of New York, February 18, 1907.

energy—which leaves the surrounding air but slightly affected. This is easily demonstrated by interposing an opaque substance between the source of light and heat and the body, when all sensation of heat ceases. The radiant energy penetrates the body and as it meets with the resistance of the more or less dense bodily structures is converted into heat. In the hot air bath, on the contrary, the heat is derived from the air, and while more depressing in its effects is far less penetrating than radiant heat, and is inferior in its physiological and therapeutic effects.

The superior physiological effects of radiated heat, as compared with heated air, would seem to consist in its more powerful rubefacient effect upon the skin with accompanying dilatation of the superficial vessels. This relaxation of the superficial vessels being unaccompanied by any appreciable heating of the surrounding air can be maintained for a long time without discomfort, and is followed by interesting alterative and reconstructive effects through its influence upon metabolism. Perspiration is induced more quickly by radiant heat than by most other methods. In the Turkish hot-air bath, some twenty minutes are necessary to excite active sweating, while exposure to a bearable degree of radiant heat stimulates the skin to the point of perspiration in five minutes or less. This more rapid result is accounted for by the stimulating effects of the light rays upon the peripheral nerve endings.

But one of the most interesting evidences of the increased oxidation and tissue changes induced by this form of radiant energy is the increase in the elimination of carbon dioxide. As compared with the hot air bath it has been found that the increase of the natural oxidation of the body as indicated by the elimination of carbon dioxide was four times greater in the light bath.

Light acts on the blood, increasing the hemoglobin-carrying power of the red corpuscles, and is decidedly bactericidal, although this destructive influence upon microorganisms must be attributed in far greater measure to the action of the ultra violet —the invisible rays. As the nervous system is the only route through which sensations are conveyed, it follows that light and heat effects should be classed as a nerve stimulant or a nerve sedative according as the degree of their intensity results in an increase or reduction of energy.

The function of the nerve endings becomes either more keenly alive or their perceptive powers are dulled according to the kind, and the duration and intensity of the physical agent employed. An increase, decrease, modification or destruction of the nervous influence are demonstrable changes in innervation that follow thermic and chemical stimulation, and it is by this inhibition or modification of nerve conduction that the combined thermic, luminous, and chemical effects of light influence the hyperesthesias, the anesthesias, and pain in general. Since the nervous system stimulates and regulates the functional processes, the reflex effects of local peripheral stimulation are often seen in remote parts.

All physical therapeutic agencies are, in fact, primarily irritants. Indeed life, with its vital processes, depends on constant irritation and physical forces applied to the body can be believed to be transformed into vital cell energy. At all events it is well understood that deprivation of irritation so that the normal functional activity is restricted and held in abeyance results in functional weakness, while, on the other hand, local or general physical irritants stimulates and strengthens, or depresses and weakens, according as they are applied in moderation and adequately, or in excess.

In entitling this paper "Phototherapy in Nervous Diseases," I would by no means thus limit it, although the condition of the nervous system is largely responsible for many a disease that is not classed as nervous.

The principles on which is based the therapeutics of light and heat are fundamentally very much the same as govern in the application of other physical methods of treatment. They unquestionably influence metabolism and necessarily the processes of excretion and secretion.

The circulation is, of course, profoundly influenced, and when we consider the intimate circulatory relationships between the skin and the various internal organs of the body, it is no very difficult matter to appreciate in how many ways benefit may be derived from the play of these energies upon the periphery. If the vessels of the skin when distended are capable of holding, as is asserted, one-half the whole amount of blood, it is evident that this distention must greatly relieve congested parts, with which they are in immediate connection.

It relieves nerve pressure and pain by exciting the activity of the circulation through congested areas, resulting in a sort of circulatory drainage, as it were.

This is the primary and perhaps most important effect of the application of light and radiant heat. More prolonged and intense applications are still effective in the dissipation of local hyperemias, but not so much it is believed through an increased activity of circulation as by inducing a secondary contraction of the arterioles.

To enumerate the many pathological conditions for which the light treatment has been found to be of service would make a long list, and it is beyond the scope of this paper to detail cases, although many of a most interesting and convincing character might be related.

But this much may be said. As a rule, whenever and wherever pain exists, whether in the form of the neuralgias or neuritis, or pain of the rheumatic or gouty type, a judicious application of the light bath is pretty certain to give temporary relief, and successive applications in a large proportion of cases are followed by permanent relief. With tuberculosis I have had no experience, but much has been claimed for it, and I am not prepared to dispute the claim that in chronic localized tuberculosis much good may result. Some little experience I have had in the application of these powerful concentrated light and heat rays as a general tonic and an aid to nutrition, especially in children convalescing from acute disease or with a poor inheritance of vitality.

In the toxemias and the toxic neuroses, the therapeutic value of light energy is beyond question.

This I can affirm, both from my own experience and the observed results of Dr. T. Crothers in a series of a thousand treatments given to patients in his sanatorium. In the toxic neuroses and the palsies they were found to be of the greatest benefit—far preferable to hot air and vapor baths. In my own cases I have found that the benefit derived from the light bath was often greatly enhanced by supplementary physical methods, such as static electric high-frequency currents and general faradization.

In conclusion it may be said that the basis of the action of the light bath in disease would seem to be these four:

1. Its bactericidal power.

2. As a promoter of tissue metabolism.

3. Its influence in increasing the hemoglobin-carrying power of the red corpuscles.

4. Its analgesic properties, due to its power to relieve blood pressure through induced congestion of superficial vessels, and to its infinitely rapid vibratory action on the nerve units of the body.

The Sydenham, Madison Avenue and Fifty-eighth Street

THE EARLY MOBILIZATION OF PATIENTS AFTER MAJOR GYNECOLOGICAL OPERATIONS.*

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New methods which aim at overthrowing customs established for centuries must expect to encounter obstacles of such magnitude that the voice of a single individual counts for little and may well be likened to the solitary voice in the desert. The plea must rather be for a dispassionate hearing, and, if converts are to be made, the solitary voice must be backed by logic in its argument and a sufficiently large number of experiences to give the foundation-stones of the argument the strength and firmness of granite.

In the *Journal of the American Medical Association* for August, 1899 (xxxiii., pp. 454), Ries of Chicago, in a short article, announced that, after giving the method a trial of four years, he now placed little or no restrictions in the movements or diet of his patients after vaginal celiotomy or abdominal section. They were permitted to turn around and sit up in bed and out of bed as soon as they were fairly able. In the discussion, Manley, Wiggin, and Schaefer agreed in the main with the new ideas set forth, but Bonifield insisted that the experience of ages was not to be thrust aside in a minute. No attention apparently was given to this communication, and probably the majority of surgeons regarded the proposition as absurd, if not insane or criminal. Fifteen years ago Boldt was ordering his vaginal celiotomy cases out of bed in twenty-four hours, but only two and one-half years ago did he take up the question in connection with abdominal work, and, after a fairly large experience with it, announced his confidence therein at the Birmingham meeting of the Southern Surgical and Gynecological Association; and later, at a meeting held a year ago, of the New York Obstetrical Society. At a subsequent meeting a strong paper attacking this method was written in a cleverly sarcastic vein by one of the Fellows, Dr. Franz Foerster, on which occasion, in spite of insisting on the correctness of his position as based on his experiences, the feeling of the meeting seemed to be very strongly against Boldt. One of the Fellows remarked that Boldt's position was untenable, if an accident occurred, in case of a malpractice suit, as no colleague could be found who could conscientiously support him in his contention that such early mobilization was proper after abdominal section.

The writer confesses that nobody regarded this proposition of early mobilization after major operations with greater suspicion and scepticism than himself. A certain thrill of horror unconsciously passed through his frame at the thought of a laparotomized patient being taken in the arms and sat upright in a chair within twelve hours after operation. There seemed to be an element of unjustifiable brutality in the procedure. But watching the cases of my friend, Dr. Boldt, and noting the improved morale which set in almost from the moment the patient emerged from the anesthetic, and the rapidity with which convalescence progressed, I felt that I owed it to myself and to my patients to give the method a cautious trial. I beg to state right here that I have never yet had the courage, nor have I seen the necessity, for getting my patients out of bed before forty-eight hours, and the larger number of my patients were not allowed out of bed until the fifth, seventh, or eighth day. This agrees with the plan adopted by Ries, who does not permit any of his patients to leave the bed until at least three days after operation, and others not until after removal of the stitches on the sixth to the eighth day; but all are permitted to move about in bed as soon as they want to. Even this, however, anticipates the convalescence by at least one or two weeks, and is in itself, from my point of view, a vast stride in advance over the method generally in vogue, by which patients are kept in bed from fourteen to twenty-one days.

On what basis is the method of early mobilization to be granted a fair and dispassionate hearing? The statistics of Ries, Boldt, Chanler, and myself now easily cover 1,000 laparotomies; and in no case has an accident occurred which can be fairly attributed to the early mobilization of the patient.† In the paper of Ries, above alluded to, he claims to have had only one death in 100 vaginal celiotomies (a septic case), of which 60 were hysterectomies, and to have had no case of vaginal hernia or hemorrhage. The Mayo brothers, I understand, place their patients in an upright position after operations on the stomach and gall-bladder, as soon as the patient emerges from the anesthetic. Moynahan, in his work just published on "Abdominal Operations," advises the same procedure "after all operations upon the stomach and after some upon the gall-bladder." This writer adds: "I find that it is a general custom to keep all patients in bed much longer than is necessary. If all is going well, the sooner the patient is up the better." He permits an appendectomy patient to be out of bed in six or seven days, and to return to light work in a fortnight. A medical man was seeing patients on the fifteenth day, after a gastro-enterostomy and cholecystotomy, and no ill effects followed. In the Medical Record of November 24, 1906, Marshall and Quick, reporting 100 laparotomies with two deaths, write: "In all simple laparotomy cases with small incisions, and in which extensive work is not done upon the viscera, the patients are placed in a sitting posture upon the third or fourth day, and permitted to be up upon the sixth day, usually leaving the hospital before the tenth day."

It is a good rule that combatants look their opponents squarely in the face in order to meet properly and victoriously every variety of thrust or blow. Let us, then, seriously and in cold reason look over the ground and consider the objections to the early mobilization of patients after major abdominal operations. What are the dangers after laparotomy?

Among the immediate dangers, that of post-operative shock or collapse easily ranks first. As a matter of fact, many cases reported formerly as shock were simply cases of secondary hemorrhage. I have known even a cigarette drain in the abdominal wound to fail to direct blood to the exterior, after

* Presented, by special invitation, at the meeting of the Southern Surgical and Gynecological Association, held on December 11, 1906.

† Since the above was written I have learned of one case in which the laparotomy-wound reopened. This was attributed to the poor quality of the adhesive plaster used

extensive secondary hemorrhage, and this case was treated for a time as one of primary shock due to the traumatism of operation. On the other hand, debility resulting from protracted invalidism, excessive hemorrhage during operation, prolonged anesthesia, and traumatism, or excessive handling of the intraabdominal viscera, may lead to true shock. Such cases of shock are excluded from the category of those in which early mobilization is to be thought of. On the other hand, early mobilization does not tend to develop shock according to the experience, up to the present, of those best in position to know.

Hemorrhage is not to be feared in the hands of competent surgeons. Our knowledge of ligature materials and technique is to-day so precise that bleeding from loosening of such ligatures is hardly to be expected after the lapse of twelve hours—unless other complications, such as cough or vomiting of a severe type, are present. As a matter of fact, no cases of hemorrhage have been noted in the thousand cases referred to, and the operator need have no fear from this score.

Reopening of the abdominal wound with more or less evisceration, I have met with three or four times during former years. Patients who are delirious or maniacal may tear away dressings, and with the finger-nails reopen laparotomy wounds. This happened once, I recall, after a cesarean section followed by complete hysterectomy, which I did on an Italian woman who entered my service in an advanced stage of sepsis, with a large cervical fibroid blocking the pelvic outlet, the gangrenous cord being prolapsed several inches and presenting at the vulvar orifice. This woman, in her maniacal state, tore open her wound, and the intestines lay on the surface of the abdomen. After carefully washing them and returning them to the interior of the abdomen, the laparotomy wound was again sutured, and the woman made a good recovery. Other cases of reopening of the abdominal wound with more or less evisceration occurred as the result of excessive vomiting or associated with severe bronchitis or pneumonia. I do not recommend taking such patients out of bed. Beyond the raising of the patient in bed during a pneumonia or bronchitis, no further efforts at mobilization should be made. As a matter of fact, it will be shown later that immobilization on the back is distinctly bad treatment when bronchial secretions are in danger of accumulating in the air-tubes or alveoli. As regards the risk of reopening of the abdominal wound in the absence of these complications, most operators who close such wounds in three or four layers have learned to ignore it. In the early mobilization of patients, Ries is wrong when he allows his patients to move about and sit up unbandaged, even if he does use strips of adhesive plaster in order to approximate the edges of suppurating wounds with the object, incidentally, of reinforcing the abdominal wall. The position of Boldt is far more logical, in that he immobilizes the abdomen by means of a bandage of adhesive plaster surrounding the whole body, which holds it in a vise-like grip, before he permits his patients to be moved about. I have adopted Boldt's method and regard his plaster as a most important safeguard against any possibility of reopening of the laparotomy wound. After a vaginal hysterectomy I have known of one fatal case in the hands of a colleague, in which early mobilization seemed to be partly responsible for adhesions and angulation of the intestines. In this case the house surgeon removed the vaginal drain without consulting the operator at the end of twenty-four hours. My own experiences, however, with vaginal celiotomy, including hysterectomy, have been free from accidents.

Vomiting, distention, and inability to move the bowels, are not necessarily contraindications to the early mobilization of patients. Indeed, some of us are convinced that moving the patients and getting them early in an upright position in a chair even aids intestinal peristalsis, and the early removal of gases and intestinal contents with relief of belching and vomiting. Indeed, Ries says that not only is intestinal peristalsis assisted by early mobilization and early feeding, but that adhesions are prevented from forming, and that the easy and spontaneous movement of the bowels is thereby assisted. In a case recently operated on by the writer, the indication for the laparotomy was the breaking up of old adhesions left after a previous operation for ectopic gestation. This woman left her bed in forty-eight hours and began to walk about. She left the hospital free from the old pains.* Of course, conditions of anemia of the brain, great debility, etc., would induce the careful surgeon to weigh all of the circumstances and act slowly before getting such patients up.

Interference with the primary union of the laparotomy wound is not a result of early mobilization. If suppuration of the wound occurs, the fault lies with the operation or the ligature materials. Drained wounds are not proper cases for early mobilization until at least a week has elapsed and the drain has completely or nearly been dispensed with. Otherwise, there is risk of hernia. A rapid pulse, even without elevation of temperature, may indicate wound suppuration, and is a contraindication to early mobilization.

Thrombosis and embolism constitute the greatest and most serious of the more remote risks following laparotomy, and offer the gravest objection to those who are most earnestly opposed to the idea of early post-operative mobilization. From the excellent chapter by Frazier, in the first volume of Keene's "Surgery," just published, I abstract the following facts and statistics.

A thrombus is defined to be a mass, the component parts of which are derived from the blood, formed in the heart or peripheral vessels. Infection is the predominant factor in the majority of cases of thrombosis which come under the surgeon's care. Retardation of the blood current is a predisposing or contributing cause. Unless in cooperation with some other condition, as a lesion of the vessel wall, or the presence of organisms, it cannot give rise to thrombosis. Arterial thrombosis is more common in the lower extremities, is due to embolism or traumatism, or is associated with disease of the arterial walls (endarteritis or arteriosclerosis), and when present is usually the result of infection or chronic disease. In some instances, both arterial and venous thrombosis exist at the same time. The femoral vein is almost invariably the seat of venous thrombosis, and the majority of cases occur on the left side.

Albans alludes to four etiological factors: (1) Disturbances before operation (such as heart lesions, varicose veins, exhaustive, prolonged decubitus, presence of abdominal tumors); (2) disturbances at time of operation (such as chilling and exposing of abdominal contents, traumatism of vessel walls); (3) effect of anesthetic on the heart; (4) topographical relations of the vessels (thus an overloaded sigmoid might press on the left iliac vein or the iliac artery might press on the iliac vein).

Clark attributes such a thrombophlebitis to the

*I have since then operated in a second case for this indication and had the patient sitting in a chair after forty-eight hours.

effect of traumatism exerted upon the deep epigastric vessels during the course of a laparotomy, as a result of traction on the edges of the wound. He thinks that the primary thrombosis may start in the deep epigastric vein and be slowly propagated along the line of the vessel until it reaches the external iliac vein, whence it gives rise to a retrogressive thrombus in the femoral vein.

In Sonneburg's clinic thrombosis was met twenty times in 1,000 operations for appendicitis. Fourteen of these occurred in interval operations, which are ordinarily nonsuppurative conditions. In 3,000 laparotomies Clark found records of only thirty-five cases of thrombosis. Schenck in 7,130 gynecological operations found that twenty-five cases of thrombosis occurred after hysterectomy, and nine after ovariotomy. Albans notes fifty-three cases of thrombosis in 1,140 laparotomies and twenty-six occurred after "clean" operations. In the service of W. K. Polk at Bellevue Hospital, between the years 1895-1902, there was not a single record of thrombosis or embolism in 103 abdominal or vaginal hysterectomies. At the Beth Israel Hospital, from October 1, 1905, until October 1, 1906, in nearly 350 abdominal sections, we had four cases of femoral thrombosis. In three of these cases the operations were done for suppurative appendicitis and, in the fourth, for a broad ligament abscess. None of these patients at Beth Israel Hospital, and none of those referred to in the foregoing statistics, to my knowledge, was submitted to early mobilization. On the other hand, the thousand cases treated by early mobilization present only two cases (one of Boldt and one of Ries), or possibly three, in which a thrombosis occurred. As I saw Boldt's case, I have my doubts as to whether the mild phlebitic condition had really anything to do with the post-operative mobilization—occurring as it did three weeks after the operation in a very active young lady.

In Sonneburg's 1,000 cases of appendicitis three cases of embolism are noted with two other fatal cases, in which embolic pneumonia was supposed to have been present. Pulmonary embolism is said to occur much more commonly after gynecological than after general surgical operations. Albans, in 1,140 abdominal operations, found twenty-three cases of pulmonary embolism. Lotheisen, in sixty-six cases of pulmonary embolism, found forty to be secondary to phlebitis and thrombosis of the veins of the lower extremities; next in frequency come those which start from thrombosis in the pelvic veins in the puerperium, or after operations upon the pelvic organs. In 236 operations for uterine fibroid, according to Burkhard, twelve cases of embolism occurred. Of the fifty cases of abdominal section which were subjected to early mobilization, in my services at the Beth Israel Hospital, Post-Graduate Hospital, and elsewhere, all the patients recovered. I met no cases of embolism or thrombosis, and only one pneumonia (with pneumococci in the sputum). Neither Reis nor Boldt met with accidents of this kind in their 885 cases, and in my case the patient was distinctly exposed on a very cold night to a draught from a window, which could not be closed, at the head of her bed.

Many surgeons have a grave fear of late or dedelayed shock, and oppose early mobilization for this reason. During the past year I met two such cases in my hospital work in which the patients were confined to their bed. In the first case a purulent collection was found in Douglas' sac after an apparently spontaneous abortion. This was incised and drained in the usual manner on December 25. Excepting a rapid pulse, everything was doing nicely, with temperature (formerly 103° F.) at the normal, when on January 2, with the patient still in bed, she went into sudden collapse without any evidence of pain. Vomiting set in, temperature dropped to 94° F., and the pulse became imperceptible. After free stimulation, including intravenous infusion of saline solution, she gradually emerged from the shock and went on to a spontaneous and complete recovery. The second case occurred forty-eight hours after a radical abdominal operation for suppurating adnexa, in which vaginal drainage was instituted. Without having been moved in bed, because of a rapid pulse, the woman passed suddenly into a condition of profound shock and was brought back to life only by vigorous stimulation and an intravenous saline infusion. I consider the possibility of secondary or delayed shock as one of serious importance, and one which should be borne in mind in the cases in which we are urging early mobilization. I have always regarded a rapid pulse after laparotomy, even in the absence of a distinct febrile movement, with suspicion. Both of these patients were not disturbed on that account, and perhaps the fortunate outcome in both may have depended on that circumstance.

Up to a recent period of time post-operative pneumonia was thought to be the result of the anesthetic. Moynahan accounts for its occurrence in five different ways. He claims, first, that the immobilization resulting from the unconscious protection of the wound area by the patient results in the accumulation of bronchial secretions in the lung. Deep breaths are avoided and the air-passages are not cleared by the act of coughing. This results in irritation and waterlogging of the lungs by retained secretions. The second cause is chilling of the patient's body during or shortly after operation. The third cause is the inhalation of septic matter into the lungs. The fourth cause he attributes to septic emboli derived from the field of operation. The fifth cause he attributes to a long continuance of the Trendelenburg position. What argument could be more potent and favorable to early mobilization than the first reason which Moynahan above gives as a predisposing cause to post-operative pneumonia? It has long been recognized by medical men that the sitting position in bed conduces, in great measure, toward a favorable result in cases of pneumonia. Why not apply the same principle, in appropriate cases, to the avoidance of this complication after operation?

While early mobilization is possible, and, according to my conviction, beneficial in a large number of cases after laparotomy, I believe that the exact limitations of the method have not as yet been drawn. As I do not pretent to be an extremist, I have laid down for my own guidance the following contraindications to the early mobilization of these patients: (1) Shock or collapse preceding, during, or subsequent to operation; (2) organic lesions of the heart, kidneys, or blood-vessels; (3) debilitated or senile patients; (4) rapid heart action after operation, with or without rise of temperature; (5) persistent elevation of temperature, after operation, from any cause; (6) signs of peritonitis; (7) hernia operations; (8) complications like pneumonia, diarrhea, dysentery, etc.; (9) after suspension, fixation, and prolapsus operations; (10) in vaginal plastic operations (especially on the perineum) associated with laparotomy; (11) in drained and suppurating abdominal wounds.

I believe in early, gradual, and rational mobilization. To place a patient after a laparotomy in a chair twelve hours after the operation, seems to me to be one extreme: to keep the same patient on her

back in bed during three weeks, with no reaction present, seems to me to be the opposite extreme. That patients recover under both methods does not prove that either is the one to be generally followed. Nor do I regard successful results after early mobilization in the light of surgical curiosities, or even as experiments. My own plan is to let the patient severely alone during the first twenty-four hours—the nurse merely is allowed to place the pillows comfortably under the patient's head and shoulders. If all goes well on the second or third day, the patient may be sat upright in bed for a few minutes, supported on the nurse's arm; later by a few hours she may be propped up by pillows in a sitting position during a quarter of an hour. The following day she may be in this sitting posture in bed for an hour in the forenoon and an hour in the afternoon. After that she can be gently placed in a chair for a reasonable period of time during each succeeding day. While these movements are being carried out under the orders of the physician, the nurse must keep a close watch on the patient's pulse. With the first evidence of faintness or rapid pulse the patient is returned to bed and no further efforts at mobilization are made for several days. While I have been obliged to desist from and postpone active mobilization in a number of my cases, because of wound disturbances, I have had no fatal complications, and I have been satisfied that wound suppuration, when it did occur, was independent of the movements and dependent solely on infection from purulent matter soiling the wound edges at the time of operation, or from ligature material.

Early mobilization is possible when the plaster binder of Boldt is on the patient. This plaster surrounds the body of the patient, and the serrated ribbons so overlap each other in front, that the abdomen is supported from below upwards and held in a vise-like grip. From the onset these patients are allowed to drink freely of water, albumin water, peptonized milk, beef extracts, and orange juice. Moynahan says: "It seems to me not improbable that death took place in some of my early cases literally from starvation." After twenty-four hours Ries and Boldt give their patients meat, bread, and vegetables, insisting, however, on thorough mastication.

To sum up, early mobilization, from the writer's point of view and experience, tends to overcome ordinary vomiting, accumulation of intestinal flatus, and bronchial irritation from retained secretions in the air-passages. Instead of contributing additional risks to the possibilities of thrombosis and embolism, he thinks that, in the absence of septic infection, the early moving about of these patients actually tends to reduce these risks. The morale of these patients is always wonderfully improved, and a tendency to debility, hysteria, and mental states of depression and anxiety correspondingly diminished. The total result, therefore, is an earlier and more pleasant convalescence. According to Ries, the method prevents muscular atrophy, conduces to a rapid recovery of strength, and permits of the discharge of these patients from the hospital in about twelve days.

To prove that neither the character nor the magnitude of an operation necessarily debars early mobilization—the objectionable conditions referred to being absent—I append a few cases selected at random from my notes.

Case I.—Patient of Dr. Charles L. Antony. Patient in a chronic pyemic condition from a suppurating fibroid tumor reaching up to the level of the umbilicus. She had lost some thirty or forty pounds in weight, and was in a debilitated condition at the time of operation. Abdominal hysterectomy done at Beth Israel Hospital on November 20, 1905. Patient was out of bed on the seventh day and made a progressive and uneventful recovery.

Case II.—Patient of Dr. Martin Goldberger. Case of bilateral gonorrheal pyosalpinx. Both pus sacs with purulent ovaries, removed with ventrofixation, at a private sanatorium on July 10, 1905. Little suppuration in lower angle of wound. Patient out of bed at end of a week. Got married later and was well when last heard from.

Case III.—Patient of Dr. I. A. Lehman. Laparotomy for ruptured ectopic gestation at St. Mark's Hospital on January 3, 1906. Out of bed on the eighth day, and at home on the tenth day. Seen six months later at my office with scar in ideal condition.

Case IV.—Patient of Dr. Max Ghertler. Laparotomy at St. Mark's Hospital on February 2, 1906. Appendectomy and right oophorectomy. Out of bed on the fourth day. Sent home on the thirteenth day. Scar perfect nine months later.

Case V.—Patient of Dr. Joel Grosner. Laparotomy at St. Mark's Hospital for bilateral pyosalpinx with right-sided ovarian abscess. Removal of pus sacs complete. Out of bed on fifth day. Sent home on the tenth day. Called at my office on the thirteenth day the picture of perfect health.

Case VI.—Patient of Dr. H. O. Carrington. On June 19, 1906, at Post-Graduate Hospital, supravaginal hysterectomy for large fibroid tumor of the uterus. Out of bed on the fifth day. Sent home on the tenth day.

Case VII.—Service case at Post-Graduate Hospital. Admitted in a cyanosed condition with high temperature and rapid heart action. Ruptured abscess suspected and operated a few hours after admission. Large double tuboovarian abscesses found on abdominal section done June 30, 1906. Rupture during operation. Cigarette drain gradually removed during six days. Out of bed eighth day. Sent home on fourteenth day. Examined four months later and scar found to be perfect.

Case VIII.—Case of Dr. M. Cisin. Total abdominal hysterectomy for large fibroid uterus with elongated cervix at Beth Israel Hospital on July 3, 1906. Out of bed on eighth day and sent home at end of two weeks.

Case IX.—Service case at Post-Graduate Hospital, operated July 27, 1906. Laparotomy for ruptured extrauterine pregnancy. Wound closed without drainage. Patient out of bed on the fourth day, and sent home on the tenth day.

Case X.—Service case at Post-Graduate Hospital. Had had laparotomy done five months previously. Second laparotomy, August 2, 1906. Removal of right adnexal inflammatory mass. Exsection of thickened and adherent omentum. Separation of extensive adhesions to abdominal wall and elsewhere. Exsection of blood cyst from left ovary, amputation of outer third of this tube and suture of ovary to stump. Out of bed on seventh day. Presented perfect scar two months later.

Case XI.—Service case at Post-Graduate Hospital. Woman with six months' baby at the breast. Laparotomy on August 18, 1906, removing a large left-sided multilocular ovarian cyst. Partial oophorectomy of left-sided cystic ovary. Ventrosuspension. Resumed nursing forty-eight hours after the operation. Out of bed on the eighth day. Three months later presented ideal abdominal scar.

Case XII.—Case of Dr. Aaron A. Mendel. Vaginal hysterectomy for carcinoma uteri at Post-Graduate Hospital on September 7, 1906. Out of bed on the seventh day. Left for home on the tenth day.

112 East Sixty-first Street

THE PROGNOSTIC VALUE OF THE DIAZO REACTION IN TUBERCULOSIS;

WITH INTERESTING OBSERVATIONS AS TO RACIAL DIFFERENCES IN WHITES AND BLACKS.*

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THE value of the diazo reaction as a prognostic sign in tuberculosis is no longer a disputed question. For the past ten years it has been subjected to the most critical observation, until now it is generally accepted as a fact that the persistent presence of a marked diazo reaction in tuberculosis means an early fatal termination. There has been much literature published on this subject in the last eight years, from which I gather the consensus of opinion is that it is a bad prognostic sign.

In 1899, Michaelis[1] reported his observations in 106 cases of tuberculosis, as to the value of the diazo reaction as a prognostic sign. Of these 106 cases, the diazo reaction was found in 75, and was absent in 31. Of those patients giving the reaction, 89 per cent. either died or grew worse while under his observation. Of those not giving the reaction, 87 per cent. gave good results with treatment.

Karl von Ruck[2] does not give a hopeless prognosis in every case where the diazo reaction is present. He has seen a weak reaction disappear permanently upon the administration of hot water internally along with mild diuretics.

Wood,[3] of St. Luke's Hospital, New York, reports 230 cases of tuberculosis. Fifty-two of these died in the hospital. Of these 52 cases, 90 per cent. gave a persistent, strong diazo reaction.

Upson[4] reports that his experience goes to show that the persistence of the diazo reaction in a known case of tuberculosis is of considerable value as an unfavorable prognostic sign.

I wish to add to the above opinions my own, which has been formed after the observation of 100 cases of tuberculosis which have come under my care. Until I came to Greensboro, my experience in tuberculosis work had been confined to the observation of cases which were under the care of my father, Dr. John Hey Williams of Asheville, N. C., and of Dr. Karl von Ruck of the Winyah Sanatorium, Asheville, N. C. Since neither of these men treat the disease in the negro race, I never had the opportunity to observe the disease in the blacks. Since coming to Greensboro I have made no distinction in my practice as to race, and have observed tuberculosis in its various stages in both whites and blacks.

It is my custom to make a careful and complete urinary analysis in every case, and the diazo reaction is one thing in particular that I always look for, believing its presence or absence a valuable prognostic sign. My experience along this line has been such as to confirm the opinions of those above quoted, that is in the white race. As to the negro race, my observations are peculiarly interesting, especially in that I have never seen any report bearing upon the diazo reaction in the urine of the tuberculous negro.

Of the 100 cases which have come under my care, 73 have been in the white race. Of these, 38 were advanced cases, with 23 giving a diazo reaction. Of those giving a diazo reaction, the diazo disappeared in 5 cases, upon the application of hot water and salol internally. All of these gave a weak reaction at the start. Of these 5 cases, the diazo reappeared in 3, persisted, and the disease grew worse. The two patients in whom it did not recur improved under treatment, are still living, and there is an apparent arrest of the disease. The other 18 patients continued to give a marked and persistent diazo; all of them either died or grew worse.

In my second stage cases, I had one which, upon admission to treatment, gave no diazo reaction. During the first five months of treatment, improvement was rapid. This patient interrupted treatment for one week, going to her home in Georgia. During her absence, she contracted a very severe cold, which lighted up her trouble to the extent of marked severity, a caseous pneumonia developing, and a marked diazo reaction appearing, which remained persistent. She rapidly grew worse, and within six months from the time the diazo appeared she died.

On admission, one of my first stage cases gave a weak diazo. This patient gave a history of typhoid fever just two months previous to my seeing him. He left Greensboro, going to the mountains of Virginia. Upon his return, a urinary analysis showed an absence of the diazo reaction. There was not enough tuberculous trouble, and it had not progressed to the stage necessary to produce a diazo, and I believe that the reaction in this case was due to a persistence from the typhoid fever.

So, of my white patients I got a diazo in 23 of an advanced stage, 21 of whom either died or grew worse. One patient in the second stage developed a diazo at the fifth month, grew worse and died. One first stage case presented a diazo on admission, which I believe to have been due to persistence from typhoid fever, and which disappeared without treatment. Eliminating this last case, I got a diazo reaction in 24 white patients, 22 of whom either died or grew worse. So in 88.5 per cent. of my cases giving a diazo, the prognosis was bad; while in 11.5 per cent. the prognosis was good. I wish to emphasize the fact, however, that in the 11.5 per cent. of cases giving the diazo, the reaction was a weak one, promptly disappeared on treatment, and did not recur. Of 40 advanced stage cases in the white race, I got a diazo reaction in 24, or 60 per cent., 88.5 per cent. of which either died or grew worse. The 16 advanced cases which did not give a diazo, either improved or the disease was arrested.

From this observation, the logical deduction is that, in the white race, the presence of a persistent diazo reaction is of an unfavorable prognosis; while the absence of the diazo reaction in the white race is of a favorable prognosis.

Of my 100 cases, 27 were in the negro race. Of these, 15 were patients in an advanced stage, 8 of whom died, while 3 grew worse; the rest recovered or improved. There were five negro cases in the second stage, all of which either improved or recovered. There were 7 in the first stage of the disease, 5 of which took treatment, making an apparent recovery. Of the 2 not taking treatment, I have heard nothing further. In all of my negro cases, of all stages, never once have I found a diazo reaction. Those patients who died, lived from three days to ten months after I first saw them.

It is peculiarly striking that in as large a number of cases as 27, 15 of which were advanced

* Read at Medical Congress, 8th District, North Carolina, Winston-Salem, N. C., January 7, 1907.

stage cases, I should find an absence of the diazo reaction in every one. I have seen the diazo in the negro race in cases of typhoid fever, which goes to show that the diazo is a possibility in the blacks. It does, however, lead me to believe that possibly the chemical substance in the urine which produces a diazo reaction may be different in tuberculosis and typhoid fever. Also, that the chemical substance which produces the diazo in tuberculosis is not found in the urine of the negro suffering from this disease. This I frankly confess to be solely theoretical. It may be that, in the future, I shall find the diazo reaction present in the negro tuberculous urine, and that the cases which I have already observed are not sufficient in numbers to give accurate conclusions. It is strange to me, however, that out of 40 advanced cases in the white race, I should find a diazo present in 24, while in 15 advanced cases in the negro race, I should find it absent in every one of them. I feel that it is a point which is entitled to further and careful investigation.

My method of application of the diazo test is as follows: A specimen of urine, taken from the first passed in the morning, is selected. As soon as possible after its passage I make the test. If my first test is negative, I allow the urine to stand for twenty-four hours and again test it. I do this for the reason that on three different occasions, when associated with the Winyah Sanatorium at Asheville, N. C., I applied the test to specimens of urine which were still warm from the body heat, and failed to get a diazo reaction; yet, allowing the specimens to stand for twenty-four hours, testing again, in each instance I obtained a diazo reaction, which shows that a single test is not reliable.

The reagents which I use are three in number: Sulphanilic acid solution, sodium nitrite solution, and ammonia solution. To make the first, or sulphanilic acid solution, I dissolve crystallized sulphanilic acid in 5 per cent. hydrochloric acid to 1 per. cent. The second, or sodium nitrite solution, I make by disolving sodium nitrite in distilled water to 0.5 per cent. The third, or ammonia solution, is 10 per cent. aqua ammonia.

To apply the test, I put 5 c.c. of the sulphanilic solution in a test tube, to which I add from a pipet three drops of the sodium nitrite solution. This I thoroughly shake. I then add an equal volume of the urine to be examined and thoroughly mix. To this I add about 1 c.c. of the ammonia solution. If the diazo reaction is present, upon thoroughly shaking the foam will have a pink to a cherry-red color; and if allowed to stand for twenty-four hours, a dark green precipitate forms. The fluid will sometimes have a marked cherry-red color, yet the foam will be a pure white or a lemon-yellow color. This is not a diazo reaction. Occasionally, however, a specimen will give a white or yellow foam, and if allowed to stand for twenty-four hours, will give a greenish deposit. This is a diazo reaction.

It is therefore imperative, in order to determine the presence or absence of a diazo reaction, that we examine not only the fresh specimen, but also one which has stood for twenty-four hours. Also having made the test, we should allow the test tube, with the mixture in it, to stand for twenty-four hours, should we fail to get the coloration of the foam, so as to observe whether or no a greenish precipitate forms.

The conclusions which I deduct from these observations are:

(1) That for accuracy, should the fresh specimen fail to give the diazo reaction, we should allow the urine to stand for twenty-four hours and examine again.

(2) Having made the test, the foam failing to show the reaction, the mixture should be allowed to stand for twenty-four hours to see if there is or is not formed a greenish precipitate.

(3) That the absence of a diazo reaction in white tuberculous cases is of a favorable prognosis, as a rule.

(4) That the presence of a diazo reaction in white tubercular cases is of an unfavorable prognostic value.

(5) That the absence of the diazo reaction in the tuberculous negro is of no prognostic value.

(6) That there is possibly a racial difference between the whites and blacks which accounts for the absence of the diazo reaction in the urine of the tuberculous negro, and the presence of the diazo reaction in the urine of the white tuberculous in the advanced stage.

REFERENCES.

1 *Journal of Tuberculosis*, Vol. 1, p. 219.
2 *Ibid.*, Vol. 2, p. 468.
3. MEDICAL RECORD, April 10, 1901.
4 *Journal of Tuberculosis*, Vol. 4, p. 366.

Intestinal Antisepsis in Fevers.—William F. Waugh declares that in every febrile disease, specific or otherwise, there is necessarily intestinal decomposition, toxin formation and absorption, and toxemia. He believes that about one-third of the fever and other symptoms may be credited to this cause, since the illness decreases in about this proportion after the bowels have been cleaned out and disinfected. The various symptoms are relieved to a much greater degree. These considerations apply to all fevers equally. When the deadly infectious nature of a typhoid stool is taken into account, it cannot be considered as a fit dressing for an ulcer. Cleanliness and asepsis are as desirable here as elsewhere. The writer expresses his preference in the choice of antiseptics for the use of the sulphocarbolates, following a complete emptying of the alimentary canal by doses of calomel, salines, and colonic flushings. These drugs are perfectly safe and never cause hemolysis or hematinuria. They are efficient and inexpensive. There is little taste when they are taken in hot water solution. When chemically pure, they are far more apt to settle an irritated stomach than to cause irritation. Toxic effects are not to be apprehended from overdosage.—*The American Journal of Clinical Medicine*

Alcoholism, Speed Mania, and Objectless Activities.—William Lee Howard discusses the effects of the hurry and unrest of modern life. Explosions of physical and psychical energy are continually taking place in the normal individual. They are disastrous or otherwise, according to their direction and the conditions coexistent with them. The writer believes that it is the study and supervision of these psychical explosions that will ultimately result in the thorough understanding and control of the effects of alcohol and those of its congeners, morphine and cocaine. He calls attention to the speed mania which so often attacks automobilists as one evidence of these increasing explosions of psychical energy. It is an objective symptom of the high nervous tension characteristic of the present day. He calls it a sociologic toxin. Relaxation, both mental and physical, is its antidota. That which is often called courage by the unthinking is in reality a psychic blindness to reason. Alcohol as well as the toxins of excitement can produce this. The writer believes that the automobile offers a wholesome vent for the reckless courage which otherwise would go to disorder and riotous excess.—*The Quarterly Journal of Inebriety.*

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THE LOWERED BIRTH-RATE AMONG PROSPEROUS NATIONS.

A LOWERED birth-rate would seem to go *pari passu* with an increase of material prosperity and with a high degree of mental culture. France is the most conspicuous example of the truth of this proposition. On the whole, she is perhaps the most prosperous nation on earth, in that property there is divided upon a fairly equal basis. There are not such numbers of immensely rich individuals as in America and in Great Britain, but neither are there so many people in extreme poverty, in many instances verging on starvation, as there are in Great Britain. In a word, property is more equally divided in France than in any of the great countries of the world. As to mental culture, surely no race on earth can surpass the French. But the birth-rate of France is the lowest of any nation, nor is this a coincidence. America is now the richest country on the globe; her prosperity increases by leaps and bounds. Again, mental culture among all classes of native Americans has reached a very high standard. Indeed, native-born Americans are probably the best educated people on the face of the earth. Literature and science in America has made and is making great strides. But the birth-rate among native-born Americans has now for some years showed a steady and progressive decline. In place of the large families which used to distinguish Americans of native birth, one finds now families of two, and at the utmost three children.

Great Britain is very rich, and possesses a very highly-cultured section of its population, including many of the most brilliant representatives of literature and science in the world. The birth-rate of Great Britain, however, is falling lamentably, is exciting alarm, and giving rise to much discussion among thoughtful persons. With the exception of France, the birth-rate of Great Britain is the lowest of all the European countries. The annual report of the Registrar-General of England for 1905 has been issued recently, and a large portion of this report is given over to a consideration of the lowered fertility of English women and its effect on the birth-rate. According to the report, during the past thirty-five years the English birth-rate has fallen to the extent of 23 per cent. Basing the calculation on the proportion of births to possible mothers—women living at child-bearing ages—the decrease in the birth-rate for the period mentioned amounted to 29 per cent. In round numbers, 17 per cent. of this decline in the past thirty-five years is to be ascribed to the decrease in the proportion of married women of child-bearing age, and 10 per cent., perhaps, to the decrease of illegitimacy. The greater part of the remaining 73 per cent. of decrease is believed to be due to deliberate restriction of child-bearing by the people themselves. In 1876 the English birth-rate reached its high-water mark, 36.3 per 1,000 living; in the year 1905 it had dropped to 27.2 per cent.

With the advance of prosperity the birth-rate of Germany, although it still exceeds by far that of France and England, is nevertheless falling, and it is only more or less primitive countries like Russia that continue to add to their population at a rapid rate. Riches and sophisticated ways do not go hand in hand with increase of population.

As to whether it is well that races should increase and multiply freely is a point regarding which much may be said on either side. President Roosevelt is of the opinion that the larger the family the better it is for the country. This is very questionable, and especially in a country of limited area and with an overflowing population, like Great Britain, the subject for economic reasons at least is a debatable one, although, of course, restriction of child-bearing by artificial means is to be condemned.

THE FERMENTATION TEST FOR DRINKING WATER.

THE presence in water of ammonia, nitrates, and nitrites, together with considerable quantities of nitrogenous organic substances, indicates contamination with house drainage, and the simultaneous occurrence of large quantities of chlorine compounds indicates the presence of urine. Water cannot be regarded as sufficiently pure for drinking if it contains more than a trace of ammonia or more than 3 parts of chlorine, or 1.5 parts of nitric and nitrous acids in 100,000 parts. Serious epidemics, however, are occasionally produced by water which has successfully passed this chemical test and is also unobjectionable in taste and smell. This is due to the presence of pathogenic bacteria. Now, most specimens of water, like the air and the soil, contain bacteria in greater or smaller numbers. If a measured quantity of the suspected water is added to a mixture of bouillon and gelatin, and the mixture is allowed to congeal, each bacterium forms the nucleus of a colony which soon becomes large enough to be seen with the naked eye. Consequently, the number of organisms in the water can be determined by counting the colonies in the jelly. But this apparently simple method is open to several objections. It makes no distinction between harmless bacteria and disease germs, and, furthermore, the colonies grow slowly, occupying several days in becoming large enough to be counted. The gelatin culture method is suitable only for the regular and repeated examination of water of which the bacterial content is approximately known. A sudden large increase in the number of colonies then indicates a new contamination, but gives no information concerning its character.

Quite recently a new method has been introduced which is both simpler and more reliable. The impurities which render water dangerous to health are derived almost exclusively from human excretions,

and principally from feces, which appear to be the sole source of infection in cholera and dysentery, while urine also plays a part in the dissemination of typhoid fever. Now, all human feces contain immense numbers of *Bacillus coli*, while the germs of typhoid fever, cholera, and dysentery are present, if at all, in much smaller numbers. Hence it is easier to detect the *Bacillus coli* than the organisms above mentioned, and its detection is further facilitated by two properties which it possesses. It is one of the many microorganisms which cause sugar to ferment and evolve carbon dioxide, and it thrives when heated to a temperature which is fatal to most pathogenic organisms.

Surgeon-General Hammerschmidt, writing in *Die Umschau* of January 12, 1907, says that Eijkmann has utilized these properties of the *Bacillus coli* in the examination of water. The water, mixed with small quantities of glucose, peptone, and common salt, is placed in a J-shaped or barometer tube of glass and exposed to a temperature of 115° F. The short, open branch of the tube is provided with a bulbous expansion for the reception of the liquid forced by the gases of fermentation out of the long, closed branch, which at first is completely filled with the water under examination. The mouth of the short branch is stopped by a pledget of cotton wool to exclude dirt and atmospheric organisms. When water containing coli bacilli was subjected to this test, Eijkmann found that the liquid became turbid throughout, and there was more or less evidence of the formation of gas. With pure water, on the other hand, no gas is ever found, the only change being an occasional turbidity in the open branch of the tube after the experiment has continued forty-eight hours.

This simple test has been proved reliable by a long continued series of experiments. Unpolluted water taken from good city services, clean wells, springs, and woodland ponds, even very muddy water from marshy pools, if entirely free from human excretions, produced no fermentation, but river water at all contaminated with sewage fermented at once. The rapidity of the development of gas and turbidity depends upon the number of coli bacilli, but the test is so delicate that in several instances positive indications were obtained from pure water to which coli bacilli had been purposely added in a proportion as small as one bacillus in from 10 to 20 c.c.

SULPHUR IN THE TREATMENT OF MALARIA.

Although quinine must be acknowledged to be the most important factor in the treatment of malaria, it should by no means be regarded as the only one, for there are abundant proofs that, particularly in some of the chronic forms, the administration of quinine alone is altogether insufficient to accomplish the desired result. In a recent communication in the *Archiv für Schiffs- und Tropen-Hygiene*, Vol. X., No. 16, Diesing, who has had considerable personal experience with tropical diseases, calls attention to the value of sulphur as a prophylactic and curative measure in malarial infections. He found that among the natives of some of the South African countries, sulphur fumigations were commonly practised, the patient shutting himself or herself in a tightly closed hut and inhaling as long as possible the dioxide which resulted from the burning of the sulphur. In other instances the substance was given in the form of potassium sulphate dissolved in water. In the cases which he describes the fever disappeared within twenty-four hours, and a systematic examination of the blood showed the absence of the characteristic parasites. As the treatment indicated was combined with measures productive of extreme diaphoresis, Diesing was inclined to believe that the latter had an important bearing on the disappearance of the malaria, for it has often been observed that the natives could overcome the attacks by this means.

It is possible, however, to advance a very plausible theoretical explanation of the efficiency of sulphur preparations in malaria. It is well known that pigment constitutes an important factor in the development of the specific parasite, and is absorbed in large quantities from the red blood cells of the patient. The more firmly the hemoglobin is united to the red cells, however, the less the amount which can be taken up by the malarial organism. It has been found that sulphur, particularly when it is absorbed through the lungs in the form of sulphureted hydrogen or sulphur dioxide, unites with the hemoglobin to form sulphomethemoglobin. The latter is exceedingly stable, and it may be assumed that the resistance which it offers to the action of the oxygen of the air is similarly exerted against the disintegrating properties of the malarial parasites. We may then suppose that the development of generations of malarial organisms is interfered with because the necessary amount of the essential pigment is not at hand. The writer was so impressed by these facts that he employed a sulphur cure in his own case, and found that the parasites were promptly eradicated from the blood picture. Not only must these sulphur treatments be regarded as curative, but they also apparently possess a prophylactic value, for patients treated in this manner have been found to withstand the onslaughts of malaria on their return to the infected districts without a resort to quinine.

The observations noted are of extreme interest, and although not confirmed by the test of time or practice, ought to stimulate further research in this field. Sulphur baths, such as recommended by the author, are not difficult to obtain, and if they continue to meet with the good success in other hands which was achieved in the cases under Diesing's observation, the fact must be accounted a signal advance in the treatment of the dread malarial poisoning.

THE CAUSE OF DEATH IN ACUTE DISEASES OF THE PANCREAS.

Until a comparatively short time ago but little was known of acute pancreatic disease or the causes which lead to the rapidly fatal issue in many of the cases. Our knowledge of the subject is by no means complete, yet it has advanced sufficiently to permit of considerable progress in the treatment of the condition. In some experiments recently made, Guleke has found that by the production of an artificial embolus or the injection of various

fluids into the principal excretory duct of the pancreatic gland of an animal it is possible to produce a condition which in its clinical as well as pathological features closely resembles the acute hemorrhagic pancreatitis of the human subject. Guleke concludes, as the results of his experiments, that the pancreas itself as it undergoes necrosis in the body elaborates a toxic substance which is capable of causing death. It seems immaterial whether the pancreas of the experimental animal itself or one from another animal which has been introduced into the abdominal cavity undergoes necrosis, the result is the same. Guleke's observations therefore point to an acute intoxication from pancreatic necrosis as the cause of the fatal issue in these cases.

Further experiments have been made along these lines by v. Bergmann (*Zeitschrift für experimentelle Pathologie und Therapie*, Vol. 3, No. 2), who worked in conjunction with Guleke in an effort to determine the active agent which underlay this process. It was evident that the toxin developed in the normal as well as in the diseased pancreas and its secretions, but what seems most interesting is the fact that an almost perfect degree of immunity could be secured in dogs by the previous injection of trypsin in cases in which an artificial pancreatitis was produced or the gland from another animal had been implanted in the abdominal cavity. Acute pancreatitis seems to be a true autointoxication, and a more complete trial of the procedure indicated in this paper may lead to the adoption of some means by which the development of this fatal condition may be inhibited.

Retention of the Placenta.

It is generally considered good practice in the management of the third stage of labor to instruct the attending nurse or midwife to keep her hand pretty constantly on the fundus of the uterus, and to knead this vigorously if any relaxation of the organ takes place. This is done in order that concealed hemorrhage may not occur, and that any tendency to gaping of the uterine sinuses may be forestalled by the prompt induction of uterine contraction through the mechanical stimulation. Durlacher (*Münchener medizinische Wochenschrift*, February 19, 1907) expresses an opinion which is somewhat at variance with these rules. From an analysis of seventy-eight cases in which he has found it necessary in private practice to perform manual extraction of the placenta, he draws the conclusion that undue manipulation of the fundus is a very fruitful cause of imperfect separation of the placenta, and therefore of retention of the afterbirth. He ventures the opinion that the best prophylactic against retention of the placenta lies in not touching either the uterus or the abdominal walls after the birth of the child. This mode of procedure would involve such skillful observation of the patient's general condition, inspection of the abdomen, etc., as not to be feasible except in hospital practice, where plenty of highly trained assistance is available, and Durlacher therefore suggests that the following instructions be given to midwives: After the birth of the child the mother must be kept under constant careful observation. If it is not possible to perceive the position of the fundus by inspection of the abdomen, the hand should be gently applied to the abdominal wall and the position of the uterus determined. As the uterus alternately contracts and relaxes in the third stage as well as before, if the fundus should appear soft, in case there is no noteworthy hemorrhage, the hand should be kept quietly in position until the organ contracts again of its own accord. If the placenta has not been expelled at the expiration of an hour after the birth of the child, the position of the fundus should be ascertained as indicated. If it is below the umbilicus this is a sign that the afterbirth has not been detached and will probably not be spontaneously expelled, so that a physician should be called in. If, on the other hand, the fundus is above the umbilicus, the midwife may endeavor to express the placenta during a uterine contraction. If a hemorrhage of importance takes place the midwife should immediately have a physician summoned, and in the meanwhile should continue to massage and knead the fundus as long as the bleeding continues. We fancy, however, that a great deal of corroborative evidence of the value of such a mode of procedure will be necessary before obstetricians, as a class, abandon a doctrine whose practical application has so far seemed productive only of the best results.

Exophthalmic Goiter.

Great interest has been shown in the study of this subject by the medical profession for some years. Various theories have been propounded by different authorities and many treatises have been written to uphold these theories. Among the leading theories is that of Buschan, who believes that exophthalmic goiter is due to disturbed innervation. Other investigators believe that the seat of the disease is to be found in the medulla oblongata. Still others advocate the theory that this form of goiter is due to an affection of the sympathetic nerves. It has been said that this affection is a disease of the central nervous system, with a coexistent chronic intoxication. The theory embraced by Möbius is that exophthalmic goiter is due primarily to "hyperthyroidation," that is, to a disturbance of the function of the thyroid. This condition is directly opposed to the failure of thyroid function. Clinical evidence seems amply to support this theory. In the *Revue de Médecine*, December 10, 1906, Jean Lépine refers to the discussion of this subject at the Congrès des Aliénistes et Neurologistes, which met at Bordeaux in 1895. At this time two theories were proposed to explain the obscure pathogenesis of exophthalmic goitre. The first considered this disease a neurosis; the second considered it a disturbance of thyroid functions. The writer then discusses the methods tending to produce antithyroid immunity and describes his own personal investigations, as well as those of other authorities. Thyrotoxic serums prepared from the thyroid bodies of animals have been found to be comparatively inactive in relation to exophthalmic goiter in man. When, however, human glands were used, the experiments met with success. Lépine then refers to the report of Rogers, which was given to the New York Academy of Medicine on January 18, 1906. Various cytotoxins were prepared by Beebe for this work. The results of this first work showed that in a general manner these patients derived more advantage from the serum prepared from the diseased gland than from that prepared from the normal thyroid body. These authorities insisted upon the necessity of a long course of treatment. The writer believes that although serum therapy will probably be of aid in the treatment of Graves' disease, too much enthusiasm should be guarded against in relation to this method. In order to cure ex-

ophthalmic goiter it is necessary neither to suppress nor to restrain the thyroid function, but an effort ought to be made to do away with the effects which the reciprocal actions of vitiated secretions, both thyroid and others, have upon the nervous system. The vicious circle must be destroyed. It may be useful in this attempt to combat the general state of intoxication by specific antitoxins. This is the rôle of serum therapy.

Hydatid Cysts of the Kidney and of the Spleen.

It has been learned from the compilation of statistics that the genitourinary system ranks second as the seat of hydatid disease, although in comparison with the liver this location is rare. In some cases the kidney is converted into a huge cyst which resembles hydronephrosis. In an interesting article on hydatid cyst of the spleen in the *Gazette des Hôpitaux*, October 27, 1906, André Martin declares that the beginning of a hydatid cyst of the spleen may present variable symptoms. Often at the beginning the evolution is insidious and the swelling is recognized only by chance. In other cases pain develops months or years before the appearance of the cyst; in still other patients there exists a profound anemia, the cause of which cannot be determined, while at more or less regular intervals painful crises in the epigastrium and the left hypochrondrium occur. An important symptom is cardiac pain and especially the impossibility of the patient to assume the left lateral decubitus. Osler says that a diagnosis of hydatid cyst of the kidney is possible only by puncture and by examination of the fluid. The cyst sometimes perforates into the pelvis of the kidney and parts of the cyst may be discharged with the urine, giving rise to renal colic. A case is reported in which the patient for many months passed at intervals numbers of small cysts in the urine. Nevertheless the general health was hardly disturbed, aside from the attacks of colic, which occurred while the parasites were being voided. In the cyst of the spleen of the type of ascending evolution a differential diagnosis must be made from affections of the pleura and the lungs. In the case of cysts with descending evolution mesenteric cysts must be eliminated. The symptoms are the same, constipation, vomiting, dyspeptic disturbances; but the tumor of the mesentery is medium, while the splenic tumor is a little to the left. In the cyst of the spleen of posterior evolution especial care must be made to differentiate this from affections of the kidney with which it can easily be confused. In the cyst of the spleen with anterior evolution the diagnosis appears to be more easy. As to the treatment of echinococcus disease medicines are of no benefit. Martin declares that the most simple method of treatment is puncture, but this is not exempt from danger. Splenectomy when the spleen is affected assures rapid and radical cure.

The Dermatological Congress in New York.

As we have previously noted, the Sixth International Dermatological Congress will be held in this city, September 9 to 14 of this year. The program arranged is an attractive one, and it is expecially noteworthy that the subjects chosen for general discussion are not of exclusive dermatological interest, but appeal to the general practitioner as well. The first theme, "The Etiological Relationship of Organisms Found in the Skin in Exanthemata," gives promise, not only of able presentation, but also of keen critical discussion, while the advantage to be derived from acquiring a scientific basis for quarantine and prophylaxis in these diseases is so great that this investigation must interest everyone concerned in the problems of hygiene and public health. The second theme, "Tropical Diseases of the Skin," while not of so much general importance, still is particularly apposite now that our attention is so frequently turned to the medical conditions of lands near the equator, and that we are apt to encounter tropical diseases or their sequelæ in the persons of those returning from our island possessions. The third theme, "The Possibility of Immunization Against Syphilis" and "The Present State of Our Knowledge of the Parasitology of Syphilis," takes up a subject in which until three years ago all advance seemed blocked by the impossibility of experiment, due to the lack of a susceptible animal. Metchnikoff's demonstration that the chimpanzee, when inoculated with human virus, will develop not only a chancre but also, as a rule, typical secondary lesions on the skin and mucous membranes, was the starting point of hundreds of animal inoculations which have revolutionized our knowledge of this disease, and whose significance is as yet not fully appreciated. Whatever our interpretation of the presence of the *Spirochæta pallida*—and the conviction that it is indeed the long-sought causative organism is steadily gaining ground—the investigations of the last three years have solved many long-debated problems, and give promise of yet greater advances in the near future.

The Treatment of Varicose Veins.

Nearly half a century ago Desgranges employed for the treatment of varicose veins a method that had been suggested by Pravaz for use in cases of aneurysm. It consisted in causing thrombosis in the vessels in question by the injection of a few drops of concentrated solution of ferric chloride. Although Desgranges is said to have had a certain amount of success with the method, its disadvantages are so obvious that it is not astonishing that it never became popular. Trendelenburg's operation of ligating the saphenous vein high up was founded on correct principles, and has been widely used, giving according to Tavel (*Berliner klinische Wochenschrift*, February 18, 1907) about 75 per cent. of permanent cures. This author has attempted, by means of a combination of the old idea of Pravaz and Desgranges with that of Trendelenburg, to obtain better results, and states that he has now applied his procedure with success in twenty-seven cases. Briefly stated, the operation is performed as follows: With the patient standing, so as to cause the veins to become prominent, the varicosities and the course of the saphenous vein are indicated on the skin by means of fuchsin. The saphenous vein is then ligated in the upper portion of its length, and preferably a short section is excised in order to avoid any possibility of regeneration. The next day the process of inducing thrombosis in the varicosities is begun by injecting into the dilated vessels small amounts of 5 per cent. carbolic acid solution. This effects a local reaction of the vessel wall, which leads to thrombosis, and the injections are repeated at intervals of a few days until the entire area has become thrombosed. Ultimately the thrombi become organized and the veins are converted into fibrous cords. The treatment is somewhat painful, is often accompanied by elevations of temperature, and more or less time must usually be spent in bed, so that its advantages seem rather questionable.

News of the Week.

Offensiveness of Dictatorial Methods in Editing Official Journals.—Since "every rose has its thorn," it should not be overlooked at this time that the flowery probabilities of mutual scientific medical journalism might easily be inhibited, and even destroyed, by the thorny possibilities of selfish time-serving desires. In any event, common justice demands that all questions of mutual material interest, and others of general interest to the profession of the State, should find free and impartial utterance through the pages of its own journal. The presence of a spirit which contemplates that the entire membership of the profession of this State be not made familiar by its own servants with the facts relating to the respective differences in all matters of common importance is offensive to the principles of American institutions, and to those of fair dealing in all lines of manly action.—From the presidential address before the Medical Society of the State of New York by Dr. Joseph D. Bryant, President-elect of the American Medical Association.

Ray Brook Tuberculosis Sanatorium.—The Board of Trustees of the New York State Hospital for Incipient Tuberculosis at Ray Brook makes an appeal to physicians for greater efforts to recognize cases of pulmonary tuberculosis in its earliest stages, and states that the institution still suffers under the difficulty of securing patients whose lesions are slight. In the hospital there are now over thirty vacant beds, and this is said to be due to the fact that suitable cases for treatment, and for which the hospital was built, cannot be secured. Out of 940 applications for admission to the hospital last year, 220 patients were, following examination, received for treatment, the remaining 720 being too far advanced to be accepted. Of the 220 received, 65 per cent. only were actually incipient cases; the balance on admission were found to be suffering from more advanced disease, and were reclassified at the hospital. In the last annual report of this hospital it is shown that 85 per cent. of incipient cases were discharged apparently recovered. This class constituted 65 per cent. of all cases under treatment. Of the moderately advanced cases 23 per cent. were discharged apparently recovered, and of the advanced cases none were so discharged. The possibility of obtaining good results is plainly seen, therefore, to depend in the main upon the amount of tuberculosis present when the patient is placed under treatment. The definition of an incipient case, as adopted by the National Society for the Study and Prevention of Tuberculosis, is as follows: "Slight initial lesion in the form of infiltration limited to the apex or a small part of one lobe; no tuberculous complications; slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight); slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest; expectoration usually small in amount or absent; tubercle bacilli may be present or absent." It is desired to receive patients of this type to the full capacity of the Ray Brook institution.

The Milk Question.—At a meeting of the members of the Department of Health held last week resolutions were adopted requiring farmers and others producing and handling milk to exercise greater care than has been the case in the past to prevent contact with the dairy products by persons suffering from infectious diseases. One resolution provides that after April 1 every creamery or milk station which ships milk or cream, or both to the city of New York, shall be required through its agents to furnish to the Department of Health on Monday of each week a report stating the existence or nonexistence of either typhoid fever, tuberculosis, diphtheria, scarlet fever, dysentery, or any other infectious disease in the households of all persons employed in the collection or handling of milk, either at the creamery or at the farms or dairies supplying it. Another resolution requires the farmers and dairymen to make similar reports to the creameries every Saturday. Such reports are to be kept on file in the creameries for six months, and shall be open at all times to the inspection of the Health Board. Should one of these diseases break out in the family of any employee the latter shall be excluded from duty in connection with the handling of milk until a physician certifies that there is no longer danger of carrying the infection. Another resolution regulates the use of water in cleaning milking utensils near a place where typhoid fever or dysentery is known to exist. Failure to comply with these requirements may be sufficient to exclude milk or cream from the offending milk stations or creameries. It will no doubt be easy to induce the persons interested to make out these reports and hand them in, but the reliability of the data furnished in this way can hardly be above suspicion.

A Question of Proprietorship.—Whether the spoils of an operation belong to the victor or the victim is a question that comes up perennially. A recent instance is attracting interest in Germany, in which a patient, relieved of a bladder stone, has refused to pay the surgeon's bill unless the calculus is handed over to him. The stone is being retained by the operator, because it has especial interest, as its nucleus consists of a broken-off catheter tip. It is expected that the matter will go into the courts. No doubt it would be better to make a stipulation in regard to the disposal of such trophies before the operation, as patients would be more likely to be willing to resign all claim to objects of this sort before their removal than afterwards.

The Medical Society of the County of Westchester had its annual dinner at the Hotel Astor on March 19. The society dates from 1797, and claims to be the oldest organization of the kind in the United States. Dr. H. Beattie Brown of Yonkers presided. Dr. E. M. Hermance of Yonkers read a paper on "Pelvic Inflammation" and a discussion by the members followed. There were 123 members present.

Antitoxin from Convicts.—At a recent meeting of the Baltimore County Medical Association, Dr. H. Burton Stevenson said that antitoxins would be more effective if they were prepared in the human body, because only a few animals are susceptible to the diseases of man. He suggested that such antitoxin could readily be produced by using criminals for the production of serums. A law could be enacted making the punishment for certain crimes optional with the convict, imprisonment on the one hand, inoculation with certain disease germs on the other.

A Bill to Prevent Procreation of Certain Criminals.—A bill now before the Indiana Senate provides for the sterilization of confirmed criminals, idiots, imbeciles, and those guilty of the crime of rape. The bill has already been passed by the House. According to the bill, each institution in

the State intrusted with the care of confirmed criminals, idiots, rapists, and imbeciles, is to appoint upon its staff two surgeons, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable, and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation, as shall be decided safest and most effective. It is established that the consultation fee to the experts shall not exceed three dollars in any one case.

Health Defence League Incorporated.—The Public Health Defence League of New York City was incorporated at Albany on March 15. The directors include Austen G. Fox, Ernst J. Lederle, Thomas R. Slicer, and Thomas Darlington of New York, Howard J. Rogers of Albany, Robert E. Belcher of Boston, and Henry W. Cattell of Philadelphia. The organization has for its objects to work against practices and conditions of every kind that are dangerous to the public health and morals and to assist in the enforcement of laws against quackery and charlatanism, and the prevention of adulteration of drugs and food substances, and the sale of narcotics, alcohol, and dangerous substances.

Food-Testing Laboratory for Boston.—At a meeting of the executive committee of the Carnegie Institution held in Washington, D. C., on March 11, it was decided to establish in Boston, Mass., a laboratory for the purpose of conducting experiments in nutrition. An appropriation of $100,000 was allotted for the erection of a building, and the balance is to be devoted to the scientific investigations of the nutritive value of various foodstuffs during the present year. Prof. F. G. Benedict of Wesleyan University was selected as director of the new laboratory.

Women Medical Students in Germany.—According to the *Münchener medizinische Wochenschrift* there are at present in the seven universities of Freiburg, Heidelberg, Tübingen, Munich, Erlangen, Würzburg, and Leipzig, which admit women, 254 female students, a notable increase over previous years. Of these, 116 are studying medicine, 92 philosophy, history, and languages, 28 mathematics and natural sciences, and the remainder are dispersed among various other subjects. Medicine is losing in popularity, and philosophy, languages, and history are gaining more adherents.

Medical Fees in Germany.—Following the example of the physicians of Berlin and Vienna, the members of the Wiesbaden branch of Leipziger Verband have decided to announce to the public an increase of 25 per cent. in medical fees, the change to take effect from January 1, 1907. A minimum has been established of two marks for a visit and one and a half marks for an office consultation.

The New German Reichstag, like its predecessor, has among its members eight physicians.

Christian Science in Delaware.—The Delaware Senate has passed a bill opposed to the practice of Christian Science and faith treatment in that State. The bill had passed the House two weeks before, and, after a final open debate between representatives of Christian Science and the medical profession, was passed by the Senate by an overwhelming vote.

Naturopath Held for Trial.—A self-termed "naturopath" was brought before the Yorkville Court last week charged with practising medicine without a license. An agent of the County Medical Society testified that he had prescribed a dietary régime and hot-air baths for a stiff neck which she consulted him about, and had charged her two dollars for the advice. He was held in $500 bail for trial, as was also a Second avenue druggist, who was accused of prescribing.

Osteopathy Bill.—The Assembly Committee on Public Health has reported a compromise Osteopathy bill which provides that all osteopaths now in the State who are graduates of some osteopathic school are to be recognized by the State, but in future osteopaths must conform to certain regulations concerning their medical education.

Health Statistics in Montreal.—A report just issued by the Health Department of Montreal shows that the death rate of Montreal is larger than that of any other important city of the continent. The rate during the last year was just a fraction less than 22 per 1,000, an increase of 2 per cent. over 1905. At the same time the birth rate is shown to be the highest of any large city on the continent.

New Journals.—A new journal devoted to the subjects of orthopedics, medical gymnastics, and massage appears under the title of *Zentralblatt für Chirurgische und mechanische Orthopädie*. It is a monthly, and is published in Berlin under the editorship of Prof. O. Vulpius of Heidelberg, together with a long list of co-editors comprising many of the best known European orthopedists. Like the other so-called *Zentralblätter*, it consists of several short original articles and a large number of abstracts of the literature relating to the subjects in question. The *British Journal of Tuberculosis* is a quarterly publication of which the first number has been issued. It is published in London and is edited by Dr. T. N. Kelynack.

Journals Consolidated.—The proprietors of the *Medical Era* have acquired the *Medical Mirror*, and in future the combined journals will be issued under the name of the *Medical Era*. The April issue of the *Medical Era* will be the first number of the consolidated journals. The editors will remain as before, Drs. S. C. Martin and Clarence Martin.

Brooklyn Home for Aged Men.—An endowment of over $150,000 has been made to the annex of the Brooklyn Home for Aged Men in Classon avenue and Park place by Mrs. Edward S. Harkness in memory of her father, Thomas E. Stillman, who died in September last. The annex was erected three years ago by Mr. Stillman in memory of his wife, and is known as the Elizabeth Greenman-Stillman Memorial.

Legacy for Yale Medical School.—By the will of the late Gen. Samuel E. Marwin, which has been filed in the Probate Court, $5,000 is set aside for the Yale Medical School and $25,000 for the New Haven Hospital.

Katonah Typhoid Cases.—A report made by Dr. D. D. Jackson, chief chemist of the Water Department of this city, states that the water supply from the Croton watershed shows no evidence of contamination by the recent cases of typhoid fever occurring in Katonah.

The Webster County (Mo.) Medical Society was organized in Marshfield on February 27 by Dr. T. A. Coffelt of Springfield district, councillor for the twenty-fifth district. The following officers were elected: *President*, Dr. M. Highfiell, Marshfield; *Vice-President*, Dr. J. A. Rabenau, Fordland; *Secretary*, Dr. W. R. Beatie, Rogersville; *Treasurer*, Dr. E. M. Bailey, Elkland; *Censors*, Dr. D. A. Will-

iams, Niangua; Drs. W. H. Ballinger and Eli Trimble, Seymour.

Ontagamie County (Wis.) Medical Society.—At the annual meeting of this society held in Appleton on March 6, officers were elected as follows: *President,* Dr. W. N. Nolan, Kaukauna; *Vice-President,* Dr. H. W. Abraham, Appleton; *Secretary and Treasurer,* Dr. M. J. Sandborn, Appleton.

Obituary Notes.—Dr. Edward W. McDonald of Waterbury, Conn., died suddenly of heart failure on March 13, at the age of sixty-seven years. He was born in Limerick, Ireland, but was educated in this country, and received his degree from the University Medical School. He had practised in Waterbury nearly forty years.

Dr. William Lame, a retired physician living in this city, died suddenly on March 13 at the age of seventy-four years. He had practised in St. Catharines, Ont., in Lockport, N. Y., and in Swarthmore, Pa.

Dr. Oronhyatekha of Toronto, Can., died on March 3 in Savannah, Ga., of heart disease and diabetes. He was a fullblooded Mohawk, and was born on the Six Nations reservation near Brantford, Ont., in 1841. He received his medical education in Toronto University and also at Oxford, Eng. He commenced practice in Frankford, Ont., but in 1875 removed to London, Ont., where he remained until 1889, when he took up his residence in Toronto.

Dr. Henry Clay Smith of Kent, Wash., died on March 2, at the age of fifty years. He received his medical degree from the University of Ann Arbor in 1883, and had practised in Portland, Tacoma, and Kent.

Dr. Joseph C. B. Ray of Denver died of pneumonia on March 5, at the age of fifty-one years. He was a native of Kentucky, and for fifteen years practised in Owensboro in that State. He had been a resident of Denver for about six years.

Dr. J. E. Lothrop of Dover, N. H., died of heart disease on March 6. He was born in 1826 in Rochester, and received his medical education in Jefferson Medical College. He was prominent in public affairs and was twice Mayor of Dover.

Dr. Charles M. Fenn of San Diego, Cal., the oldest physician in the city, died on March 7 of nephritis. He was born in Hamilton, O., in 1835, and was graduated from the medical school of the University of California in 1865. He practised for three years in San Francisco and then removed to San Diego. He had held many official positions in San Diego, and for a number of years was Army post surgeon.

Dr. Columbus Hixon of Kansas City, Mo., died on March 7, at the age of eighty years. He was one of the founders of the Kansas City Medical College, and was said to have been the first surgeon in that part of the country to perform a successful cataract extraction.

Mr. James R. Lathrop, for over twenty-three years superintendent of Roosevelt Hospital, died of apoplexy at that institution on March 13. He was born in Poughkeepsie in 1847, and, after serving in the Civil War for two years, he was made chief clerk in the Lincoln General Hospital at Washington. For several years he was in mercantile life, and finally became supervisor at the Bloomingdale Asylum in New York. In September, 1883, he assumed charge of the Roosevelt Hospital, where he had since remained. On account of failing health, he tendered his resignation, to take effect March 1. Mr. Lathrop's executive ability, sterling character, and gracious manner gained for the institution and for himself many friends.

THE TENTH HARVEY SOCIETY LECTURE.

The last lecture of the present series given under the auspices of the Harvey Society was delivered at the Academy of Medicine on Saturday, March 9, in the presence of a large audience. The speaker was Prof. Friedrich Müller of Munich, Germany, and the topic was "Some Neuroses of the Heart." In introducing the speaker, the chairman, Prof. Graham Lusk described the Friedrich Müller Clinic as really typifying the clinic of modern Germany. It consisted of a hospital with 220 beds, looked after by two resident physicians who had been with Prof. Müller for over five years. The clinic also embraced physiological, chemical, and pathological laboratories with the necessary workers. The results of the laboratory were at once applicable to the clinical treatment of the patient, and the whole was coordinated as probably in no other clinic in the world. In opening his lecture, Prof. Müller stated that he believed that observations at the bedside were just as scientific as those of the experimental laboratory. In the study of the heart, however, we had been slow to apply experimental methods; we were only beginning to avail ourselves of experimental pathology in this field.

The speaker then discussed the heart in its physiological aspects. It was only part of the circulatory system, and in the closest relation with the other parts. As was well known, the heart of many animals could be cut out and would continue to beat for some time. This showed, of course, that the nerves to the heart did not originate the movements; they merely controlled them. The blood was not only a lubricant to the heart, but also a stimulus. Ringer's solution had the same effect, and the experiments of Howell had shown it was mainly the calcium ions to which the stimulation was due. Prof. Müller then described in detail the innervation of the heart and the other elements that played an important rôle in the action of the organ. Among the latter was the bundle of His, a structure only recently adequately studied. It consisted of peculiarly-shaped muscle cells described by Purkinje, and lay mostly in the interventricular septum. A considerable part of the bundle was broken up and distributed in the tissues of the apex. It had been found that permanent injury to the bundle led to an irregularity of the heart's action, so that the ventricular contraction no longer followed regularly on that of the auricles. This was met with in a number of clinical conditions, permanent bradycardia among others, and these were, therefore, no longer to be regarded as neuroses of the heart. He outlined the origin and distribution of the vagus and described its two sets of fibers, and also discussed the functions of the sympathetic innervation. The former was probably the more important clinically. It reduced the work of the heart to that degree which was sufficient for the body tissues at that particular time. In considering the innervation of the heart, one had also to bear in mind the vasomotor dilator and constrictor nerves, which were really a part of the cardiac mechanism. The entire regulatory mechanism was of paramount importance, since it responded to all kinds of stimuli.

The speaker then passed on to the subject proper, the various so-called neuroses of the heart. We had come back to believe that there was such a condition as nervousness, though now we called it neurasthenia. In individuals suffering from this condition, there was a low vitality of the mind and of the cerebral centers. The centers were often highly irritable, so that a slight stimulus, instead of remaining more or less confined to one center as it would do

in a normal individual, spread its effects over a wide area of nerve tissue. The symptoms usually associated by clinicians with this condition were alterations in the pulse rate, in its rhythm, palpitation of the heart, fluctuations in blood pressure.

Taking up these various points, Prof. Müller said that alteration of the pulse rate was one of the most common cardiac changes associated with nervousness. The rate of the pulse was often increased, but the increase was seldom permanent. In neurasthenia periods of regular pulse alternated with those of rapid or of slow pulse. If the increased rate were permanent, other lesions should be thought of. With excessive muscular work, as for example in hill climbing, if the condition were due to neurasthenia there would be no dyspnea. If dyspnea were present, or if there were evidences of a defective circulation one should not diagnose a "nervous heart."

Arythmia was seen in nervous heart, but it was not a common condition. There was the so-called "changing pulse," in which only the duration of the diastole was concerned. This was really an exaggerated reflex by way of the vagus. The "pulsus alternans" was never a symptom of nervous heart; it was always associated with some myocardial lesion. Extra systoles constituted one of the most frequent of pulse irregularities. Did this too occur in nervous heart? Prof. Müller thought it did not. This irregularity was always encountered when the amount of work to be done was out of proportion to the heart muscle. So, if there was any damage to the heart muscle one would always find a marked increase in the extra systoles. Perhaps occasionally, with only a little extra systolic irregularity, there was no diseased myocardium, but on the whole this symptom indicated a lesion which would show itself in other ways perhaps several years later.

In discussing palpitation of the heart, the speaker warned against confounding it with high frequency. In true palpitation the shock with the beats was so forcible that the patient should be able to count them without holding the hand to the heart. The physician should control the counts by noting the pulse. Tracings of the apex were apt to throw some light on the cause of the palpitation. In nervous heart the curve rose very suddenly, whereas in the normal heart the ascent on the tracing was more gradual. This would indicate that in the former the systolic contraction reached its maximum very quickly. The first sound in this condition in nervous heart was louder and more accentuated. If the muscles contracted very slowly, as for instance in aortic stenosis, one would miss the first sound entirely. Radial sphygmographic, manometric tracings were also of considerable value in these conditions. The speaker illustrated this by tracings of two kinds of cases.

The blood pressure normally varied within very narrow limits. In nervous heart, on the other hand, there was a liability to great fluctuations. Clinically, the cases then showed liability to flushings of the head, to attacks of fainting, migraine, sudden perspiration, cold hands and feet. The palpating finger could often appreciate the changes in the blood pressure. If the pressure stood permanently high, one would not go wrong in diagnosing a beginning arteriosclerosis. In nervous heart the size of the organ showed no change, although perhaps in cases of long standing there would occasionally be found an enlargement, but this was not at all common.

Feelings as of impending death and painful sensations about the heart were often noted. Occasionally these had their origin in the thoracic wall rather than in the heart. Attacks of angina pectoris, or rather something like that condition, were sometimes encountered. In nervous heart, however, the pain was not really severe. Prof. Müller, in fact, doubted whether pseudoangina pectoris really occurred in nervous heart. If angina pectoris occurred there was probably a real lesion, such as coronary arteritis.

There were a number of cardiac affections formerly regarded as of nervous origin which now were known not to be such. An example of this was the heart in goiter. In Southern Germany many cases of supposed nervous heart were really cases of incomplete hyperthyroidism. Such a heart could be distinguished from the true nervous heart by the fact that the increase in the heart rate was permanent, and the acceleration in general was not as high as in nervous heart. It might be 120 to 140 per minute, whereas the nervous heart often had much faster periods. The presence of tremors, the loss of flesh, a slight soft swelling of the thyroid, these all helped in the diagnosis. The administration of even small doses of thyroidin often established the diagnosis, for it made the hyperthyroid heart worse.

The excessive use of coffee, tea, or tobacco also gave symptoms that simulated a nervous heart. The speaker said tobacco and not nicotine advisedly—for recent work had shown that the nicotine was not the factor involved. Tobacco produced a distinct increase in blood pressure in nervous hearts; sometimes it caused symptoms of a pseudoanginal character. Alcoholic drinks also produced the symptoms of a nervous heart. The worst form was beer. In women and young people even small quantities often produced marked disturbances.

Injured and feeble hearts, such as were met with after acute infectious diseases, also simulated a nervous heart. The poisons of the tubercle bacilli could bring about a similar condition. The cardiac disturbances associated with affections of the sexual organs, *e.g.* arythmia in pregnancy or in disease of the ovaries or uterus, were not referable to a nervous heart. They were more or less obscure intoxications.

Finally, the speaker alluded briefly to paroxysmal tachycardia, a condition often setting in suddenly with a heart rate of 140 to 160, and, after lasting several days, as suddenly ceasing. This would sometimes be found to be closely related to migraine or occasionally to epilepsy. The more thoroughly a physician examined his case, the less often would he make the diagnosis "nervous heart." It should only be made after everything else had been excluded.

Therapeutically, the nervous heart should be treated by attention to the general health of the patient, removing him from overwork, excitement, and worry. A change of environment was excellent. These patients did well in high altitudes. The crowded places, especially the various baths, should be avoided. Above all, no medication directed to the heart should be given.

The Death of Professor Berthelot.—The eminent French chemist, Pierre Eugène Marcellin Berthelot, died suddenly on March 18, at the age of eighty years. He was watching at the bedside of his dying wife, and when told that her life was extinct he rose from his chair, threw up his arms, and fell dead. He had been professor of chemistry at the Collège de France since 1865. He was a member of the Institute and in 1889 was made perpetual secretary of the Academy of Sciences. Among his notable discoveries were smokeless powder and acetylene gas.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

KALA-AZAR—CEREBRAL TUMORS—THE PARATHYROIDS—GYNECOLOGY NOW AND FIFTY YEARS AGO—PROPOSED MEMORIAL—HOSPITAL MEETINGS—THE EPIDEMIC.

LONDON, March 1, 1907.

THE Milroy Lectures this year have been entrusted to Dr. Leonard Rogers, Professor of Patholo— Calcutta, and those interested in tropical discourses will be pleased that he has devoted them to kala-azar, which has spread slowly for the last thirty years up the Assam Valley. The disease is endemic in some districts of India and in its epidemic form seems to be identical with Burdwan fever, and sporadic cases seem to be just the same as the "malarial cachexia," so well known to Indian medical officers and characterized by persistent fever, of an alternating remittent and intermittent type, often mistaken for typhoid, but rapidly leading to a cachectic condition, with great enlargement of the spleen and later of the liver, and extreme wasting. The fever may last months or years. The mortality is from 98 per cent. at the height of an epidemic to 75 per cent. towards the end. The cause is almost certainly a protozoal parasite discovered and described by Leishman and Donovan and which has been said to be one stage of a flagellated parasite, and there are good reasons for thinking that a biting insect is the carrier of the infection. Dr. Rogers dealt in his first lecture with the epidemiological aspect of the disease. Public attention was first attracted to kala-azar in 1882 when Dr. Clarke's report contained notes on 120 cases. It had, however, been known from 1871 to 1876, and Dr. Rogers gave full details of its spread in Assam with a map, charts, and diagrams. The lecturer was selected in 1896 to investigate the disease, and after a year's study came to the conclusion that it was an intense form of malarial fever, an opinion endorsed by Ronald Ross after a personal investigation in 1899. Earlier views, such as attributed the disease to ankylostomias or to epidemic Malta fever, are therefore superseded. Burdwan fever, mentioned above, named after a district it affected in Bengal, must, it seems, be considered the same as kala-azar, of which Dr. Rogers has lately found the parasites in some sporadic cases from Burdwan. Another epidemic in 1808 of the same nature was called kala-dukh. In 1904 Dr. Rogers on visiting the district where it had prevailed found a few chronic cases remaining, and also a number of sporadic cases. In some of these he discovered the kala-azar parasite, so the identity with kala-azar may be regarded as established.

In his second lecture Dr. Rogers described the disease itself—its course, complications, and terminations. He showed that it was not one whit less terrible when considered individually than collectively, as it killed by inches after most prolonged sufferings which we were powerless to effectually check. He showed a number of lantern slides of groups of cases and pointed out their salient features, the most marked perhaps being the tumid bellies, due to enlargement of the spleen and sometimes also the liver, in striking contrast with the wasted face, chest, and limbs. Some slides showed the frequency of cases in children, the incidence decreasing in later decades; others the extreme wasting in the last stages and the dropsical and ascitic form produced by a peculiar intracellular cirrhosis of the liver. The incidence in family, age, sex, race, season having been considered, the type of fever, the blood changes, condition of liver and spleen, and complications were carefully dealt with. Then came treatment, and on this the lecturer emphasized his well known method with massive doses of quinine. If it will not cure, it will often delay the progress so much as to make the patient comfortable for long periods. In view of occasional recoveries from hopeless conditions, Dr. Rogers hopes for the discovery of a better remedy, but in the meantime he gives quinine in massive doses—60 or even 90 grains a day, and says these amounts may be persisted in for months together. The good effect of such doses was shown by a nine months' chart of a child of eight who took 50 grains a day for seven weeks, her weight steadily rising all the time and no ill effect being produced.

In the second Lettsomian lecture Dr. C. E. Beever proceeded to describe six cases of tumor involving the second or middle frontal convolution. In them all there were attacks varying according to the precise position of the tumor. In all the mental condition was dull, slow, or inattentive, and the memory bad, but in none were the sphincters affected. Sensation was not affected or slight anesthesia to slight touch was only temporary and after the fits. In four out of the six fine tremor of the fingers on the same side as the tumor was detected. It appeared then that fits, faints, or attacks beginning with spasms of conjugate movement of the eyes, or of the hand or face, followed by weakness but not permanent anesthesia, mental dullness and fine tremor on the side opposite to the one affected by the fits, indicated tumor of the outer surface of the frontal lobe anterior to the ascending convolution. Dr. Beevor then related cases in the interior of the lobe, the difficulties of their diagnosis being pointed out, especially before hemiplegia appeared from extension of the growth backwards. Severe headache, vomiting, double optic neuritis, mental obtuseness, incontinence of urine, gradual hemiplegia without anesthesia, increase of deep reflexes with decrease of superficial ones, and extensive plantar responses on the paralyzed side were the chief indications. In three of the cases there was rapid, fine tremor of the hand on the same side as the tumor, and this was the most significant symptom.

The Pathological Society had two papers before it on the 10th concerning the parathyroid glands. The first, by Dr. David Forsyth, dealt with their anatomy. Usually he found two on each side, but the total might reach twelve. They never lay on the superficial aspect of the muscles, and might occur within the thyroid itself. The microscope was necessary to identify them. With their tissue might be bound up thymus or accessory thyroidal. In infancy they were smaller but greater in number, while accessory thyroids were more numerous in adults, suggesting that one might be transformed into the other. The colloid in parathyroids and thyroids seemed the same and was oxyphile as a rule. In infancy the cells were in a resting stage and colloid appeared later.

The second paper was by Mr. W. L. Harnett, who described the appearances in various periods of life and thought that the tissue began activity early, increased as age advanced, and attained its height late in life. From examinations of subjects dead from various diseases he found nothing different from normal glands at the corresponding age. There were no grounds for supposing parathyroids were affected in Graves's disease or in tetany. Dr. H. Bayon did not believe that colloid was formed in true parathyroid tissue; if seen it would only be an isolated lobule of the thyroid proper. He exhibited a section through a goiter showing the parathyroid in which was no trace of colloid.

The new President of the Gynecological Society is Mr. W. D. Spanton, Consulting Surgeon to the North Staffordshire Infirmary. He delivered his address on February 14, devoting it to the gynecology of to-day and fifty years ago. Having referred to the opposition at first to ovariotomy and to the radical cure for hernia offered by London teachers whose knowledge of anatomy and surgery should have prevented their attitude, he went on to consider their position in reference to affections of women. His first example was excision of the cervix uteri for various forms of cancer which was condemned by Churchill, Montgomery, and Robert Lee. But Simpson had then operated on eight cases and only one died. It was not to be wondered at that the operation was regarded as so grave considering the mode of its performance then. It was only when the true principles of clean surgery were adopted that real success was attained, and no one now expects a fatal result from this operation. Extirpation of the whole uterus at that date was even more rigorously proscribed. The immediate results are now less grave, though how far it is curative for malignant disease is an open question. Vaginal hysterectomy had been practised for prolapsus associated with various conditions, but removal of the organ when *in situ* for tumors had only just begun. Of nineteen cases sixteen had died, only one surviving to the fourteenth day. This fatality was so alarming that Clay of Manchester and Köberle of Strasburg ventured on abdominal hysterectomy. Dr. Blundell with his usual sagacity had suggested that it might be done, but Simpson pronounced it unjustifiable in 1860. Modern improvements have enabled us to advise such operations. Abscess of ovaries, salpingitis, and other points were discussed and the president remarked that most of the pioneer work had been done by Continental obstetricians and surgeons, the British generally following rather than leading. The provincial surgeons have kept rather ahead of the London schools and Mr. Spanton thought the time had now arrived when the scientific teaching of gynecology so long well carried out in the provinces should be adopted in a whole-hearted way in the metropolitan hospital schools. He hoped the time would come when more liberal ideas would prevail and the proper place of extramural practice and teaching be recognized by examining boards.

A memorial to the late Dr. Schorstein of the London Hospital is being raised in connection with the Medical School. It is proposed to found a lectureship in advanced clinical medicine, not as a part of the ordinary curriculum,

but rather on the lines of the endowed lectureship at the Royal Colleges, three or four lectures by a physician to be elected on each occasion by the governing body, due notice being given to afford time for the lecturers to prepare a discourse worthy of the subject and of the late Dr. Schorstein. At present the governing body is the College Board, representing two interests, the hospital managers and the staff. A more suitable body for selecting the lecturer might well be chosen.

Mr. Henry Morris, P.R.C.S., presided at the annual meeting of the Middlesex Hospital yesterday. The report of the Clinical and Bacteriological Laboratories testified to the excellence of the work carried on in them and indicated that the facilities afforded by the clinical investigation department were greatly appreciated by practitioners. The financial statement was satisfactory as hospital reports go. There was a slight increase in the patients admitted to the cancer wards during the year. The report was adopted and after the formal business a testimonial to one of the hospital nurses was presented. It appeared that Nurse Cross was in Jamaica when the earthquake took place and assisted Dr. Arthur J. Evans on board the *Port Kingston* for nearly forty hours consecutively in rendering surgical aid to over 200 injured persons. Her conduct had been brought before the Board and the framed testimonial was presented setting forth that "her fortitude and noble devotion signally redound to the honor of the nursing profession and of British womanhood."

At the annual meeting of the Royal National Orthopedic Hospital on Wednesday it was stated that the amalgamation scheme was working well and that when the new building is erected it will be the most complete hospital of the kind in the world. It is hoped that the foundation stone will be laid within a few months. In the meantime three vacant wards at Charing Cross Hospital have been rented and some property adjoining the old hospital purchased to utilize during the rebuilding.

At the meeting of the Cancer Hospital held Wednesday it was reported that a deputation of the staff attended the Congress at Heidelberg and visited many institutions in Germany, Denmark, and the Netherlands to study the methods of treatment. There had been a considerable increase in the research and pathological department during the year. In the report of the Medical Committee special attention was drawn to an instruction issued to patients advising early recourse to medical advice, as cancer often begins as a small, painless lump.

The meeting of King's College Hospital was also held yesterday, the Hon. W. F. D. Smith in the chair. The ordinary expenditure for the year had been £22,315, an increase of £827 over the preceding year. This was due, according to the report, to the reassessment of the premises at a considerably higher figure which had increased the amount of rates and taxes by £216, and to exceptional allowances on retirement. The ordinary income was £16,081, as against £16,200 in 1905. There had been a further decrease of work in the out-patient department, the change in the neighborhood accounting for this—a result, I may add, which is by no means to be regretted.

Cerebrospinal fever still seems spreading. Three or four cases have been received in London hospitals. Compulsory notification has been adopted in most places where it appears. The Scotch and Irish cases continue to increase.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

TRYPANOSOMIASIS—INJURIES THROUGH ELECTRICITY—INFANT FEEDING—THE PROFESSION IN GERMANY.

BERLIN, February 17, 1907.

On February 14 an event of more than usual interest occurred in the history of the Berlin Medical Society. Every seat in the large auditorium of the Society was occupied and the audience listened with the greatest attention to a discourse by Paul Ehrlich of Frankfurt in which he described his experimental studies on sleeping sickness. The speaker took the occasion to dwell especially on the method of experimental therapy, which he so warmly advocates. In all diseases it should be the object to seek to discover remedial agents which shall be directly hostile to the causative agent and combine with it. Such substances are called bacteriotropic or etiotropic by Ehrlich. If they are also taken up by the tissues of the body they may be termed organotropic. After it had been discovered that the manifestations of trypanosomiasis in animals were very similar to those in man, hundreds of remedies were tested and two particularly potent bacteriotropic substances were discovered. One of these is a dye called trypan red. For most of the experiments the trypanosomes used were those causing the South American *mal de caderas*. The strain under observation killed mice in four to five days, but if trypan red was injected into the animals the day after the inoculation they remained healthy. If, however, a few of the organisms escaped the action of the drug, a fatal termination ensued in the course of a few weeks. There were some strains of trypanosomes that were not affected by the trypan red but which were found by Laveran to be susceptible to a combination of trypan red with arsenic. Malachite green and brilliant green, two aniline colors, were found also to possess toxic properties for the trypanosome, but owing to their irritating nature these agents were not available for practical use. Apparently the simpler the chemical composition of a dye stuff, the less irritating was it likely to be. The speaker had found that the experiment mice exhibited considerable variations in their powers of resistance to the parasites; each mouse, so to speak, had its own titer of susceptibility. The biology of the trypanosomes has so far not received much attention from the therapeutic standpoint. By giving fuchsin to mice Ehrlich found that the immunity produced became of shorter and shorter duration, showing that the parasites became habituated to the poison. In this manner it was found possible to produce a strain which was resistant to fuchsin, and also strains that were refractory to trypan red and trypan blue. The tediousness of these experiments was evident from the fact that some of the strains were already in their one hundred and eightieth transfer. The variations in the therapeutic results obtained by observers in different countries could be explained on the ground that the various types of the parasite encountered might be more or less resistant. It was therefore necessary for laboratory workers to determine the powers of resistance of their cultures and in cases in which the arsenic treatment was found inadequate to combine it with the administration of trypan red. As it was found that trypan blue was just as effective as trypan red, search was made for the active component present in each and it was discovered in a sulphur radical common to both.

Another address by a stranger was that delivered by Jellineck of Vienna before the Society of Internal Medicine on the pathology, prophylaxis, and treatment of accidents by electricity. He first called attention to the fact that unipolar contact was sufficient to close an electrical circuit owing to the constant presence of electric currents in the ground. In dealing with atmospheric shocks, true and false lightning strokes were to be distinguished. The effect of the lightning discharge was the result of a combination of the actual electric current itself and of the destructive action on the surrounding objects struck. It might also be conveyed to a distance through such agencies as telephone or telegraph circuits. The electric discharge began to be dangerous even at a tension below 100 volts and the continuous current was more hazardous than the alternating current, because the first was drawn directly from the power house without the intermediation of a transformer. Individual differences in resistance might also play a part in different persons, and the resistance also varied in different parts of the body. The character of the flooring was of importance, a stone paved floor offering the greatest resistance. An interesting case was one that occurred in Vienna in which a young girl was killed through catching hold of an incandescent light while in the bath tub. In this instance through leakage in the wiring the circuit was closed through the body of the girl, the bath tub, and the floor. The experimental observation that anesthetized animals were aroused by a certain current but that the same current sufficed to kill animals in the waking condition held good for human beings also. Sleeping persons undergoing powerful electric shocks were simply aroused, but waking individuals were killed. The speaker had seen seventy-five cases of lightning stroke and one hundred and fifty-seven accidents from the electric current, and he related several interesting case histories. Lumbar puncture has been found useful in dealing with severe cases of electrical injury.

A dissertation of practical importance that was also interesting on account of the side light thrown on social conditions in Berlin was presented by Neumann before the Berlin Medical Society on January 30. His subject was the natural feeding of infants in medical practice. He admitted that many healthy children did well on artificial feeding but that in dealing with prematurely born or weakly infants breast feeding was necessary in order to avoid intestinal disturbances. If rachitis existed in the family, only through breast feeding was it possible to prevent the lesions caused by this disease. Children born in the second six months of the calendar year ran the greater risk of becoming rachitic. In Berlin in the year 1900 only 30 per cent. of nursing mothers were found in families that occupied homes consisting of more than four rooms, but it was determined that from 70 to 80 per cent. of the mothers were physically able to nurse their children. Artificial feeding was resorted to chiefly because the mothers

did not realize the dangers of it, and therefore the medical profession should make greater efforts to disseminate knowledge on this subject. The greatest danger, both in artificial and natural feeding, lay in overfeeding, and in some cases the common practice of feeding by the clock was too schematic.

Statistics of interest in regard to the medical profession in Germany have been collected by Dr. Prinzing. The total number of physicians is now 30,931. The absolute number has become larger, but on account of the great growth in population the relative proportion has diminished, so that apparently the increase in the number of physicians observed during the last twenty years has been checked. In Prussia and some other German states, three to seven physicians are found for each 10,000 inhabitants, but in the large cities, there are seven to twenty. In 1901 there were 2,786 physicians in Berlin and in 1906 there were 3,196, but the relative number has remained about the same, that is, 12.1 per 10,000 inhabitants. The number of specialists has increased greatly and now from a third to one-half of all the physicians in Berlin, Munich, Dresden, and Frankfurt are specialists. Among the specialties gynecology is the most followed, except in Berlin, where genitourinary specialists take the lead. Even the smaller towns are filled with specialists and it seems advisable to warn young physicians against attempting to devote themselves to a single subject.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

A NEW TREATMENT OF DEFORMITIES OF THE LOWER EXTREMITIES—OBSERVATIONS ON PERLSUCHT—TEMPERATURE DETERMINATIONS BY MEANS OF THE URINE—ECHINOCOCCUS OF THE LUNG—FOREIGN BODY IN THE ESOPHAGUS.

VIENNA, February 15, 1907.

A NEW and very ingenious method for the treatment of flat foot, club foot, knock knees, and bow legs was recently described by Semeleder before the Medical Association. He presented a number of patients who exhibited the astonishingly good results to be obtained by this method. The speaker pointed out that the customary procedures were painful and time-consuming and that the results obtained were no better than those promptly secured by the painless use of his appliance. The apparatus was not visible while in use, since it was contained in a shoe that did not differ in appearance from an ordinary one. Semeleder had the following to say in regard to the way in which he came to devise his appliance: The well-known fact that continuous standing and walking tended to aggravate a condition of flat foot, whereas the opposite of flat foot, the club foot, was increased in the same way, led the speaker to consider whether the pressure which ordinarily had a deleterious action might not be transformed in its effect so that in flat foot it might tend toward the production of club foot, and vice versa. If the process of correction were arrested at the right moment, that is, when the opposite deformity had been half produced, a normal foot might be secured from either one. After experiments had been carried on for years a simple appliance had been devised by means of which simple walking was made more effective than the most careful massage. The function of the shoe was to perform auto-massage through the alteration in the direction of action of the pressure while walking. The most valuable feature of this massage was that it was self-regulating, since it was controlled by the patient's weight, the weight of his step, and the amount he walked. Under all these conditions the correcting forces always corresponded exactly to the demand, since no force was brought into action except the pressure of the step, the direction of which force had simply been properly altered.

Observations on *Perlsucht* have been continued by J. Bartel in Prof. Weichselbaum's laboratory. If *Perlsucht* bacilli are injected into rabbits and the animals are killed and portions of their organs inoculated into other rabbits, these animals die of tuberculosis and their organs are found full of tubercles. The same thing occurs if the bits of tissue are preserved for some time in blood serum. On the other hand, if the material to be inoculated is kept for some time in the incubator before the inoculation is done no tuberculosis appears in the experiment animals. Rabbits that had been intraperitoneally inoculated with *Perlsucht* bacilli died some time later of generalized tuberculosis, and advanced tuberculous changes were found in their internal organs. Rabbits, however, that had been treated for several months previously with attenuated tubercle bacilli did not become tuberculous on inoculation in the same way. The experiments showed that not every infection with tubercle bacilli is necessarily followed by tuberculosis, because the body may have previously acquired a general or local immunity through the entry into the body of attenuated tubercle bacilli.

In order to determine bodily temperature Englander takes the temperature of the urine while being voided. To do this he has the patient urinate into a funnel made of strong filter paper and having its point cut off. The thermometer is placed in this funnel and is kept in position by cutting a suitable supporting slip from the paper. The advantage of the method lies in its simplicity, as the determination may be made in a few seconds and accurate results are obtained both at room temperature and at very low temperatures. Owing to the short time necessary for the determination and the poor conducting power of the paper funnel, the urine undergoes only a practically imperceptible cooling. Comparisons of results obtained by this method with those gained by the ordinary procedures showed that there was perfect correspondence between the urine temperature and the rectal temperature, whereas the axillary temperature was sometimes as much as one degree lower. Determinations of the urine temperature demonstrated the daily physiological fluctuations in temperature, that is, a rise toward the afternoon followed by a fall lasting until the morning hours, as well as the elevation of temperature produced by muscular work. The method is especially suitable in dealing with patients who are up and about and for scientific purposes.

A case of primary echinococcus of the lung has been cured by Herczel by resorting to pneumonotomy. The patient was a boy of nine years who fifteen months previously had had pneumonia and three months later had suffered from pleurisy. A quarter of a year after this, severe attacks of coughing ensued accompanied by profuse expectoration without tubercle bacilli and moderate elevations of temperature. An exploratory puncture gave a negative result, though it was followed by fever and night sweats. It was then noticed that the left side of the child's thorax was larger than the right and dullness was discovered below the angle of the left scapula. It was supposed that the case was one of encapsulated empyema and the Roentgen ray revealed a sharply circumscribed shadow. It was decided to operate and portions of the seventh and eighth ribs 9 cm. in length were resected. Clear fluid was obtained from the lung on puncture and it was evident that an echinococcus cyst was present. The cyst was incised and its wall was found adherent to the parietal pleura. By careful manipulation the production of pneumonthorax was avoided and on further investigation it was found that the mother-cyst communicated with a bronchus. The large cavity was packed with gauze and the skin flap sutured in position. Seven days later severe urticaria appeared which persisted for three weeks in spite of all treatment. At the end of the seventh week only a small sinus remained which closed completely a month later. A recent radiograph showed normal conditions.

Much interest has been aroused by an operation performed in Prof. Chiari's clinic. A man of thirty-eight years applied for treatment, saying that about a month before he had swallowed his artificial teeth while asleep. At first he had suffered from severe dyspnea, but this soon subsided again. At present he was able to take only fluid food, but he had no actual pain. On examination an obstruction was found in the esophagus and radiographs made in Prof. von Eiselsberg's clinic showed a shadow resembling the false teeth at the level of the first dorsal vertebra. The attempt was then made to extract the foreign body without opening the esophagus and by ingenious manipulations with various tubes the operators succeeded in withdrawing the plate without using undue force. This was all the more remarkable as the plate was one of five teeth and measured 4.5 cm. by 2.5 cm. At present the patient is perfectly well.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

DECLINE IN THE NUMBER OF LEPERS—CARE OF LEPERS IN THE PHILIPPINES—ANGOSA, OR RHINOPHARYNGITIS MUTILANS—COLD WEATHER IN THE PHILIPPINES—MEDICAL INSPECTION OF THE PUBLIC SCHOOLS—RESIGNATION OF DR. DE MEY.

MANILA, P. I., February 1, 1907.

AN analysis of the tables prepared by the Bureau of Health of the number of lepers in the Philippines, shows that there has been a steady decline in the number of lepers reported. For the year ended August 31, 1904, there were 3,623; for the year ended August 31, 1905, there were 3,580; for the year ended August 31, 1906, there were 3,404; for the quarter ended September 30, 1906, there were 3,473, and for the quarter ended December 31, 1906, there were 3,225. The decline has been most noticeable during the last six

months of 1900. It is believed that the reduction in the actual number is really greater than the figures show, because the sanitary organization in the Philippines is undergoing constant improvement, so that many cases that would have escaped attention entirely a few years ago, now find their way into the official records. From a casual examination of the figures it is, of course, impossible to say whether the reduction is due to the improved sanitary methods now being gradually and steadily extended by the American Government, or whether it is due to some cause not yet well understood. On account of the reduction having been so marked during the last six months of 1906, it would appear that the decrease can at least be attributed in part to the many centers of infection which were obliterated during that period. It will be remembered that effective segregation and isolation of lepers in the Philippines did not begin until May, 1906, and it is only from that date on, that the beginning of the solution of this problem can be counted.

For the past several hundred years, the care of those who were unfortunate enough to contract leprosy, has received considerable attention in the Philippines, but a careful review of the history shows that it was more or less of a charitable nature, and not carried out in such a way that the final disappearance of the disease could be hoped for. It was the practice to admit to leper hospitals those lepers who were unable to earn a living, or who had no one to provide for them. This left many lepers at large who managed to make a living by begging or by the charity of kindly disposed individuals. Thus, the few hundred lepers who were actually confined to an institution had very little effect upon reducing the number of infected foci upon the outside. The real solution of the problem must, therefore, date from the time of the American occupation, and more especially from the time the Civil Government set aside an island for this purpose and began the construction of suitable buildings and quarters for their isolation.

The first person in the Philippine Islands definitely known to have been afflicted with gangosa, or rhinopharyngitis mutilans, which is the name suggested for the disease by the Navy medical officers, died at the St. Paul's Hospital, this city, last week. Cases may have occurred in the past, but they have escaped recognition, and extensive inquiry among Filipino and Spanish physicians who have been in the islands for many years, tends to show that while cases of a disease with similar symptoms have been observed, yet, they were generally regarded as leprosy, and no distinct separation was ever made.

In the description given by Surgeon J. F. Leys, United States Navy, which appeared in the annual report of the Surgeon General of the Navy for 1905, it is stated that gangosa is an infectious, painful, repulsive, and disfiguring disease, the cause of which is not known, and which prevails extensively in the Island of Guam. The nose and upper part of the face are destroyed by slow ulceration, while the tongue is never affected. Cases have been observed in persons from three to eighty years of age. The disease sometimes lasts from several months to a number of years, and even during this period, in its active stage, there is no reduction in the flesh or strength. The mortality of the disease is low. The disease is not very amenable to treatment, although antiseptic methods appear to retard the extension of the ulceration. It is estimated that there are about 200 persons on the Island of Guam who are afflicted with gangosa.

The Philippines, during the month of January, have enjoyed an unusual amount of cool weather. The Weather Bureau has reported that this has been the coldest January since 1857. In the mountains of Benguet, near the Benguet Sanitarium, and the place where the summer capital of the Government is located, the Weather Bureau reported that the thermometer actually registered 28° F., and ice to the thickness of one-quarter of an inch formed in exposed places.

A few weeks ago the systematic medical inspection of the public schools of Manila was commenced. It is yet too early to state what the result of this inspection will be, but from the preliminary reports received, it appears that much the same conditions exist among the Filipino school children as are found among American school children in the larger cities of the United States.

Dr. C. F. de Mey, who has been the chief of the Culion Leper Colony Division of the Bureau of Health for the past few years, and who was in direct charge of the construction of the colony, has resigned his position and will soon proceed to France, where he expects to practice his profession.

An Edict Against Corsets.—The Bulgarian Minister of Public Instruction has prohibited the wearing of corsets by the pupils in the girls' schools of the principality. The penalty is expulsion from school.

Progress of Medical Science.

New York Medical Journal, March 9, 1907.

Clinical Observation on the Use of Cotarnine Phthalate.—The use of this remedy as a uterine hemostatic is highly commended by C. A. von Ramdohr. Cotarnine is a derivative of narcotine from opium. The new salt is a yellowish crystalline powder freely soluble in water. It may be given in coated tablets in doses of three-quarters of a grain, from 3 to 9 tablets being the daily limit. It acts on the vasomotor uterine nerves. So far no toxic effects have followed the maximum dosage above indicated. It is not indicated in cases calling for hurried uterine contraction. The author has found it superior to ergot and cotton-wood. Brief histories of its results in six cases are given.

A Case of Cancer Treated by Trypsin.—W. J. Morton reports the case of a woman of forty-five years with a lump in the breast, *x*-ray treatment, radioactive water, and fluorescin reduced it one-third in size, and still later to a mass the size of the end of the thumb. This was removed under cocaine and proved to be a highly fibrous scirrhus carcinoma. Later two new nodules appeared, one below the clavicle, near the shoulder tip, and one under the chin. Trypsin and amylopsin injections were used with success, and some twenty months later the patient was reported as doing well.

Indigestion; Its Significance and Diagnosis.—H. F. Stolt refers to the various causes which may produce gastric symptoms, although the stomach is not the organ primarily at fault. Our errors in diagnosis may be due to (1) incomplete history of the case; (2) failure to make a complete examination; (3) stopping our search for the cancer with the discovery of the first lesion, and (4) the omission of special tests. The author calls attention to the necessity of method, system, and completeness in our search for the cause, and then takes up the diagnosis of some of the more common gastric maladies, as, ectasy ulcer, cancer, gastric hyperesthesia, and nervous dyspepsia. He notes that there is probably no class of patients in whom less attempt is made at an accurate diagnosis than in the dyspeptics. They enter the office with a tale of woe concerning their indigestion and they are given a prescription for some much advertised preparation which "cures all kinds of indigestion," when an inspection of the mouth might have revealed a few scattered teeth, or the passage of the stomach tube have demonstrated the food of former days. Rational therapeutics can only follow careful diagnosis.

Value of Differential Leucocyte Counts in Medicine.—J. S. Wile summarizes the definite knowledge at our command as to the value of the leucocyte count in disease. Nothing new is brought forward. He believes that it affords more suggestive information than any other procedure in blood analysis. He also discusses the prognostic value of eosinophiles, noting that in most infectious diseases accompanied by neutrophilic leucocytosis there is a diminution of eosinophiles. The return of eosinophiles to the circulation after a primary decrease or absence is of good prognosis. The reappearance of the eosinophiles foretells approaching convalescence. On the other hand, a sudden fall of the eosinophiles during the course of an infectious disease where they were previously present suggests some complication which is interrupting convalescence. This prognostic value of the eosinophiles holds true in pneumonia, typhoid fever, appendicitis, and septic processes. Generally speaking, when mentioning leucocytosis we refer to the condition of the blood where there is a relative or absolute increase of the neutrophilic leucocytes. The author calls attention also to the necessity of taking the age of the patient into account in interpreting our differential findings. The percentages of the various types of leucocytes do not approximate the percentages normal in adults before the ninth year. At one year the lymphocytes average about 54 per cent., the neutrophiles only 35 per cent. In adult life the neutrophiles form 60 per cent., and the lymphocytes 35 per cent. of the total leucocytes. Hence, 65 per cent. neutrophiles in a child, six months old, may represent a pronounced leucocytosis, whereas it would be perfectly normal in an adult.

Journal of the American Medical Association, March 16, 1907.

Quinine Injections and Tetanus.—Having had his attention called recently to a severe case of tetanus following an injection of quinine hydrochlorate, E. F.

McCampbell reundertook a series of experiments previously performed by him to test the conclusions of Vincent that the injection of quinine had a favoring action on the development of tetanus. His earlier results were entirely negative and he therefore carefully followed up Vincent's claim and here reports the results of two carefully conducted series of experiments. He finds that the salts of quinine have a feebly antiseptic action on the spores of tetanus, that of the hydrochlorate being the greatest. The lethal dose of neutral hydrochlorate of quinine is from 1/3500 to 1/4000 of the weight of the guinea pig and from 1/4000 to 1/5000 of the weight of the rabbit. The dose varies with the age, young animals being most susceptible. Hydrochlorate of quinine has a paralyzing effect, varying in different animals, which McCampbell attributes to the coagulating action on the protoplasm of the peripheral nerves. Atrophy of the extremities results after long doses. In cases of tetanus in experimental animals which had been injected with hydrochlorate of quinine the disease resulted only in those cases in which there was a mixed infection. The quinine may have aided by its corrosive action in favoring this secondary infection, and it is possible that it may have acted as an additional irritant to the nervous system, rendering it less resistant, but any other mild corrosive substance could act the same way. In cases in which tetanus did not result after injections and there was no secondary infection, the spores had evidently undergone phagocytosis by the leucocytes or tissues, as none of them were ever found. Hydrochlorate of quinine is unable to favor a tetanus infection other than in the above indirect way. It has not the power to awaken an infection when injected at the same time with the tetanus spores or at other times. It causes a slight leucocytosis and has a slight paralyzing effect on the leucocytes. If this were so extensive as to involve the majority of the leucocytes of the body, it is possible that the spores of tetanus might develop unhindered, as is the case when lactic acid is injected; but in that case the toxic effects of the quinine itself would be manifested and would probably cause the death of the animal. McCampbell believes that in most of the cases in which tetanus has followed quinine injections it can be traced to some fault of surgical technique or to some contamination of the quinine solution. The tissue necrosis from the quinine injection would favor infection by tetanus germs as well as by other bacteria. He does not think that there is sufficient proof that the tetanus spores can be transported from point to point according as the quinine is injected, nor that it is possible for the healthy living spores of tetanus to be present in the body and to develop a severe and fatal infection on the advent of an injection of hydrochlorate of quinine.

Malaria.—W. Krauss says that no region should be uninhabitable on account of malaria and that much of the so-called malaria is something else. He asserts that he has seen tuberculosis, sepsis, gall-bladder disease, liver abscess, dysentery, uncinariasis, chronic nephritis, and visceral malignant disease, in persons who come to him, all with the same story of "malaria in the system." Nothing is more amenable to proper treatment than malarial fever, he says, and a recent infection is almost never anything but a fever. Malaria in the beginning is an infection by one or more groups of one or more varieties of blood parasites whose life function in the body is the destruction of hemoglobin. The segmentation of these parasites starts the well-known symptoms. A resistance is developed and the so-called chronic malaria is, as Krauss believes, a state of relative immunity in which repeated infections produce comparatively slight reactions, a state of symbiosis in which the immunizing contest between the parasite and the blood-making organs is in a state of equilibrium. So long as the patient remains in a malarial climate the condition may become acute through reinfection, especially when assisted by outside influences. The merozoites resulting from segmentation, according to this theory, do not invade new cells, but hibernate somewhere in the organism and become active when reinforced by a new infection, or die when the patient removes to a non-malarial climate, but they do not, *per se*, he declares, produce any paroxysms. Krauss holds that in these cases of chronic malaria without paroxysms or marked cachexia, quinine, as well as other factors disturbing the symbiosis, may produce symptoms of intoxication, including hemoglobinuria. The only time to give quinine is when developing parasites are found in the peripheral blood, provided also that the infection is fresh, as shown by a characteristic fever curve. It is his practice in the autumn to give two or three 10 or 15 grain doses of sodium thiosulphate at desirable intervals until the bowels are freely emptied. Pernicious cases must of course be treated more expeditiously. He advocates especially frequent blood examinations of persons living in malarial districts, even if well. His conclusions are given as follows: "1. There is not the shadow of an excuse for failure to make an exact diagnosis in all fever cases. 2. The blood of residents of malarial localities should be examined at frequent intervals. This does not constitute an encroachment on personal liberty that can weigh a feather's weight as compared with vaccination. 3. Fever cases should be treated in accordance with the findings of a thorough blood examination, with special reference to time of dosage and to the complete immunization of the individual for the sake of his neighbors. 4. Quinine judiciously used in accordance with findings of a blood examination very rarely does harm; its prohibition on the ground of possibly producing a hemoglobinuria is unpardonable; its administration during hemoglobinuria is very dangerous and usually unnecessary; a blood examination will save such patients from almost certain death. 5. The screening of houses and the destruction of breeding places of anopheles should be encouraged so far as possible, but the prophylaxis of malaria and its definite local eradication depends on the destruction of the parasite within its alternative host, man."

The Pretuberculous Stage of Consumption.—C. F. Beeson calls attention to the earliest symptoms of pulmonary tuberculosis before the physical and rational symptoms have become fully manifest. After noticing the usually recognized characteristics of the phthisical predisposition, he mentions as the signs of incipient consumption an over brightness of the eyes, with possibly slight inequality of the pupils due to reflex of the ciliary nerve from apical irritation, brittleness of the hair, variable and uncertain appetite, fluctuations in body weight, quick fatigue, subnormal morning temperatures slowly reached by the thermometer, chest pains, frequent clearing of the throat, and husky expiratory cough; there may be a bluish tinge to the lips or an unusual redness of the gum margins. Careful inspection may reveal deficient expansion of one or the other apex, or the Litten shadow may not fall as it should. A prolonged expiratory sound may be heard at or near an apex, and there is sometimes also a fine laryngeal crepitus to be heard by placing the ear near the open mouth of the patient. Sooner or later a slight hemorrhage or a prolonged "cold" will startle the patient and be what he, and too often his physician, considers the starting point of pulmonary tuberculosis.

Passage of Methylene Blue from the Mother to the Fetus.—S. H. Corrigan reports the observation of a healthy new-born infant whose urine for the first eighty hours after birth left a blue stain on the diapers, the color gradually disappearing. The mother had been taking methylene blue during a large part of her pregnancy for chronic cystitis. There was no evidence of the drug in the liquor amnii nor any trace of it on the sheets or pads used during labor. From these facts he assumes that methylene blue passes from the maternal to the fetal circulation, and, there being no evidence of it in the liquor amnii, the fetus does not evacuate the bladder before birth, and its kidneys do not excrete it beyond the amount contained in the bladder at the time of birth.

The Lancet, March 2, 1907.

Streptococcus Wound of the Finger.—W. P. Cowes reports the case of a man of forty-four years who, while sparring with a fellow workman, struck the back of the right index finger against his opponent's tooth, making an incised wound. He was seen four hours later. Examination showed a wound on the index finger just posterior to the first knuckle; this was seared over. There was no other wound found nor were there evidences of any septic places around the hand. On opening the wound pus was seen. A cover-glass preparation was made and a culture was taken. The wound was douched, very slightly enlarged, touched with carbolic acid and alcohol, and drained. The finger did well and the man was soon discharged. The cover glass showed numbers of streptococcus and the culture was a pure one of that germ. The interest in the case lies in the unusually short period of incubation—namely, four hours.

Rupture of the Aorta and Rupture of the Left Ventricle.—R. A. Forster's first patient was a woman of seventy-nine years, slightly demented and confined to bed three weeks with bronchitis. Death came on suddenly without apparent cause. Autopsy showed pul-

monary emphysema, pericardial sac full of serum and clot, and a large rent in the lower and posterior walls of the aortic arch, measuring three inches in length and extending round three-quarters of the circumference of the vessel. The blood had evidently broken through the inner and middle coats of the aorta, dissected its way down into the tissues between the aorta and pulmonary artery, and finally at the origin of the latter vessel from the heart had burst into the pericardial sac. The walls of the aorta were thinned and showed some small atheromatous patches, though there were no marked signs of degenerative changes. The valves of the heart were healthy and competent. His second patient was a man of fifty-nine, also demented, with atheromatous vessels, dying suddenly. Autopsy showed left lung collapsed, and clot and serum on the pericardium. A rupture, measuring half an inch in length, was present in the anterior wall of the left ventricle, close to the intraventricular septum and midway between the apex and base of the ventricle. The edges of the rupture were ragged and the hole through the ventricular wall was cone-shaped, the base of the cone being the external opening. The heart muscle was flabby, but there was no naked-eye appearance of fatty degeneration. The aorta was atheromatous and numerous calcified plates were seen in its walls. The descending branch of the left coronary artery was almost completely occluded at its origin by atheromatous degeneration of its walls, and at this point the vessel was of a stone-like hardness. This branch was traced down to the site of rupture and evidently the myocardium, deprived of its blood supply by the atheromatous obstruction, had undergone the necrosis spoken of by Ziegler as myomalacia cordis. The wall of the ventricle thus weakened by the necrosis had given way.

Intestinal Obstruction in Children.—Two cases are reported by E. P. Bauman. Case 1 was one of acute intussusception, reduced by manipulation, and Case 2 one of subacute intussusception simulating dysentery. The first case completely recovered, while the second called for surgical intervention, and abdominal incision was made. The patient had gone into collapse at the time and died in two hours. The features of the second case, which, in the author's view, are noteworthy, were, first, the comparative rarity of these cases of incomplete intussusception in which the occlusion of the bowel is incomplete and the passage of feces continues unimpeded, while there is little or no vomiting. These cases may last for weeks or become chronic and exist for months or years, death in most instances being due to exhaustion. Secondly, there was a considerable amount of hemorrhage from the bowel. Usually, in subacute or chronic intussusception, the catarrhal changes at the neck of the involution are comparatively slight and the stools are characterized only by small hemorrhages. Thirdly, there was the similarity to a case of dysentery—superficial, it is true, yet sufficiently exact to obscure the diagnosis. Fourthly, there were the disappearance and reappearance at intervals of the abdominal tumor. According to Treves a tumor is felt on abdominal examination in only fifty per cent. and rectally in only thirty-two per cent. of these cases, and in the paper already quoted the author calls attention to the recognized fact that the tumor, once it has been felt, may disappear from time to time. For this reason it is essential that the examination of the abdomen should be undertaken both thoroughly and repeatedly. Fifthly, the fact that another child of the same family should also, and at about the same time, have passed blood-stained motions was perhaps the most perplexing factor of this difficult case.

British Medical Journal, March 2, 1907

Two Cases of Cystin Calculi.—F. A. Southam presents histories of two cases of this rare occurrence. In the first patient, a man of thirty-two years, the stone which gave the usual symptoms and was easily detected by sounding the bladder was removed by suprapubic lithotomy and the patient made a good recovery. The stone had the shape of a mushroom, one and three-quarters inches by one and a quarter in measurement, and was of a pale color, with an irregular crystalline surface. Cystin crystals had intermittently appeared with urine. In the second patient, a girl of twenty-two years, the stone had been passed per urethra. It was of a pear-shape, one-third of an inch in length.

Influenza Commencing with Sudden Unconsciousness and Excessive Dyspnea.—The patient of W. Harris was a man of thirty-eight years, plasterer, admitted to hospital, who had fallen unconscious while at his work and had slight convulsions. He recovered in about twenty minutes, so as to speak, and came to the hospital in a cab. He presented a moderate fever, slow pulse, legs were somewhat stiff, while respirations were very frequent—about sixty per minute. He also complained of severe frontal headache and of pain in his back in the lumbar region, and he was able to tell us that he had had two similar attacks, one four years and the other fifteen years previously. Examination of the chest showed him to be perspiring freely; both sides of the chest moved well, but on percussion the note over the whole of the right front was distinctly high-pitched, and there were numerous sticky râles to be heard over the right upper lobe. The arteries were somewhat thick-walled and hard, but the urine was of good specific gravity, and contained no albumin. The optic discs and retinæ were normal, and examination of the nervous system showed no abnormal physical signs. Tentative diagnosis were epilepsy, cerebral tumor, hemorrhage, or thrombosis, uremia, and pneumonia. The author details the reasons which led him to reject all these and come to the conclusion that the man had influenza, attaching great value to the slow pulse (56) with a temperature of 99.6°. Looking at the case from this point of view, the other symptoms—the frontal headache and lumbar pain, pyrexia, sticky râles, and cough—all clearly pointed to this disease. Only the curious mode of onset with sudden unconsciousness remained to be explained, but, being familiar with the literature of the disease, particularly of the epidemic of the early nineties, the author was aware of several cases having been recorded which started suddenly in this way. The after-course of his case proved this diagnosis to be correct.

Idiopathic Dilatation of the Colon.—H. F. Hawkins makes a study of a series of cases collected mainly from the records of St. Thomas' Hospital. The main features of the cases have grouped themselves as follows: (1) A history of constipation from birth or from the earliest recollection, which is compatible, however, with fairly good health, until the final stage is at hand, the first sign of failure being often a loss of weight. (2) A constipation which often alternates with diarrhœa, and which at its worst is unlike that of obstruction, inasmuch as flatus is often passed and fecal matter may be drained away through a rigid rectal tube. (3) Abdominal enlargement, variable or constant, often asymmetrical, with prominence in the left iliac region, the abdomen, though distended, being seldom tense and often surprisingly flaccid, and rarely presenting any impairment of resonance. (4) Slow alterations in shape, especially in the left iliac region, observable only with patience, quite unlike the tense peristalsis seen in real obstruction. (5) The absence or rarity of pain and vomiting. Neither with real intestinal obstruction nor with simple nondilating constipation should there be any confusion when this condition is far advanced. The difficulty lies in distinguishing its early stage from a simple constipation, and in recognizing the point at which the case must pass from physician to surgeon. The author then goes on to consider the origin of the condition, finding both an anatomical and a nervous factor in its production, and studies the anatomical morbid conditions found in the various portions of the gastroenteric tract. He closes with summarized accounts of the various cases on record.

Berliner klinische Wochenschrift, February 18, 1907.

The Treatment of Subcutaneous Injuries of the Pancreas.—Karewski says that severe, isolated, subcutaneous injuries of the pancreas are among the rarest of abdominal lesions. Garré in 1905 was able to collect records of about thirty subcutaneous tears of the gland, of which only three were uncomplicated. To these, three others may be added which have been reported since that time, and out of this total of eleven only three patients were saved, in each case through prompt laparotomy. The author describes a case of his own which also terminated in recovery. The patient was a boy of fifteen years who received a blow in the abdomen from a wagon pole while riding a bicycle. He was able to walk home, but soon after went into collapse. At the operation the head of the pancreas was found in a crushed condition, and there was a moderate subperitoneal hemorrhage. The pancreatic injury was packed and the incision partly sutured. The boy made a good recovery except for the persistence of a sinus, which discharged pure pancreatic juice, and did not close for nearly three months. In the after treatment careful observations were made on the influence of diet on the character of the discharge from the sinus, and it was found that, by resorting to a diet rich in meat and fat but poor in carbohydrates, the juice became concentrated and very scanty. By continuing what was practically a strict diabetic diet

the closure of the sinus was finally secured, and the author recommends this plan as an important feature in the management of such cases.

Munchener medizinische Wochenschrift, February 19, 1907.

The Operative Treatment of Laryngeal Stenosis.—Wendel says that fractures of the larynx, while comparatively rare, are serious injuries which tax the ability of the surgeon, partly on account of their immediate dangers, and partly on account of the risk of permanent impairment of the functions of the larynx. Of seventy-five cases reported by Fischer, the mortality was 70 per cent. Durham found a mortality of 77 per cent. in sixty-nine cases, but the more recent figures of Hopmann show a mortality of 37 per cent. out of seventy cases. The author describes a case of his own in which a young man fell against the edge of a box and sustained a fracture of the thyroid cartilage. The immediate consequences were severe, but were successfully combated by a tracheotomy, but in the process of repair a serious degree of stenosis of the larynx resulted. This was partly due to adhesions between the posterior halves of the two vocal cords, but on incising these it was discovered that a dense cicatricial band just below was the chief factor in the constriction. A laryngotomy was accordingly done, and it was seen that there had been some displacement of the fragments, so that in the course of their union an oblique distortion of the larynx was produced. The author describes the rather complicated method in which the defect caused by the excision of the cicatricial tissue was covered in with mucous membrane, and states that the patient recovered completely with a well-functionating larynx, though slight hoarseness persisted.

Specific Solubility and Its Applicability in Forensic Blood Tests.—Dehne points out the possibility of practically making use of a property of homologous blood sera in connection with antisera. This phenomenon, which was first noted by Michaelis, consists in the fact that specific precipitins formed as the result of the union of antiserum and antigen are soluble in an excess of the latter. Dehne describes observations made in order to test the validity of the principle laid down by Michaelis, and arrives at the conclusion that the solubility of the precipitin in the antigen is a specific phenomenon, for which he suggests the term "specific solubility." He proposes that advantage be taken of it in order to secure corroborative evidence in forensic blood identification work, as when positive it serves to prove the specificity of the reaction obtained. When dealing with very small amounts of the material to be tested, it may also be of value in enabling the specific diagnosis to be made with greater certainty than would be the case if only the ordinary precipitin reaction were available.

Deutsche medizinische Wochenschrift, February 21, 1907.

The Treatment of Hemorrhoids by Means of Injections of Carbolic Acid.—Franck is of the opinion that this operation has a sphere of usefulness in the work of the general practitioner in dealing with selected cases in which there is no local contraindication and in which general anesthesia is undesirable. He suggests the following modifications of the usual technique: The fluid injected is a 50 per cent. solution of carbolic acid in alcohol, but, before throwing it into the hemorrhoid, this is rendered tense by the application of a wire snare around its base. The loop of the instrument is tightened gradually, so as to cause the tumor to become congested slowly, and the needle is plunged directly into the center of the mass, and several drops of the carbolic acid are injected. The snare is not removed until the entire mass has undergone thrombosis. Each tumor is treated in this way, and a local dressing of drying powder is applied. On the fourth day a dose of castor oil is given, and by the seventh or eighth day the necrotic tissue has usually sloughed off. Complete healing requires from three to four weeks. The existence of deep fissures or large size of the hemorrhoidal masses constitute contraindications to the injection operation. The author lays especial stress on the use of the snare in order to produce congestion of the tumor and to restrict the amount of thrombosis, and on the employment of an alcoholic solution of the acid.

Diverticulum of the Esophagus.—Meisenburg states that, thanks to the introduction of the use of the esophagoscope, it is now possible to make the diagnosis of esophageal diverticulum with considerable accuracy. Starck, in his monograph, was able to collect records of ninety-three cases reported up to 1900, but since then the number of cases has been very largely increased. Lotheisen has described a special form of esophagoscope for use in such cases which is provided with a special lateral mirror intended to serve the purpose of affording a view of the opening into the pouch, but Meisenburg does not consider that this is necessary in order to recognize the condition. He gives the history of a case in which the presence of a diverticulum the size of a walnut was established simply by means of the ordinary gastric bougie, the operator finding it possible by suitable manipulation of the handle of the instrument to cause it to enter either the diverticulum or the lumen of the esophagus at will. The diagnosis was later confirmed, both by esophagoscopy and by radiography, and the author calls attention to the necessity for care in the use of the former method by describing a rather serious subcutaneous emphysema that was caused at one session with the patient through a slight laceration of the pharyngeal mucosa produced through a sudden change in the patient's position while the tube was being introduced.

French and Italian Journals.

Scleroderma Cured by Mercurial Treatment.—Pietro Chirone discusses the etiology and treatment of scleroderma, describing a case observed by him that was cured by mercurial treatment, the skin becoming soft and supple after having been for some years hard and contracted. The etiology is only incompletely known, it has seemed to result in some cases from rapid cooling of the body after extreme heat; from a prolonged sojourn in a damp place; from traumatism or violent emotions; from morbid conditions of the genital organs, and from disturbances of the menstrual function. It occurs most frequently between the ages of 25 and 38. There are three principal varieties: edematous scleroderma, scleroderma in plaques, and scleroderma of the extremities. These forms are not entirely independent of each other; they may be associated with one another, or with other similar affections, especially Reynaud's disease, symmetrical gangrene of the extremities, erithromelalgia, facial hemiatrophy, and vitiligo. Scleroderma begins in the skin and subcutaneous cellular tissue, after a period of indefinite symptoms, by a hypertrophy of the tissues accompanied by induration and increase or diminution of pigment. To this succeeds a cure of the condition, or a complete atrophy of the skin, which may extend to the periosteum and the bones. There are several theories as to the nature of the disease: the nervous theory, which admits a neuropathic condition and trophic alterations in the skin; the arterial, which depends on primary alterations of the vessels, that is, arteriosclerosis due to alcohol and syphilis; the dyscrasic theory, scrofula, syphilis, or chronic rheumatism being the determining cause, and the phlogistic theory, according to which it is essentially a chronic interstitial inflammation of the skin. According to others it is related to pathological alterations of the thyroid gland. Histologically it is found that the corneous layer of the skin is intact, the reticulum of Malpighi is the subject of an increase of pigment, and the derma and subcutaneous tissues show a hypertrophy of the connective tissues. There is an accumulation of lymphoid cells along the vessels and in the lymphatic spaces. The best remedy is mercurial treatment, with frictions of the ointment externally, and iodide of potassium internally.—*Giornale internazionale delle Scienze Mediche*, November 30, 1906.

Physiological Pulmonary Anthracosis of Intestinal Origin.—According to Calmette, Vansteenberghe, and Greyser, in spite of opinions to the contrary which have been held, it must be admitted that colored dust is absorbed by the digestive tube and can be carried by means of the lymph through the mesenteric ganglia to the lungs. It must also be admitted that the existence of a physiological, pulmonary anthracosis of intestinal origin cannot be contested; and it must also be admitted that this form of anthracosis is absolutely identical with that which is observed in smokers and in miners and should not be confused with anthracosis which is purely mechanical and of aerial origin.—*Gazette des Hôpitaux, Civils et Militaires*, December 18, 1906.

Permanence of Spirochæta Pallida in a Pigmentary Macule Left After a Syphilitic Papule.—A. Pisani tells of a case of hereditary syphilis in a baby of two and a half years of age, in which mercurial treatment had been carefully carried out, which had a macular lesion left after the atrophy of a syphilitic papule that had appeared a few months after birth. The child had on only two occasions given any symptom of syphilis, and had died of tuberculosis of the lungs, there being no syphilitic manifestations at the time of death. There were no microorganisms found in the internal organs, but the atrophied tissues in the left leg contained many spirochetes, while there were no traces left of the infiltration that had formerly existed. The spirochetes were diffused irregularly in the tissues; some were intracellular, some intercellular, some well preserved, others degenerated. The author concludes that in a patient properly treated by mercurials spirochetes are permanent in the atrophic residua of the specific papules even two years after apparent cure, and that in the latent periods of syphilis the spirochetes remain localized in the tissues which were the seat of previous manifestations.—*La Riforma Medica*, January 12, 1907.

Book Reviews.

American Practice of Surgery. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., Albert H. Buck, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Volume II. New York: William Wood & Company, 1907.

The second volume of this system of surgery emphasizes the promise of the first volume that the completed work will make a surgical treatise without a superior in the literature of the world. The plan of the work confines the list of contributors to men of North America. Whether that is the best possible plan and one that offers a guarantee that nothing better could have been written is an open question. But it can be said without laying ourselves open to the charge of chauvinism, that, taken as a body, the surgeons of America are surpassed by none in the world. Many of the great and life-saving operations have originated in this country, and though the technique of certain procedures may have been refined by workers in other countries, American surgery to-day has no peer, at least no superior, anywhere in the world. A national work, furthermore, has the advantage of presenting the science of which it treats in the form recognized and followed by the leaders in one's own country; it is in accordance with the teachings of the country, and the views it inculcates are those held by the mass of practitioners. The contributors to this volume are all men who have proved themselves by their works and have won a national if not all an international reputation. They are: W. C. Borden of the U. S. Army, C. R. Darnall of the U. S. Army, C. N. Dowd of New York, V. P. Gibney of New York, A. F. Jonas of Omaha, E. L. Keyes, Jr., of New York, J. F. Leys of the U. S. Navy, W. McD. Mastin of Mobile, D. W. Montgomery of San Francisco, P. M. Pilcher of Brooklyn, J. C. Stewart of Minneapolis, B. T. Tilton of New York, D. F. Willard of Philadelphia, and A. C. Wood of Philadelphia. The subjects treated of in this volume are: "Diseases Which Belong in Varying Degrees to the Domain of Surgery (Leprosy, Plague, Glanders, Scurvy, etc.)," "Tuberculosis and Syphilis in Their Relation to Surgical Work," "Surgical Diseases of Widely Distributed Structures of the Body," "Surgical Diseases Caused by Heat, Cold, and the Electric Current," and "Simple and Complicated Wounds." Each one of these chapters deserves a special review, but the limits of the present notice forbid. The reviewer, if space permitted, would criticise some of the sections of some of these chapters as possibly lacking in the completeness looked for in an encyclopedic treatise, but he has no fault to find with the teaching, which is eminently orthodox. The get-up of the volume is all that could be desired. The book is heavy, indeed, but encyclopedias are not manuals and are not gotten out in pocket editions. The illustrations are numerous and explanatory, and we commend the wisdom of the publishers in not sacrificing the text to them. Where half-tone pictures have demanded it, moderately calendered paper has been used, but for the most part the paper is of a dull finish, which does not try the eyes, and the man with normal vision or one which has been made normal by glasses, will not pay for his study of the work, even by artificial light, with a racking headache.

Biographic Clinics. Volume IV. Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, Upon the Health of Patients. By George M. Gould, M.D., Editor of *American Medicine;* Author of "An Illustrated Dictionary of Medicine," "The Practitioner's Medical Dictionary," "Borderland Studies," "The Meaning and Method of Life," etc. Philadelphia: P. Blakiston's Son & Co., 1906.

In this volume Dr. Gould reviews the life histories of Balzac, Tchaikovsky, Flaubert, Lafcadio Hearn, and Berlioz, extracting from their biographies and letters many references to morbid symptoms which the experience of many modern ophthalmologists teaches were due to eyestrain. The symptoms were similar to those of Carlyle and his wife, Huxley, Darwin, Spencer, Parker, Wagner, Nietzsche, and others, whose troubles were recounted in earlier volumes of this remarkable series—headache, vertigo, nausea, indigestion, abdominal pain, mental distress, wretchedness, in monotonous iteration, all due to, or at least explicable by, reflex disturbances from ocular defects, and all probably preventable by properly fitted spectacles. If Gould is right, and no one who has experienced the relief from recurring headaches and vertigo following the correction of visual defects by glasses can doubt that he is in the main correct, even if one hesitates to follow him to the limit of his contention, the tardiness which has characterized and still characterizes the acceptance of this truth cannot but be deplored and wondered at. The paper on Lafcadio Hearn is the most interesting of the series, though less instructive, since this writer's ocular defects were apparently irremediable. The interest of the chapter lies in the fact that the author and his subject enjoyed an intimate personal acquaintance, and Gould points out most entertainingly the influence upon Hearn's personal character and literary peculiarities of the extreme myopia and monocular vision from which this gifted creature suffered.

There are several other essays in this volume, not "biographic clinics," but bearing upon the question of eyestrain and its enormous importance in the etiology of functional disease. The first chapter is entitled "Progress" and deals with the evidence of the gradual acceptance of the doctrine of eyestrain by men of prominence in all branches of medical practice. Other essays are "The Cause, Nature, and Consequences of Eyestrain," "The Etiology of Astigmatism," "A Study of Failures in Ophthalmic Practice," "The 'Exaggeration' and Hobby-Riding of the Eyestrain Theorist," and "The Eyestrain Origin of Epilepsy." These articles are polemic, some of them extremely polemic, in tone and not calculated to convince those suffering from the theological disease of "invincible ignorance," especially those personally attacked. Dr. Gould is in discussion a hard hitter and he hits hard in these essays. It is a question, we think, whether the method he has chosen is the one which will win the most converts to his views; it certainly will not convert his active opponents—but probably nothing would. Those who are already half convinced and those who are open to conviction will read the book with interest, and if not converted will at least feel that they have been repaid for the time they have given to the reading.

Rhythmotherapy. A Discussion of the Physiologic Basis and Therapeutic Potency of Mechano-Vital Vibrations, etc. By Samuel S. Wallian, A.M., M.D., etc. Chicago: The Ouellette Press, 1906.

This is another form of treatment which is to be added to the large aggregation of physiological methods now in vogue, but it is apparently only a modification of what we have known for some time as "vibration." It is not to be denied that in this, as well as in many other methods of a similar character, there may be some value, but unfortunately the faith of the sensible reader must be shaken when in a book of this kind by an enthusiastic advocate of some particular "school" every disease in the calendar is brought under the benign and beneficent influence of the method exploited. Alopecia, anuria, appendicitis, ataxia, blenorrhea, bronchitis, and so on through the entire alphabetical list of diseases down to venereal affections and warts, are all cured or benefited by "rhythmotherapeutic" procedures, although in a number of these the writer acknowledges the value of other means of treatment. It may be that some day these methods will come to their own, but that day will be indefinitely prolonged unless the subjects are presented in a more rational manner.

Essentials of Human Physiology. By D. Noel Paton, M.D., B.Sc., F.R.C.P. Ed. Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Lecturer on Physiology, School of Medicine of the Royal Colleges, Edinburgh. Examiner in Physiology in the University of Glasgow and for the Royal College of Physicians, Edinburgh; and Late Examiner in the University of Edinburgh. Second Edition, Revised and Enlarged. Chicago: W. T. Keener & Co.; Edinburgh and London: William Green & Son, 1905.

This handy volume contains all the physiology that is actually needed for the average student or practitioner of medicine who does not care to take up this branch as a special study. The author has kept the needs of the medical man in view, and has dwelt especially on the parts which have a direct bearing on the practice of medicine, relegating those of purely scientific interest to the background and treating of them only in so far as is necessary to a general comprehension of the subject. In the first part of the work the author treats of protoplasm, the cell, and the tissues, the latter being divided into the vegetative and the master (muscle and nerve) tissues. Following this are sections devoted to the senses and the nervous system. Part Second deals with the nutrition of the tissues, with subsections on the blood and lymph, the circulatory system, respiration, food and its digestion and utilization, internal secretions and immunity, and excretion. Reproduction is studied in Part Third. The author's style is clear and easy, making pleasant reading. Upwards of two hundred illustrations, mostly diagrammatic, serve to elucidate the text. The book is attractively gotten up, of convenient size and weight, and is completed with a very satisfactory index. Altogether the work can be confidently recommended to the student as well as to the practitioner who wishes to refresh his memory and to keep abreast of the advances in this interesting science.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held February 25, 1907.

THE PRESIDENT, DR. WALTER LESTER CARR, IN THE CHAIR.

THE evening was devoted to a symposium on Fracture-Dislocations of the Spine.

Fracture-Dislocation of the Spine, Causation, Symptoms, and Diagnosis.—Dr. SAMUEL LLOYD read this paper. (See page 465.)

Pathological Changes.—Dr. PEARCE BAILEY read this paper. (See page 471.)

Surgical Treatment.—Dr. IRVING S. HAYNES read this paper. (See page 472.)

Dr. JOSEPH A. BLAKE said that he was more interested in the treatment of fracture-dislocations of the spine than in the diagnosis and the other features that had been presented by the readers of the papers. They were talking, of course, of fracture-dislocation of the spine, not the result of bullet wounds, or other fracture-dislocations which were apt to be associated with extensive cord lesions. In regard to the treatment he had taken rather a conservative ground. At Roosevelt Hospital they had a large number of cord injuries, but most of them were transferred. For the last two years he had taken the ground that operation should not be denied these patients; they should be given the opportunity of any benefit which might accrue from operation. Partial or complete lesions of the cord were always serious. In regard to fracture-dislocations of the spinal column without evidences of cord lesion, it seemed to him that it would be better to operate, to open up the canal, especially if the injury was in the upper part of the spinal column, and try manipulation and extension. The open operation, in his opinion, was better. All who had attempted the reduction of the fracture-dislocation without operation could appreciate how difficult reduction was, and how dangerous it was if the cord was not exposed and protected from injury. In complete division of the cord operation was not indicated. In partial lesion of the cord it could be divided into different categories; if there was a partial division with deformity, it was better to operate. When the patient presented evidences of compression it was better to operate. With regard to the time for operating operation should be performed before degenerative changes could take place, within the first day or two if possible. The time for operating was when the shock had subsided. Laminectomy *per se* was not a dangerous operation and did not injure the spinal column to any great extent, the integrity of the column being preserved.

Dr. JOSEPH B. BISSELL confined his remarks to the treatment of fracture-dislocations of the spine. He said it had been his good luck to have seen many acute fractures, mostly confined to the dorsal vertebræ, most of them having been elevator accidents, and he had not seen one case in which he did not think an exploratory laminectomy was indicated. Operation never did harm, and it might do good. Unfortunately his experience had not been large enough for him to draw any strong statements from the results. In all the cases that he had treated he said he would have been afraid to attempt restitution by manipulation; it was better by far to operate. If the cord was absolutely compressed or cut off, he advised that they should always prepare such patients for future troubles, that was, the occurrence of the persistent cystitis, and therefore do a suprapubic cystotomy and place in drainage.

Dr. WILLIAM B. PRITCHARD emphasized the importance of the last remarks of Dr. Bissell regarding the preparation of patients for troubles which were to come. The subject was not one which permitted a very extensive experience for any of them, but there were one or two impressions that had been deeply fixed in his mind. One was the extreme difficulty attending the making of an accurate diagnosis upon which to base a decision whether operative interference was indicated. The other question was one of prognosis. He believed the indications for operation were chiefly negative. The final outcome in the great majority of the cases, if operated upon, was extremely unsatisfactory; in cases of spontaneous repair, almost total disability resulted from fracture-dislocation of the spine with injury to the cord. When to operate could not be arbitrarily determined by any set rules. This was the matter of two factors, the personal equation, plus the experience of the specialized specialist in this particular field of medicine. It was on negative lines rather than on positive that cures had been accomplished.

Dr. WISNER R. TOWNSEND said that certain points had struck him in the handling of these cases of fracture-dislocations of the spine. In the first place there was the futility of any attempt at reduction by manipulation. It seemed to him unwise to attempt to reduce these cases, with or without an anesthetic, where one did not know how much compression there was. If any attempt was made it should be by the open operation. He had never attempted to reduce the deformity. He spoke of a patient seen in the hospital with a fracture-dislocation, and who was very comfortable in plaster. It was thought better to place some other form of dressing on. The dressing was applied, but not in the same way. When the patient sat up he became cyanosed and serious symptoms set in. It seemed to Dr. Townsend, in watching the work done in applying plaster-of-Paris, that not enough assistants were employed. The shoulder and body should be held, while other assistants hold the head. Dr. Townsend recalled a case of fracture-dislocation in the lower spine with symptoms of paralysis in which the jacket was placed on in a hammock, a safer method than by suspension. These jackets should be left on for a year or more.

Dr. WILLIAM M. LESZYNSKY said that his experience in fracture-dislocations was limited to the patients in the hospital and seen within a few hours, or within thirty-six hours. The most fatal cases were those that showed all the signs of complete injury to the cord and where the fracture-dislocation occured in the lumbar vertebræ. When the injury was in this region there was paraplegia, paralysis of the bladder, and rectum, and they were the most unfavorable cases. Yet when one considered the element of operation in these cases, and that laminectomy, particularly in the dorsal region, did not interfere with the integrity of the spinal column, the patient should be given the benefit of the doubt. He agreed with the statement that one could not determine positively within twenty-four or thirty-six hours that there was a complete severance of the cord. He saw a patient one year ago within two days after the injury. There were no positive findings of fracture-dislocation, yet there were evidences of compression of the cord, a hemi-lesion of the cord. At least there was a paralysis of motion on one side and of sensation on the other of the Brown-Sequard type. The canal was opened and a spicule of bone was found projecting from the body of the vertebra into the cord itself. This was rongeured off, the canal closed, but no improvement occurred in a week. There was a long-continued subsidence of the symptoms, but the paralysis remained the same at the end of six or seven weeks. When the patient left the hospital he was no worse. With his limited experience he had come to the belief that, where the abdominal muscles were involved, the cases resulted most unfavorably.

Dr. REGINALD H. SAYRE said he would like to draw the attention of the members to the necessity of keeping patients with fractured spines protected for a longer time than in fractures of other bones of the body. He had had two cases under observation where the diagnosis of fracture had been made in a different hospital; these patients

had been kept in bed for a time and then dismissed after the subsidence of the symptoms. Later on, as soon as they got on their feet again for any length of time, symptoms of paralysis in the upper extremities in both cases came on. Both of these were cases of fracture of the cervical spine, in one case, total; in the other, partial. The symptoms subsided after placing on support to the head and neck, which was continued for many months. The skiagraph confirmed the diagnosis of fracture through the body of the vertebra with anterior displacement in one of the fourth upon the fifth. The other case referred to was before the days of the radiograph, and, therefore, the diagnosis was not confirmed by the *x*-ray.

Dr. Samuel Lloyd agreed fully with the statement made regarding attempts at reduction in fracture-dislocation of the spine by means of manipulation; one was very liable to do much damage.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK

Stated Meeting, February 18, 1907.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Bill for the Creation of a Single Examining and Licensing Board for Medical Practitioners in New York State.—Dr. Reynold Webb Wilcox introduced the following resolutions, which were unanimously adopted:

Resolved, That the Medical Association of the Greater City of New York, at its stated meeting, held in New York City, February 18, 1907, declares that it earnestly favors New York State Senate bill No. 154 and Assembly bill No. 160, inasmuch as they provide for the creation of a single examining and licensing board for medical practitioners, thus obviating on the part of the State all distinctions between the several existing schools of medicine.

Resolved, That this association is opposed to the bill that has been introduced into the present Legislature, proposing to create a special "School of Osteopathy"; further, that it is opposed to the legislative creation of any special so-called "Schools of Medicine," believing that such legislation is of no advantage to the public.

Resolved, That the corresponding secretary is hereby directed to send copies of these resolutions to our State Senators and Assemblymen, to the Speaker of the House and to the chairman of the legislative committee of the Medical Society of the State of New York.

Mental and Functional Nervous Disease in General Practice.—Dr. William B. Noyes read this paper. He said that a discussion of mental and nervous disease from the more technical point of view started with eliminating those cases of purely nervous and hysterical people whose cases did not deserve a separate diagnosis, as their trouble was merely temperamental and symptomatic. Yet the general practitioner had to take some responsibility for these cases, even though he realized that self-control and common sense would cure them without a physician. The trend of recent medical literature emphasized that cases of pure neurasthenia and pure hysteria were being much more sharply defined, and as a matter of fact were much rarer than they were formerly considered. This was obvious to anyone who examined the records of his clinic or private practice of recent years. The reason was the cutting away of the relatively unimportant cases on the one hand and considering other cases, formerly classed as hysteria and neurasthenia, as psychoses. Just as modern internal medicine had made its greatest strides when working hand in hand with the chemist, and operative surgery when borrowing mechanical methods and principles from the workshop, and general pathology when it had learned to use the methods and researches of the biologist, so if one desired to get a clear and reasonable basis for the study of nervous and mental disease he must turn to the facts, the methods and the theories of normal psychology. The human mind might best be understood if we compared it to a boat, or to a man swimming in water. We saw part of the vessel or of the swimmer, and what we saw was the part above water. Then came the water line, and below was the submerged part. In the case of the human mind, what we termed the part above the water line was the conscious or objective mind. The part below the water line, which the individual himself and the superficial observer ignored, was what psychologists termed the unconscious, or subconscious, or subjective mind. A healthy average mind in a healthy body, especially in the years of maturity, managed to keep its water line in about the same place. Hereditary instincts, reflexes, habits, memories, and various organic sensations that seemed to be forgotten were below the water line, below the threshold of consciousness, and for the casual observer nonexistent. In contrast to these normal personalities, whose water line of consciousness did not vary to any great extent, there was a class of individuals who possessed what was popularly known as an "unstable nervous system." We might speak of them as a class in which the water line of consciousness was variable to a marked degree. In such individuals, if some definite physical condition like a toxemia, a strain, or a shock arose, the very personality seemed to change. The swimmer was half out of water; he was obviously fatiguing himself with every stroke. He suffered from innumerable disagreeable sensations that a healthy man was unconscious of. Our education from earliest infancy was directed toward making us ignore thousands of sense impressions until in our adult normal state we were completely oblivious and unconscious of them. These cropped out again in the class of individuals under discussion, in whom the mental activity and inhibition were relaxed, and as a result fatigue symptoms were sure to appear. The balance or poise of the personality was changed, and normal mental and physical life was hampered by the appearance of various new and usually unpleasant phases of personality and physical sensations. The strain could easily become too great to bear, and a complete physical breakdown might be the result. All these persons developed the habit of introspection and devoted themselves to a study of their new symptoms. Yet most of these symptoms, if analyzed, were merely a part of the subconscious mental and physical life. The fatigue symptoms were new, but their appearance was to be expected under the circumstances. This condition we called neurasthenia, or nervous prostration.

In the rest of his paper, and along these same lines, Dr. Noyes discussed hysteria and the type of cases in which the subconscious mind developed fixed ideas. Of these the obsessions or *idées fixes* on the one hand, mental ties in perfectly sane people, and paranoia on the other, with persistent delusions and failure of reason and judgment, were contrasted. Also another type of cases, not unusual in general practice, was that where the patients, after suffering from what one might easily call neurasthenia or hysteria, seemed to pass into a silly, half demented or confused condition. Cases of this class were labeled dementia præcox. A few years ago this seemed to be a fairly clean-cut diagnosis, and was supposed to indicate a condition of permanent insanity. The diagnosis was at present confusing, because the time limit had been removed; many of the patients improved, and little was left but the negativism and the primary demented condition.

The Early Diagnosis of Insanity.—By Dr. Arthur Conklin Brush of Brooklyn, N. Y. The author stated that although some marked phase or violent outbreak on the part of the patient was usually regarded by the friends as the beginning of an insanity, careful inquiry would reveal the fact that in the majority of cases the bursting of the storm had been preceded by a prodromal period lasting for months or years, and during which the importance

of the changes in the mental life of the patient had passed unrecognized. Thus the opportunity of correcting the abnormal mental tendencies or guarding against their consequences was lost. The early diagnosis of insanity was rendered difficult by the fact that there was no abstract difference between the sane and the insane mind; that there were no elements found in insanity which were not present in sanity; that there was no sharp dividing line between the two, and that our knowledge of insanity, with one exception, was purely clinical and rested on no substantial basis. As there was no abstract difference between the sane and the insane mind, the recognition of the latter was most easily made by a study of the former, and the changes in the healthy mechanism which formed the insane state. One must be able to exclude entirely the doctrine that the mind or soul was something apart from the body, and be able to regard the mind as simply the product of cerebral activity. The psychic development of man formed his personality or ego, and depended much on his age, education, station in life and environment, but not wholly so, for we inherited mental peculiarities just as we did physical ones, for the reason already cited, that the mind was the product of our physical brain. It was the derangement of this wonderful mechanism which constituted an insanity, for by insanity we meant a disease of the mind, and not a simple loss of the same. In the prodromal period the picture presented was often one of cerebral weakness, such as was found in ordinary neurasthenia. At first the patient often recognized his condition, and complained that he did not sleep well; that he was depressed and irritable; that he became easily fatigued mentally and was worried about himself. But soon this recognition of his condition was lost, and one difference was soon apparent which widely separated neurasthenia from an insanity, and that was that the neurasthenic recognized his true condition, while the insane patient did not. That fact had long been recognized and formed the basis of all our law relating to the questions concerning insanity. An insanity, from its onset, showed itself by a disturbance of the whole psychic mechanism, although it might be most marked and remain so in certain functions of the mind. While there was nothing found in insanity which was not found in sanity, and while all the changes described could and did occur at times to a slight degree in the normal mind, it was their permanency and exaggeration to a point which rendered the patient unable to jude as to the nature, quality, and consequences of his acts, and thus unable to adapt himself to his environment, which divided the sane from the insane mind.

Aural Affections in Relation to Mental Disturbances.—Dr. W. Sohier Bryant said that with respect to mental affections, aural diseases might be divided into six categories: 1. Cases of aural derangement which bore no relationship whatever to mental disturbances. 2. Cases of aural disease causing mental irritation and leading to psychical affections usually colored by the ear symptoms. 3. Disturbances of the ear, which acted as causes of general exhaustion and hastened the psychic symptoms. 4. Diseases of the ear, which progressed to loss of hearing, destroying the connection with the outside world and thus upsetting the mental equilibrium. 5. Hallucinations of hearing, which were the result of the combination of an ear affection with a psychopathic condition, and which were caused by the subjective sensation of a disturbed organ of hearing falling upon deranged higher centers. 6. Affections of the ear, which were secondary to the mental disturbance. The first group occurred alone. The remaining five groups might be found variously combined in any given case. After discussing in detail these various aural derangements and their possible bearing upon mental affections, Dr. Bryant said the result of his experience in the examination of the ears of the insane had convinced him that ear disease was much more prevalent among the insane than among the sane. In fact, it was the exception not to have some demonstrable functional disturbance of the ear. The author found it present in 90 per cent. of the insane examined. In many of these cases a history could be obtained which showed that the ear disease was in existence before the insanity appeared, and in others the condition of the ears was such that it must have antedated the mental disturbance. His summary of the subject was as follows: 1. Insanity was usually found in conjunction with aural diseases; in the majority the two affections were mutually dependent. 2. Hallucinations of hearing arose from tinnitus through the misinterpretation of aural stimuli under psychopathic conditions. 3. Cessation of the tinnitus could be expected to relieve the auditory hallucinations.

In connection with his paper, Dr. Bryant presented a patient who was subject to distinct auditory hallucinations. The ear condition in this case was a moderate tinnitus, associated with slight deafness and catarrhal otitis, and a very marked degree of engorgement of the nasal mucous membrane.

Phototherapy in Nervous Diseases.—By Dr. A. D. Rockwell. (See page 474.)

Dr. William M. Leszynsky said that while most of the speakers had given quite a clear conception of certain nervous diseases in a general way as they appeared from the standpoint of the neurologist, very little had been said as to how such cases were to be managed. What could the general practitioner do for this class of patients after he had recognized them? How was he to manage a case of neurasthenia, or hysteria, or incipient or more advanced insanity? One of the first and most essential features in the treatment of such cases was change of environment. This was a difficult problem to face in dealing with patients who could not stand the expense, although steps had recently been taken in this city to provide a free hospital for nervous diseases.

Dr. Noyes, in closing, said that while there was ample provision in this city for the care of general medical or surgical cases, Bellevue Hospital and the Montefiore Home were the only institutions that took care of patients suffering from chronic nervous affections. The latter was a model institution and there was room for at least half a dozen similar ones in this city for the care of chronic nervous disease and incipient mental disorders. It is not impossible that private charities and church organizations did less satisfactory work in their hospitals for acute diseases than large municipal hospitals might do, but there was an enormous field for them in caring for chronic diseases, especially nervous and the less serious mental disorders.

Dr. Brush, in closing, said Dr. Bryant had sounded the keynote which he hoped would be followed in the treatment of the insane. Under the old method, the treatment of the insane consisted essentially in shutting them out from the world, but we now recognized the fact that these so-called hallucinations of the insane were really illusions resulting from faulty organs of the body, and one of these was the ear. If we could remove the cause of the insanity before the mind was hopelessly broken down, we would do much toward restoring the patient to a normal mental state.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PUBLIC HEALTH.

Stated Meeting, Held March 12, 1907.

Dr. John S. Billings, Jr., in the Chair.

Milk as a Carrier of Infection.—Dr. Charles Harrington, secretary of the Massachusetts State Board of Health, discussed the transmission of the nonbovine diseases especially. These were chiefly typhoid fever, diphtheria, a group of diarrheal diseases which we usually called cholera infantum, and scarlet fever. In Massachusetts he had had

occasion to study eighteen small epidemics of typhoid fever, in fourteen of which the probable vehicle of infection was the milk; in three it was private or semi-public water supply, and in one instance it was unknown. Out of the fourteen traced to milk, they had been able in eleven instances to obtain a history of typhoid fever at the place of the milk production. Typhoid infection of the milk was relatively easily brought about. Out of 1,500 cases studied all over the world, investigators had found typhoid bacilli in the urine in about 25 per cent. About 4 per cent. of typhoid cases became chronic bacilli carriers. The speaker enumerated a number of instances in which these bacilli carriers were the cause of infections long afterward. It certainly was out of the question at present to examine the people having to do with milk supplies so carefully that such bacilli carriers would be excluded. In addition to this there was the danger of infection by way of infected water supplies. It had been found that extremely diluted water could be drunk by some individuals without any harm whatever. They were immune. Hence the consumers of milk infected in this way could become infected and yet no typhoid fever be discoverable at the source of the milk supply. The speaker had seen a case of this kind in which the water was grossly contaminated from a nearby privy vault.

Milkborne diphtheria was much less prevalent. The bacilli were not, of course, excreted by the urine or feces, and the disease was not waterborne.

Milkborne scarlet fever was still open to question. Epidemics of this character had been described, but the evidence was far from convincing. He had himself observed such an epidemic recently. On one day in January there were 63 cases of scarlet fever reported in Boston and vicinity in a population of about 800,000. In the next five days there were 485 cases, so that the total epidemic when it had run its course embraced 717 cases. On investigation it was found that 84 per cent. of the cases were in families supplied by a single large milk company doing both a wholesale and a retail business. The milk came from 200 farms and all these were investigated, with negative results. So, also, were all the drivers and others. Finally the infection was traced to a man tending the huge mixing tanks, whose duty it was to taste all the milk to see whether it was sweet or not. For this purpose an ordinary spoon was dipped into can after can and never washed between the tastings. The man had a suspicious tongue and sore throat, and his sister was found at home with peeling of the skin.

But all of the above cases of milkborne disease were as nothing compared to the diseases in general due to the usual dirtiness of the milk. Dr. Harrington referred particularly to the diarrheal diseases of infancy. During the year 1905 the following deaths were recorded for the German cities having a population of over 15,000: In March there were 1,500 deaths, in April 1,600, in July 15,000, in August 16,000. This was the regular picture everywhere. The purchasing public held the key to the situation; it should be willing to pay a little more. And yet this had been found practically an insurmountable obstacle. It was unfair to the clean dairyman to allow dirty milk to be sold. There should be State and municipal regulation of dairies and kindred institutions.

Pasteurization: the Advantages and Disadvantages to the Consumer.—Dr. Rowland G. Freeman of New York City began by defining pasteurization, and at once distinguished between real pasteurization and commercial pasteurization. It certainly was difficult to obtain good raw milk; hence it was necessary to pasteurize it for infants' use. He claimed that the thermal death point of tubercle bacilli should be the minimum that could be regarded as safe. What the thermal death point was was still a matter of debate. He read a long list of authorities and the degree of heat given by each. These differed considerably. As a safe average he regarded 155° F. for twenty minutes sufficient. Commercial pasteurization was only 158° F. for fifteen seconds. This was worse than useless, for he had known milks to have a higher bacterial content after this "pasteurization" than before. The purpose of commercial pasteurization was only to enable the milk dealer to market an otherwise unsalable milk. He was opposed to commercial pasteurization, but believed strongly in the efficiency and applicability of home pasteurization.

Pasteurization: the Advantages and Disadvantages to the Municipality.—Dr. Joseph Roby, Deputy Health Officer of Rochester, N. Y., said that there was one phase of the subject that he would merely mention without entering into any discussion, namely, the advisability of municipal ownership of the pasteurizing plant. It was a political question and not suited for a debate of this kind. The so-called commercial pasteurization, *i.e.*, 155° for a few seconds, he was absolutely against. True, pasteurization deserved some consideration. It would not in any way reduce the cost of inspection to the city. In fact, the milk supply should have more and more expert supervision. He did not believe in standardizing a milk by mixing it all together and so getting a 4 per cent. cream. It would be better to be satisfied with it as it ran, some days high, some days low. The newspapers and others should be taught to discriminate between "adulteration" of milk and a milk merely below standard. He did not think that the milkborne diseases amounted to much. The epidemics were quite rare. Intelligent supervision could do a great deal here. The farmer should be instructed as to the danger to the milk supply from any diphtheria, scarlet fever, typhoid and the like on his premises. The significance of a sore throat should be pointed out to him. Pasteurization, he thought, would tend to make the milkmen careless. They would use any old milk. The heating also caused changes in the milk which made it less digestible. He had described a scheme some time ago which would largely do away with the evils complained of. It was merely the substitution of a modified can for the milking pail. The can held twenty quarts, was supplied with a slit through which the farmer milked (through cheese cloth), and the whole outfit was sterilized at the central creamery or dairy and delivered sterile to the farmer. The latter milked into it without any previous rinsing. If such a can of milk were quickly cooled and then shipped—preferably without standardizing the milk by mixing in a vat—it would have a very low bacterial content by the time it reached the consumer. He believed that if pasteurization were adopted it should be of such a character that tubercle bacilli were killed. The best remedy of this tuberculosis problem he saw in the immunization of cows as practised by von Behring. In this way, with the milk given raw, the infants would be fed with a milk rich in antibodies against tuberculosis.

Current Misstatements and Fallacies Regarding the Milk and Milk Supply of New York City.—Dr. William H. Park of New York City began by calling attention to a number of misstatements and inaccuracies which appeared chiefly in the lay press, but also in some of the medical journals. Many of the writers seemed to think it was thoroughly justifiable to exaggerate, so long as they were doing it in a good cause. According to some, all of the contagious diseases were to be largely wiped out. As a matter of fact, we should not expect any such thing. Only a very small proportion of these were milkborne. Then, too, it should be remembered that the diphtheria bacillus does not increase in the milk at the ordinary temperature at which milk is handled. The tubercle bacillus does not grow in milk at all—at any temperature. And yet many authors spoke as though these bacilli were commonly found and increased enormously in milk. It had been stated that a large number of the cows in New York State were tuberculous. This was probably true, though the figures are perhaps nearer 10 per cent. It had also been stated that the milk sold in New York City was full of tubercle bacilli.

This was decidedly not true. Careful experiments both here and abroad had shown that in cows free from manifest tuberculosis, but reacting to tuberculin, the milk from the udders did not contain tubercle bacilli. It might become infected if the animal or another in the stall had clinical lesions, for then the bacilli were often abundantly discharged in the feces. In the case of cows having tuberculosis of the udder the milk of course was usually infected. But only about 1 per cent., or even less, of the cows had udder tuberculosis. Finally, it was still a moot point whether much tuberculosis is due to bovine infection. Certainly everything tended to show that direct infection, from person to person, was by far the more common method. Of the various disease germs which did get into milk, the typhoid bacillus was the one which would grow. Even this, however, grew but slowly at the temperature at which milk was ordinarily kept. This germ was easily killed by pasteurization.

Dr. Park then discussed commercial pasteurization. It was not a fraud, as some had said. We had no right to limit this term to five to fifteen seconds' heating. But he felt sure most of the opponents of this method had not made actual bacteriological tests, for it was surprising to see how great a destruction was effected by even very short exposures to 140° or 150° F. He had had set up in the Research Laboratory a pasteurizing apparatus of the type used commercially and had tested numerous samples of milk at various temperatures. A thirty-second exposure at a temperature of about 150° would kill most bacteria. It had been contended that in a pasteurized milk the germs developed more readily than in an unheated milk. The facts did not bear this statement out. Thus he had heated some milk containing 300,000 bacteria per c.c. for thirty seconds to 140° F. Tests made after heating showed only about 2,500 germs per c.c. After cooling, the milk had been kept in the icebox for twenty-four hours. Plates then made showed only 2,600 germs per c.c. In other words, no change had taken place. Several specimens had been infected with typhoid germs. Thus before heating the milk contained 1,500,000 typhoid bacilli; it was then heated to 140° F. for thirty seconds; result, 36,000 per c.c. In one minute there were only 0,000 per c.c. and in two minutes no germs at all. When a temperature of 150° F. was used all the typhoid germs were killed in thirty seconds. Experiments with diphtheria bacilli showed complete destruction in half a minute at 140° F. The speaker knew, of course, that this would not kill all tubercle bacilli. Many of these were killed, however, and experiments had shown that the others were injured. It certainly was worth something to kill all the typhoid, diphtheria, dysentery, and other similar disease germs and kill a large percentage of the tubercle bacilli. Practical results had always to be borne in mind. It was not necessary to heat the milk so that every tubercle bacillus possible in the fluid would positively be killed. Proper commercial pasteurization had distinct advantages in certain directions. He certainly did not think all milk should be pasteurized.

Dr. L. Emmett Holt, in discussing the papers, emphasized the fact that milk was not the largest source of contagious diseases in childhood. He believed that but little tuberculosis was brought about in that way. He believed in pasteurization, but warned against expecting too much from its adoption. Most mothers in the tenements already knew of the advantage of heating milk for infant feeding.

Dr. Lindsley R. Williams cited Japan as having just as much tuberculosis as we have in this country, and yet they use but very little milk there. We should educate the people to appreciate what a pure milk is really worth. Too much should not be attempted by legislation. Many of our laws were dead letters. We could not do everything by pasteurization alone, nor by inspection alone. Both would probably aid us in our work of preventing disease.

Dr. Simon Baruch said that nineteen years ago he had presented to the Pediatric Section of the Academy "A Clinical Study on the Etiology and Treatment of the Summer Diarrhea of Infants," in which the statement was made that sterilization of cows' milk must and would be a valuable preventive of summer diarrhea of infants. A retrospect of forty years enabled him to compare the fatality of the first half of that period, during which nearly every weaned baby fell victim to diarrhea in the summer—most of them succumbing, with the last half, during which he had never been called upon as a family physician to sign a single death certificate for infantile diarrhea, although infants formed a large part of his clientèle. Scrupulous sterilization of milk had wrought the magic change. This was his warrant for raising a note of warning against a return to raw milk as a food for infants. The portentous difference between human milk and cows' milk was that in the one case the milk passed directly from its source to the mouth of the infant, while in the other the milk was liable not only to generate its own bacterium lactis, which was so fatal to infants, but to become infected with other pathogenic bacteria on its more or less prolonged way from the udder to the consumer's mouth. Sterlization or pasteurization of milk was absolutely inefficient unless it were done in well stoppered bottles, to which no aerial contamination could have access. Sterilization in bulk of the milk supply of a city must prove fallacious and impracticable, and equally fallacious was the idea that the milk supply could be kept pure by official inspection. While the speaker regarded official milk inspection as a distinct advance in sanitation, he nevertheless held that all milk for infants should be pasteurized and all milk for adults should be boiled, unless its source was an officially certified dairy.

The Williamsburg Medical Society.

At a stated meeting, held February 13, 1907, Dr. Joseph Merzbach read a paper on the "Early Diagnosis of Carcinoma of the Stomach." He referred to four reasons which made cancer of the stomach occupy the most important position among the malignant diseases of the gastrointestinal organs. Cancer of the stomach comprised 41 per cent. of all cases of malignant disease. It destroyed life more rapidly than any other tumor, excepting cancer of the esophagus, on account of its own destructive effects and its deleterious influence on digestion. It readily produced metastasis. Its diagnosis was difficult and its surgical removal involved technical difficulties. The diagnosis depended on the history, subjective signs and objective findings. A sudden beginning of digestive difficulties in an individual advanced in life whose digestion had been previously good suggested the possibility of malignant growth and imposed care in subsequent examination. Suspicion was further justified if the appetite progressively decreased and was uninfluenced by proper treatment. Preservation of the normal appetite was observed only in instances in which the malignant process developed on the basis of a former ulcer. Sensations of fullness and pressure after eating had nothing characteristic, but eructations having the taste of food taken some time before and of a foul odor were signs of more weight. Pain was of little diagnostic importance unless it occurred spontaneously in a location where ulcers were not as a rule found, or if it was closely connected with or followed deglutition and was localized at the end of the sternum, suggesting cancer of the cardiac orifice. Vomiting of food long since ingested was an important symptom, taken in connection with others. Also important were small hemorrhages, but the characteristic coffee-ground material could not be expected for an early diagnosis. The speaker referred to the value of Falk's benzidin test, which could detect blood in the stomach washings even if present in a dilution of 1-200,000. Of the objective signs, anemia had a stronger claim for recognition among the early signs than cachexia. Enlargement

of the left supraclavicular glands was found in a small percentage of cases. Palpation revealed the seat of tenderness on pressure and the presence of a tumor, which, however, was not to be included among the early signs of this affliction. A tumor that could be palpated had already passed the stage when the radical operation was feasible. Pain on percussion at the ensiform cartilage indicated the possibility of some pathological condition at the cardiac orifice of the stomach. The test meal was the most important step in the objective examination. Since impaired motility and stagnation were comparatively early signs of carcinoma, except in the fundus, an empty stomach on the morning following a substantial meal argued against the existence of a malignant growth. The presence of pus, blood, or mucus collectively or individually, were very suggestive. This was particularly true of pus. In the examination of the test meal the points of great importance, when considered collectively, were absence of free HCl, decrease or disappearance of pepsin and rennet ferment, presence of lactic acid bacilli in angular configuration, the presence of amebas and spores. The speaker alluded to the method devised by Solomon for the examination of the stomach contents for albumin. Another recent method was Holzknecht's radiographic examination of the stomach.

Dr. John Osborn Palak read a paper on "The Treatment of Inevitable and Incomplete Abortion." He discussed three cases of abortion occurring before the beginning of the fourth month. The signs of inevitable abortion were rhythmical uterine pains, associated with sacralgia and pelvic tenesmus, chilliness or chills, nausea or occasional vomiting, and vaginal hemorrhage. By means of pelvic examination it was necessary to exclude ectopic pregnancy. Examination revealed increasing uterine contractions, the uterus was hard or alternately hard and soft, and the cervix was soft, open, or dilating, and the ovum protruding. During the first three months the ovum was usually expelled as a whole or broken up, with more or less hemorrhage. The management of inevitable abortion included the control of hemorrhage, the avoidance of sepsis, the complete evacuation of the uterus, and its proper retraction and involution. The speaker followed the plan of administering a quarter of a grain of morphine hypodermatically, and after thorough cleansing of the parts about the vagina, packing the cervix and vagina, with the patient in the Sims, or knee-chest position. This controlled the hemorrhage and completed the separation of the ovum. The tampon was left in position for at least twelve hours, after which it was to be removed and the uterine contents evacuated by the forceps, finger, or curette. Before the third month the curette was best; after the third month the aseptic finger was best. The uterus was never to be packed after it had been emptied, except for hemorrhage. A firm vaginal tampon was left in for twenty-four hours. An incomplete abortion was recognized by the bloody discharge, sepsis or failure of involution, as instanced by the soft, buggy uterus, the patulous cervix, and the detection of fragments of the ovum. The treatment was prompt aseptic emptying of the uterus, in order to avoid hemorrhage, sepsis, and adnexal inflammations. If the cervix admitted the finger, the patient was placed in the dorsal position, and after thorough disinfection of the parts the patient being anesthetized, the operator explored the uterus with the finger and any portion of retained placenta or other fetal remains was loosened and removed. The instrumental evacuation was safer in the hands of the skilled pelvic surgeon and in hospital practice. If the cervix did not admit the finger, it had to be dilated, and the uterus was then explored with the dull curette, and the contents washed out with sterile salt solution. If pieces of adherent placenta or membranes could not be removed with the finger, forceps, or curette, it was necessary to pack the uterus with strips of iodoform gauze, to administer ergot, and after twenty-four hours to remove the packing and the detached placenta. The after-treatment of abortions was important. It took longer to complete involution than after labor at term. Rest in bed for ten or twelve days was imperative. Douches were not to be given before the end of the first week, and then a douche of sterile water at 120° F. twice daily, preferably with a Davidson syringe. Following the douche the patient was to assume the knee-elbow position, to allow the uterus to rise out of the pelvis and to deplete the venous plexuses of the broad ligament. If present, a retrodeviation had to be corrected.

Chicago Surgical Society.

At a meeting held February 1, 1907, Dr. Edward H. Ochsner reported two cases of multiple exostosis, one of which was an exostosis the size of a filbert, springing from the anterior surface of the right lamina of the second cervical vertebra and making pressure on the cord. He also reported one case of severe acne varioliformis of the face, arms, and neck, which had greatly improved by the use of a vaccine made from the bacilli and cocci found in the pustules, according to the directions laid down by Wright. Dr. Thor. Rothstein spoke of the symptoms the man with exostosis showed before he was operated on. Dr. Frederick A. Besley read a paper entitled "Rupture of the Urinary Bladder," in which he reported twenty-three cases and detailed some experiments. In the discussion of this paper, Dr. D. N. Eisendrath said his experience was limited to two cases, one of which Dr. Besley had reported. There was one point in connection with that case, a child, three years of age, which, he believed, substantiated a theory advanced as to the mechanism of rupture of the urmary bladder. The mechanism of rupture of the urinary bladder in children had been but little referred to in the literature. The child of three was brought into the hospital one week after the injury with an infiltration extending from the median line back to about the level of the axilla, and from the pubes to the costal arch. A diagnosis of retroperitoneal rupture was made by exclusion, as he thought there could be no other possibility of any subcutaneous infection having arisen after a fall of this kind. He did a laparotomy and found an extraperitoneal tear, but one which did not go through the mucous coat, so that there was a slow onset of symptoms, which could be explained by the mechanism of the rupture; that is, undoubtedly the muscular coat must have torn first and left the mucous coat intact. He doubted whether this could be the case until he had recalled reporting a similar experience. Dr. Eisendrath made some further remarks on fractures of the pelvis complicated by rupture of the urinary bladder. Dr. L. L. McArthur said the essayist stated that between seventeen and eighteen pounds was required to rupture a bladder. That might lead to error if the statement was not made more clearly and specifically. He asked him if he meant pounds to the square inch or not? A column of water, six feet high, by gravity, makes a pressure of 2.4 pounds to the square inch approximately. It had been his peculiar fortune to see a bladder rupture while the irrigator with which the bladder was being distended was held up at arm's length on one of the stands that would hold the irrigator probably at a height of about six feet. It was during an operation that Dr. Danforth of Chicago was making, and Dr. McArthur assisting. The bladder, on being exposed by suprapubic incision, was found so low as not to be reached readily. Desiring to raise the fundus of the bladder, the viscus was distended with sterile water. While he was waiting for the fundus of the bladder to come up into the wound, there was a sudden spurt of water; he stuck his finger down and checked the stream until the irrigator could be lowered, when it was found that a rupture of the bladder had occurred just at the point desired to be opened, so that without any difficulty his finger went into the bladder through the perforation. He mentioned a Vienna surgeon who succeeded in rup-

turing the bladder with twelve ounces of urine. Dr. Bayard Holmes had operated upon four cases of rupture of the urinary bladder, and only one lived. Dr. John E. Owens recalled a case of rupture of the urinary bladder from a fracture of the pelvis. The rupture was extraperitoneal in an otherwise healthy man. Cases of rupture of the urinary bladder were, in his judgment, rare. He had seen many cases of fracture of the pelvis, but this was the only case of rupture of the bladder he had seen. Dr. Besley, in closing the discussion, said there was a difference of opinion as to which coat was torn first in a rupture of the urinary bladder, whether the mucous or serous coat. He found in watching tears occur experimentally, as he did in cadavers, it was not always the same coat which was torn first. The relation was changeable. Occasionally the mucous coat would give way first, then the muscular, then the serous coat. In some cases the order would be the serous coat, the muscular, and then the mucous coat. As to the point brought out by Dr. McArthur concerning the amount of pressure necessary to rupture the bladder, he would say that the measuring apparatus used was the ordinary steam gauge, which measured pounds to the square inch, and it was on this basis the estimations were made. Dr. Bayard Holmes reported three cases: Syphilitic tumor of the testicle, syphilis of the liver, and tumor of the colon. Dr. L. L. McArthur reported a case of adenocarcinoma of the uterus in which he did a hysterectomy, the patient making a good recovery. He also presented a specimen of osteosarcoma of the lower extremity of the femur. In the discussion Dr. Carl Wagner reported a case of osteosarcoma similar in many respects to the one narrated by Dr. McArthur. Amputation at the hip joint was done; the man recovered from the operation and was well to-day. Dr. A. J. Ochsner reported a case of sarcoma which involved the lower end of the femur.

At a recent clinical meeting, held at Cook County Hospital, Chicago, Dr. Jacob Frank presented two cases showing Dollinger's method of extirpating the glands of the neck. He also reported a case of an old ununited intracapuslar fracture of the neck of the femur, which he treated without nailing or wiring, with subsequent excision. Dr. Thomas A. Davis showed a case of gunshot wound of the spinal column. He exhibited a man upon whom he did a modified Kraske operation, resecting the rectum after doing a colostomy. He showed a woman, seven months pregnant, who received a gunshot wound of the thorax. She aborted on the fifth day, but was now well. Dr. B. Brindley Eads exhibited two cases, one of rupture of the spleen upon which he had operated successfully, and one of exstrophy of the bladder in a child, five years of age. Dr. William E. Schroeder showed a case of fracture of the second and third lumbar vertebræ. He exhibited a patient who sustained a fracture of the patella twenty-three years ago, and who now had enormous exostoses developing from the periphery of the cartilaginous portion of the femur. The joint was full of fluid and had to be aspirated. Microscopic examination was negative. He showed a patient upon whom he operated for a sarcoma of the back about two years ago. Two months ago the tumor returned, and had now reached an enormous size. The tumor was of the small round-cell variety. Dr. A. E. Halstead exhibited a case of hypernephroma in which the initial symptom was a pathological fracture of the left femur. He showed a patient with a large fascial sarcoma of the left thigh; exhibited two cases of tabetic joint disease, and a case of arthritis deformans of the polyarticular recurrent type. He showed a case of Hodgkin's disease, and spoke of the differential diagnosis between that disease, lymphosarcoma, and tuberculous adenitis. Dr. C. E. Humiston exhibited a boy, nine years old, who fell, striking his knee, but not producing any abrasion of the skin. Later a pyemic abscess developed on the knee, which was opened, and the joint was drained by the Fenger method. Dr. D. N. Eisendrath showed a patient who had three epigastric hernias and one femoral hernia. He reported and showed cases of retrocecal appendicitis, intussusception, sarcoma of the humerus following an injury, and ununited fracture of the humerus, as well as cases of ascites and venous angioma. Dr. M. L. Harris exhibited a man who a year ago sustained a comminuted depressed fracture of the skull. He likewise showed a case of properitoneal lipoma.

Medical Items.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 15, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Florida, Anthony	Feb. 18–24	1	..
Jacksonville	Feb. 24–March 2	1	..
Tampa	March 2–9	1	..
Georgia, Augusta	March 5–12	7	..
Illinois, Belleville	Feb. 22–March 1	1	..
Chicago	March 2–9	1	..
Galesburg	Feb. 23–March 9	9	..
Springfield	Feb. 21–28	1	..
Indiana, Elkhart	March 2–9	1	..
La Fayette	Feb. 25–March 11	3	..
Michigan City	Feb. 1–28	1	..
South Bend	Feb. 23–March 9	2	..
Iowa, Burlington	Feb. 1–28	1	..
Kansas, Kansas City	March 2–9	1	Imported
Louisiana, New Orleans	Feb. 23–March 9	40 cases, & 1 d'th; 11 cases imp't'd	
Massachusetts, Chelsea	March 2–9	1	..
Michigan, Kalamazoo	Feb. 23–March 9	3	..
Mississippi, Natchez	March 2–9	2	..
Missouri, Jefferson City	Jan. 20–March 4	46	..
St. Joseph	Feb. 23–March 2	20	..
St. Louis	Feb. 23–March 9	3	..
New York, New York	Feb. 23–March 2	4	..
North Carolina, Charlotte	Feb. 23–March 2	1	..
Ohio, Columbus	Feb. 1–28	1	..
South Dakota, Sioux Falls	Feb. 23–March 9	5	..
Texas, Galveston	March 1–8	1	..
Hunt County	Jan. 1–March 8	25	..
Washington, Spokane	Feb. 23–March 2	18	..
Wisconsin, La Crosse	Feb. 23–March 2	1	..
Milwaukee	Feb. 23–March 2	8	..

SMALLPOX—INSULAR.

Philippine Islands, Manila	Jan. 12–19	4	Mild

SMALLPOX—FOREIGN.

Algeria, Algiers	Feb. 16–23	..	2
Belgium, Brussels	Feb. 9–16	..	2
Ecuador, Guayaquil	Feb. 9–16	..	3
Egypt, Cairo	Jan. 14–28	3	1
France, Paris	Feb. 9–15	13	..
Great Britain, Bristol	Feb. 9–16–23	1	1
Cardiff	Feb. 16–23	2	..
Dundee	Feb. 16–23	1	..
Glasgow	Feb. 22–March 1	1	..
Manchester	Feb. 16–23	1	..
India, Bombay	Jan. 29–Feb. 12	..	3
Calcutta	Jan. 19–26	..	25
Madras	Feb. 2–9	..	1
Mexico, Aguas Calientes	Feb. 16–March 2	..	8
Monteroy	Feb. 17–24	..	2
Nogales	Feb. 23–March 2	1	..
Veracruz	Feb. 9–23	3	2
Russia, Moscow	Feb. 2–9	4	2
Odessa	Feb. 9–16	17	5
St. Petersburg	Feb. 2–9	2	..
Spain, Madrid	Jan. 1–31	..	1

YELLOW FEVER.

Brazil, Rio de Janeiro	Jan. 27–Feb. 3	..	1
Ecuador, Guayaquil	Feb. 9–16	..	10

CHOLERA—INSULAR.

Philippine Islands, Provinces— Capiz and Negros Occidental	Jan. 12–19		Present

CHOLERA—FOREIGN.

India, Bombay	Jan. 29–Feb. 5	..	1
Calcutta	Jan. 19–26	..	361
Madras	Jan. 26–Feb. 8	..	4
Rangoon	Jan. 19–Feb 2	..	17

PLAGUE.

Australia, Sydney	Jan 5–12	1	..
Brazil, Rio de Janeiro	Jan. 20–Feb. 3	34	14
Chile, Antofagasta	Feb. 2–9	12	4
China, Hongkong	Jan. 19–26	1	1
India, Bombay	Jan. 29–Feb. 12	..	166
Calcutta	Jan. 19–26	..	24
Rangoon	Jan. 19–Feb. 2	..	30
Peru, Catacaos	Jan. 27	4	3
Chiclayo	Jan. 27	14	11
Lima	Jan. 27	6	3
Malabrigo	Jan 27	20	..
Paessmayo and San Pedro	Jan. 27	12	4
Trujillo	Jan. 27	11	9
Viru	Jan. 27	..	9

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Original Articles.

A NEW METHOD OF OPERATION FOR EPISPADIAS.*

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WHILE the technical difficulties of changing an epispadiac furrow into a urethral canal are moderate in the balanic type, the restoration in complete epispadias has always formed one of the most delicate problems of plastic surgery. The usual methods, among which Thiersch's is certainly the most brilliant in its conception, all show one great drawback, namely, the persistence of the incontinence of urine.

FIG. 1

This fact is not astonishing, if it is considered that practically the aim of these well known procedures is to cover the furrow with a skin flap. The new arrangement looks like a canal then, but it does not exercise a function of its own, nor does the operation provide for a lining consisting of mucous membrane.

In a recent case I have succeeded in avoiding these drawbacks by an operation performed in the following manner:

The patient, a boy of four years, suffered from incontinence, so that his clothes were constantly soiled with urine. On September 28, when I had the first chance to examine him, he showed an imperforate, cherry-like glans, which, by being slightly curved upwards, opposed itself against a projecting abdominal fold above. When the glans was pulled forward or downward, a short penis appeared, the upper portion of which showed total absence of a urethral canal. Instead, there was a broad furrow,

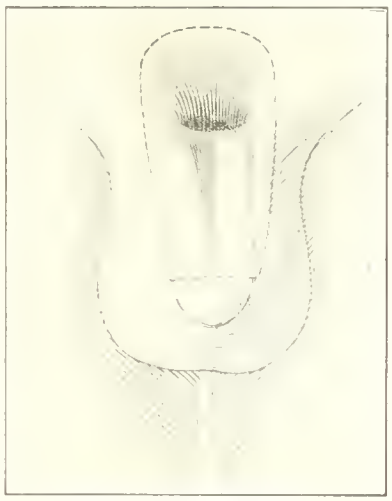

FIG. 2

lined with a thin mucous membrane, which continued into a large funnel-like orifice that permitted of the introduction of a finger into the bladder (Fig. 1). From this orifice slightly decomposed urine dribbled in short intervals. When the penis

FIG. 3

was left to itself the glans covered this opening like the cork on a bottle.

The funnel-like appearance of the orifice suggested to me to dissect the surrounding walls, including the whole urethral gutter, just the same as a hernial sac including the cord is liberated and mobilized in

*Case presented to the Surgical Section of the New York Academy of Medicine, November 2, 1906.

the radical operation for inguinal hernia. This plan was carried out by making a continuous incision around the funnel as well as the outer margins of the urethral gutter, the aim being then to shell out a coherent canal, which was meant to be the new urethra.

Fig. 4

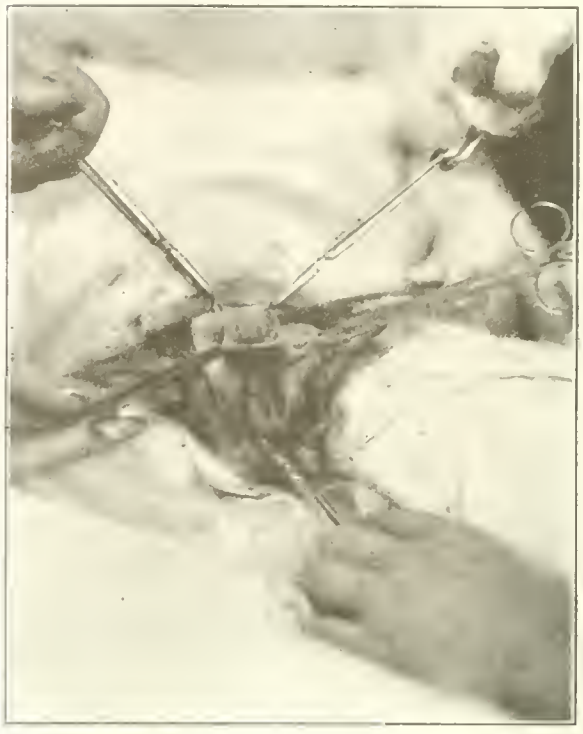

Fig.

First Step.—To secure sufficient material at the upper portion of this improvised tube, the skin incision was carried far up over the projecting abdominal fold (Fig. 2). The cicatrix-like outlines of the fold can be recognized in Fig. 3. In Fig. 4 the outlines of the roof of the new canal are indicated, the forceps on each side of the funnel lifting the slightly dissected wound-margins. The interior of the funnel being lined with a thin mucous membrane makes it especially useful for the purpose. To increase the size of the funnel, however, a small portion of skin was left at its upper portion like a brim. (Fig. 5.)

Now, further dissection was done cautiously by introducing the index finger into the orifice, pulling the wall over the finger as if trying to put on a glove, and then gradually freeing it from the surrounding tissues. The finger served as a guide during dissection, and at the same time drawing the funnel-wall over it caused enough pressure to prevent hemorrhage. Although the wall was naturally thin, it appeared to be firm, and, by holding the cutting edge of the scalpel more toward the outer tissues than to the wall, I avoided injuring any part of the funnel-wall. As soon as the upper portion of the funnel showed two inches in length, further dissection was stopped.

Second Step.—Now a transverse incision was made behind the glans which combined the two longitudinal incisions made alongside the urethral gutter at the beginning of the operation. Thus a flap containing the urethral gutter was created, which remained in close connection with the funnel, and practically formed an integral part of it after being freed as far as the interior of the original orifice. There was, in fact, now a new movable hollow

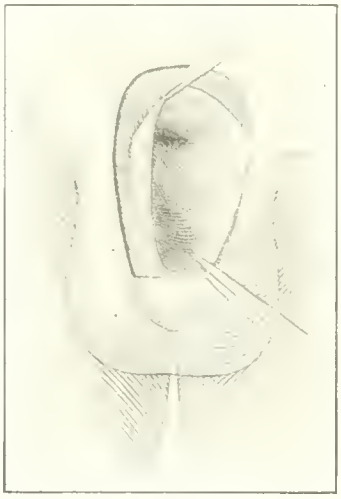

Fig. 5.

Fig. 7.

organ appearing like a hernial sac, at the bottom of which the neck of the bladder could be made out. (Fig. 6.)

To transform this wide tube into a urethral canal I folded its walls into several portions, pleating it like a shirt-frill.

Third Step.—Now, by perforating the glans with a bistouri I secured an opening which was wide enough to permit of pulling the upper portion of the sac through it, so that its ruffled margins could now be fastened to the tip of the glans after the principle of the purse-string suture (Fig. 7). They were supported by four silk sutures, one being applied anteriorly, another posteriorly, and another on each side.

In order to elongate the penis somewhat, I inserted a small triangular skin-flap between abdomen and penis, taking the material from the redundant foreskin.

The loss of blood during the operation was moderate. During the dissection of the funnel there was no hemorrhage to speak of. Only the mobilization of the urethral groove was followed by moderate

Fig. 8.

oozing, which was checked by hot irrigation and temporary pressure.

Recovery was uninterrupted. The patient complained of very little pain. During the first week he had no control of his urine. On the eighth day he could retain it for an hour, and in the third week for two to three hours. A few days ago he retained it for fully four hours. Now he can always pass some water on command. The fact that there is a stream of six inches in length after such a short period lets me hope that in the future more power will be developed.

It is true that the penis is still short. But it appears longer than it was, and it is brought into a normal position and direction (Fig. 8) instead of leaning against the abdominal wall as before the operation.

37 East Thirty-first Street.

The application of dry hot air to the thorax has been found very useful in cases of emphysema, chronic bronchitis, and bronchial asthma. The good effects are due to actively induced hyperemia of the chest-wall and coincident depletion of the lungs. The method is contraindicated in cases of advanced tuberculosis and cardiac insufficiency. —*International Journal of Therapy.*

PNEUMONIA, WITH ESPECIAL REFERENCE TO THE USE OF FRESH AIR AND A SALINE SOLUTION, AND THE ABUSE OF ALCOHOL, OPIUM, AND OTHER DRUGS IN ITS TREATMENT.

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Since pneumonia continues to be one of the chief causes of mortality, and diversity of opinion still exists among physicians in regard to its treatment, repeated discussion of the subject should require no further justification. Those giving serious thought to the matter must perceive that, to find the source of an infection and the means for its prevention, is infinitely of more value to the human race than any system of medication. Limited numbers of individuals are restored to health by therapeutic measures; entire communities are saved from disease by wise sanitation. Pneumonia to a considerable extent is preventable, but so much depends upon personal initiative for its prevention that immediate prospects in this direction are not encouraging. Hence, we must persist in our endeavors to discover the best means of caring for whoever is visited by this Nemesis of indoor, sedentary, modern existence. It is a self-limited disease of short but variable duration—that is to say, a specific infection which, from the liability of its bacteria to perish, soon becomes exhausted—and ignorance of this fact leads to many therapeutic vagaries; disregard of it to endless differences about what are the effective remedies. The type of the disease, and likewise the outcome, largely depend upon the extent of the infection and the history of the patient. A majority of those with pneumonia in early life, and, indeed, at any time before the advent of degenerative changes, fortunately recover, whatever the method of treatment.

The best course to pursue with this affection, in my opinion, is to secure for the patient repose of mind and body, a simple regimen, and plenty of sunlight and outdoor air. We should maintain the strength, alleviate symptoms, and avert complications as far as possible, and, withal, promote the intrinsic capacity of the fluids and cellular elements of the body to overcome the virulence of the infection. Meanwhile, however, let us attempt nothing above all things that in any manner can injure this natural immunity. In a laudable desire to expedite recovery we are apt to lose sight of the evil results of over-medication. The recognition of symptoms and of complications, and the well-calculated giving or withholding of remedies will tax to their utmost the perspicacity and judgment of the attending physician. While many persons with pneumonia may recover without the use of drugs, a certain number will die, owing to various causes beyond our control, despite the most skillful management; but between these extremes there are numerous examples wherein the life of the patient depends upon the skill and resources of the medical attendant.

First in importance, according to my view, is an unlimited supply of fresh air to everyone, with few exceptions, suffering from this affection. The exceptions comprise a certain proportion of those with a terminal or a secondary pneumonia, and possibly some instances of idiosyncrasy, at least during inclement weather, where, perchance, there is not enough vitality to endure what, as a rule, is both bearable and beneficial. Reasoning from the good

effects of the outdoor care of pulmonary, as well as other kinds of tuberculosis, I came to the conclusion that for pneumonia a similar course had a like application. This has been my teaching for the past three or more years at the New York Post-Graduate Medical School, and likewise my practice whenever and wherever practicable. My conclusion, moreover, also was based upon the classic experiment of Alonzo Clark with typhus fever, which suggested its value in other infections. At one time, it is related, he had 250 cases of this disease in the wards of Bellevue Hospital. There were as many more and with a great mortality under the care of his colleagues. Though it was winter, the windows were removed, stoves were placed before the openings to warm the incoming air, and, except for some stimulants, no other medicine was given. Not one of Dr. Clark's 250 patients died, and in two weeks they were convalescent. Another such experience is recounted by Austin Flint,[1] which occurred as long ago as 1853 in the practice of Dr. John H. Griscom. Eighty-two patients with typhus fever were taken ashore from an emigrant ship at Perth Amboy, N. J. As there were no hospitals or other places of refuge, two shanties were built, boarded on three sides, over which old sails were stretched. Of these patients thus sheltered there were twelve insensible at the time of removal. The medical treatment consisted mainly of vegetable acids and bitters, and a liberal supply of cold water and of fresh air. All of the 82 recovered. In these open windows and half-closed shanties, allowing fresh air without stint, there was a lesson which it has taken us a long time to learn. We slowly have come to understand, however, that the outdoor air is a vital element in the treatment of tuberculosis, and it is my belief that, with little further delay regarding pneumonia, we may reach a like understanding. Meantime, an inborn prejudice in many of the laity, and in some of our profession, against this procedure will have to be overcome. Nearly every such innovation, however useful, has to fight its way into general recognition. No person in health takes cold while sleeping at night with wide open windows, whatever the temperature, if the head and the rest of the body are well protected. And, what is more, those who habitually sleep under these conditions store up enough energy during the night to enable them better to withstand the infections of the day to which they are commonly exposed in the devitalized air of the usually ill-ventilated, overheated places in which they congregate. The widespread fear of the outside night air probably was founded on a former ignorance of the manner in which it is now known malaria is acquired. It is the indoor air, day or night, too often shorn by the steam radiator of its life-sustaining properties, if not polluted by animal exhalations, that helps to undermine the constitution. We daily subject the face, and in breathing the lungs, to outdoor air at all seasons, and, if otherwise well protected, we do so ordinarily with impunity. Indeed, the entire surface can be made to bear, what our faces endure now, wintry weather practically unclothed. For instance, the savage Fuegians manage to survive, according to Darwin, in a cold, wretched climate almost entirely naked, and with little shelter of any description. At all events, during an illness like pneumonia, there is no danger of catching cold from simply breathing cold, fresh air. As a matter of fact, we do not catch colds; we catch infections; and there is much less likelihood of being infected out of doors than indoors. In the Arctic regions it is said, by the way, there are none of these diseases of the respiratory organs.

Let us place a patient, then, with this affection in a large, sunny room with wide open windows, if not actually upon a roof or a veranda, and thus continually supply the extra need of air caused by the toxemia and the consolidation. If the weather is cold so much the better, for cold air, especially when dry, excites respiration and thereby promotes oxidation. Moreover, it is more concentrated than warm air, and therefore contains more oxygen to a given inhalation. In some instances there may be an open grate fire, or any customary form of heat, to temper the air when there is small power of reaction. The patient must be kept comfortable by extra bed- and other clothing. Hot water bottles if necessary can be placed in the bed, and screens can be utilized for shelter from direct drafts. Two layers of coarse wire netting, between which are thin sheets of absorbent cotton, in the open windows, such as are in use in the Annex for the treatment of tuberculosis of the New York Post-Graduate Hospital, will filter the dust-laden air of a large city without hindering the desired ventilation. For toilet or other purposes that require the removal of covering, a person treated in this manner can be returned to a warm room, or the windows can be closed and the heat turned on temporarily. These conditions, in my opinion, afford the best means for ultimate convalescence. Pure cold air, especially when free from humidity, is soothing to a feverish and a delirious patient, and conducive to healthful rest and sleep; it promotes the appetite and improves digestion; it increases the strength of the heart and the tone of the arteries; it lessens the intensity of the fever and the frequency of the breathing; it adds to the bactericidal properties of the fluids of the body and of the cellular elements, and it stimulates elimination. The fresh air treatment of pneumonia has been tried with marked benefit in a hospital for children in England by a physician whose name unfortunately has escaped me, but who was, so far as I know, one of the first persons to publish his experiences. Nor am I alone in our country in my estimate of the value of this, with respect to the disease in question, somewhat recent departure. Northrup[2] says: "Fresh air stimulates the heart, reddens the blood, quiets restlessness, favors sleep, improves secretion and digestion; in short, meets most of the indications for treatment of pneumonia in infants." And what he so truly declares in the case of infants equally applies to adults. Likewise, Anders,[3] in his interesting article on the fresh air treatment of acute respiratory diseases, speaking of pneumonia, remarks that "Naturally, then, pure air is primarily an effective prophylactic agent against the immense majority of both acute and chronic respiratory affections." And in another paragraph he observes: "A personal acquaintance with the fresh air method, although somewhat limited, justifies the statement and belief that pneumonia patients are in no danger of contracting a cold from the perforation of the sick room with fresh air, and that the mere breathing of fresh air or the flowing of cool air over the face while the patient is confined to bed is practically unattended with risk in this respect." In concluding a valuable contribution upon this subject, Anders remarks, among other things, that the beneficial effects of the constant breathing of cool or cold fresh air are a lessened severity of the cough, and of the toxemia, and, withal, a better general condition than in cases treated by the more usual methods. In an article recently published by Thompson,[4] which every physician should read and consider, he says in regard to this subject: "The most striking benefit of the uncooked air treatment is shown in cases of pneumonia. Delirious alcoholic patients, with

profound cyanosis, when taken out of the general ward and placed at windows open day and night, became much less nervous and restless, and distinctly less cyanosed. I formerly gave such patients oxygen, sedatives, whiskey, and other stimulants. In the open air they, of course, receive no oxygen and require far less of stimulants and sedatives. During 1906 we treated in all, at the Presbyterian Hospital, 128 cases of acute lobar pneumonia. Of these patients, 47, or 36 7/10 per cent., received absolutely no drugs whatever—no stimulants, no narcotics, no inhalations, no specifics, nothing except the occasional laxative, which any one in bed with fever may require, and they all recovered, in the usual way, when the time came. Some defervesced by crisis, some by lysis, some in five days, some in twelve days, or other intervals. A large proportion of these patients received the uncooked air treatment and enjoyed it."

With regard to the diet, there is more danger of overfeeding than of any lack of nourishment. Considering that the gastrointestinal functions are deranged, it is only hurtful to add to the system extra burdens of digestion and assimilation. Small quantities of pure milk, either plain, diluted with vichy, or predigested, every two hours, possibly fortified now and then by the yolk of an egg, alternating with beef tea and various broths, such as barley broth in particular, is a regimen that has proved satisfactory. When a patient happens to be sleeping naturally, by the by, rather than disturb him, his food should be for the time being withheld. Water must not only be freely allowed, but also frequently urged upon the patient, for it should be kept in mind that milk is food, though fluid, and is adequate neither to quench thirst nor effectually to flush the system, an important proceeding when there is an additional poison in the body to be expelled.

A predisposing cause of pneumonia, it seems to me, is the intestinal autoinfection which prevails so extensively among the many overfed, poorly renovated, subjects of suboxidation. When the added toxemia of the diplococci has to be cared for by the natural filter of the body, the liver, as explained by Hutchinson,[5] this organ is in danger of giving out. Failure of this hepatic function in order of time precedes heart failure, and is almost of as serious moment. This increased load upon the liver should be relieved by diluents, diuretics, laxatives, and, may be, diaphoretics, and not by attempting a direct action upon that organ by the so-called cholagogues.

Without much doubt the fluids of the body, such as the serum and plasma of the blood, aside from the wandering cells, contain a substance capable of decreasing, if not destroying, the potency of pathogenic bacteria. Whether or not this substance, which has been christened "opsonin" by Wright[6] and Douglas (a word derived from *opsono*, I prepare the food for), and is considered by them an independent entity, is merely the product of the various phagocytes as held by Metchnikoff,[7] is somewhat immaterial. Upon the theory that this ingredient of the animal fluids aids phagocytosis, by a chemical union with the invading bacteria which inhibits their activity, Wright is making inoculations with special toxins manufactured from disease-producing germs designed to increase the immunity of human serum against infections. The method of arriving at the so-termed opsonic index of an individual, in order to regulate the strength of a dose, is rather complicated, and scarcely feasible beyond the reach of a well-equipped laboratory. However promising and interesting this, what is called opsonic therapy, may be, concerning pneumonia it requires further development.

Meantime, resistance to pathogenic microbes may be enhanced by injections, among other materials, of a physiological saline solution. Animals, such as guinea-pigs, thus treated, as shown by various observers, will resist doses of virus that always kill those used as a control. An infection like the one under consideration consumes the alkaline salts of the blood, and augments its density to a degree that impairs the functional activity of the living cells, and, meanwhile, the supply of these alkaline salts, if not the much-needed fluid, frequently is cut off by customary dietary restrictions. Hence the suggestion, first made by Henry,[8] of injecting a physiological saline solution in a patient with pneumonia to restore cellular, and also renal activity, has proved invaluable. In fact, the introducing of this solution under the skin, a procedure known as hypodermoclysis, has rescued a number of patients in my practice, as well as in that of many others, from impending dissolution. Care should be observed, it must be remembered, not to inject more than one dram of the solution to each pound of the body weight in each quarter of an hour, lest the tissues become injured by inundation. Such a procedure without doubt would be useful from the beginning in pneumonia. The administration by the mouth, however, of alkaline salts consisting of 10 grains of sodium chloride, 5 grains of potassium bicarbonate, and 1 dram of lemon juice, to 8 ounces of pure water every two hours, as recommended by Todd[9] in his instructive article on this subject, is constituted to accomplish, and with less trouble to all concerned, everything, except in certain emergencies, claimed for hypodermoclysis. It stimulates the function of the cellular elements, diminishes the density of the blood as shown by the decrease in the specific gravity of the urine, lessens the fever, and promotes elimination.

If pneumonia is attended by expectoration, which is not always the case, without fail the sputa should be destroyed, and, further, since the germs of the disease are voided by way of the bladder and the intestines, the urine and feces also should be destroyed.

An urgent symptom at the beginning of this disease is the pleuritic pain, though fortunately it is not always in evidence, and the remedy most frequently employed for its relief is a hypodermic injection of morphine. In truth, many physicians consider anywhere from an eighth to a half grain of this drug for that purpose useful and harmless, if not indispensable. To be sure, it is not likely to do so much harm at this stage, while the patient still has considerable power of resistance, as when the illness is more advanced, but any preparation of opium is always more or less baneful in its effects, if not dangerous, especially in old persons, young children, and those suffering from secondary pneumonia. Whence, inasmuch as this affection yet remains one of the chief causes of death in this part of the world, it would appear worth while to consider whether certain conventional ways of treatment may not contribute to this excessive mortality. It has been established by experiment that the ingestion of morbific bacteria by the living cells of the body is one, if not the only, means of deliverance from an infection. Therefore, this cellular function should be conserved if not promoted; certainly not injured or destroyed. Now, Metchnikoff[7] relates that Cantacuzene caused the death of some guinea-pigs, highly immunized with the cholera vibrio, by previously injecting them with small

quantities of the tincture of opium, which, as he was able to show, paralyzed the activity of the white blood corpuscles. Metchnikoff remarks, apropos of this experiment, that the phagocytes, although among the most resistant elements of the body, are not entirely proof against poisons, and that opiates and the like, which weaken phagocytic action, should carefully be avoided. Moreover, opium with its congeners, except in the minutest dose, depresses and finally paralyzes the breathing centers, and also checks every secretion save that of the integument. We know that the existence of a patient with pneumonia in great measure depends upon maintaining as far as possible respiration and elimination. Breathing 40 instead of 20 times a minute, the sufferer is trying by frequency to make up what is lacking in fullness of respiration. The kidneys, which are the chief means of excreting poisons from the system, to say the least are sluggish in pneumonia. Consequently, a drug that adds to the inactivity of these organs, and that tends to paralyze the living cells and the centers of respiration, in a malady such as this, must be injurious, if not actually hazardous.

If the pleuritic pain cannot be alleviated by such simple expedients as an ice bag, or a hot poultice, or else by strapping the affected side, the application of leeches, or, still better, of dry cups, will almost invariably prove efficacious. But dry cupping must be done thoroughly. Although it is desirable to relieve these pains, the means of relief never should be at the expense of a patient's power of resistance. Rather than imperil ultimate recovery, it would be better, if otherwise without remedy, to endure for a while some discomfort, or even suffering. Thus, only after all other resources have failed, and the distress is unbearable, should opium be used, even at this early stage of the disease. The one possible exception to this rule is when the patient is a victim of the opium habit, for then it may have to be allowed, though a forlorn hope, as an essential factor of the treatment. Preparations of opium likewise sometimes are given to arrest or to lessen the cough, which if annoying is not especially harmful. In fact, the average cough of pneumonia with expectoration, for obvious reasons, rather should be encouraged than suppressed. Further, these drugs are now and then prescribed in this disease to quiet restlessness, and nearly always, in my belief, to the patient's detriment, however comforting to his family and friends, for restlessness at this time is vastly preferable to a narcotic tranquility. A simple remedy such as sodium bromide, and even moderate doses of alcohol, are better than opiates for this condition. Cough and loss of rest and sleep, however, as previously stated, are not prominent features of the fresh-air treatment. That I am supported by good authority in my opinion of such remedies in this affection is shown by a small part of what Sir Wm. T. Gairdner,[10] formerly Professor of Medicine in the University of Glasgow, has to say in this connection, namely: "I regard opium as a drug of extreme danger in pneumonia. I am aware that men of great eminence have taught otherwise. But in so representing the case I am not advocating any theory, but rather am dealing with facts which I know to be true, and which, if true, are such as ought to be in the mind of every practitioner. I have repeatedly seen what can only be regarded as poisonous effects from very moderate doses of opium in certain stages of pneumonia; and (especially towards the crisis) have learned to dread it more than almost any other drug." Morgan[11] states that he has a great repugnance to the use of opium in pneumonia, and he is inclined to believe that many of his fatal cases owed their fatality to its injudicious employment. Finally, with experimental proof that even small doses of opium paralyze the activity of the white blood corpuscles, and clinical evidence that it is harmful in other specified ways, I feel warranted in saying that physicians should think seriously before resorting in this disease to its administration.

The rise of temperature, such as occurs in pneumonia, is not only an index and measure of the infection, but one of the ways in which nature checks its progress. In the minds of some physicians fever should be lowered at all hazards; whereas, short of well defined hyperpyrexia, which is exceptional, it should be let alone, since it is not harmful, but advantageous. High fever may tell of an extensive infection, also it reveals an efficient power of reaction. Moderate fever indicates either a slight infection, or else a deficient power of reaction, as often seen in secondary and terminal pneumonias. Lenhartz[12] teaches that pathogenic bacteria, such as the pneumococci, thrive best at the normal human bodily heat, and that they decrease in vigor with the onset of fever, and finally die, or at least lose their toxic properties. Bouchard[13] observes that certain microbes are known to perish at temperatures which human beings readily withstand. For example, the bacteria of malignant pustule are unable to exist above 104° F., and thus cannot infect birds whose normal heat exceeds this limit. In an interesting experiment, by the way, Pasteur,[13] having reduced the temperature of a bird artificially, was able to destroy this immunity. Increase of heat above 98.6° F. creates a physical medium that is inimical, if not destructive, to infectious organisms. Experiments show that what are high temperatures in man do not produce in animals extensive fatty degeneration, for Naunyan and Rosenthal (Bouchard[13]) were able to keep rabbits alive for weeks with temperatures ranging between 105.8° F. and 100.4° F. without serious consequences. Therefore, if the action of heat is the same on the human heart as upon that of a lower animal under like conditions, there cannot be much danger in the short-lived fever itself in pneumonia. Krehl[14] remarks that very high temperatures may be harmful in the same manner that a heat stroke is, but that in fevers they are uncommon. It is possible, he also says, that a rise of temperature may diminish the growth or the virulence of the microbes, and, so long as the elevation remains within bounds it is relatively harmless. The rapid pulse and respiration, the loss of appetite, and the possible degeneration of the organs, in so far as they are directly caused by the temperature, are not in themselves dangerous. Finally, an experiment of Riess, quoted by Bouchard,[13] shows that the lowering of the temperature to the normal, in animals with fever from infection, neither stays the disease nor prevents a fatal termination. The cold sponge bath generally is helpful in case of restlessness, and, at the same time, somewhat of a stimulant, but, as a rule, it is not so effective in pneumonia as in typhoid fever, or so often necessary, especially during the cold fresh-air treatment. At all events, none of the antipyretic drugs, synthetic or otherwise, should be given in this affection, for they are superfluous, if not deleterious. Quinine in particular should not be used in large doses, for its action on the white blood corpuscles, as related by Metchnikoff,[7] has been found, like opium, distinctly detrimental.

The condition of the heart is one of the vital questions in pneumonia. Cloudy swelling, due in great

part to the toxemia, is prone to disable this organ. Dilatation, too, may occur, especially of the right side, with stasis in the veins and edema of the lungs. If considerable these are serious complications. As stated by Todd,[9] the blood, gradually having been reduced in fluidity and deprived of alkaline salts, tends to precipitate its fibrin, owing to an increase of specific gravity. This and the accumulation, meantime, of toxins in the circulation finally bring on cardiac paralysis.

Pulmonary edema calls for energetic dry cupping as well as for thorough stimulation. Ammonia, strychnine, digitalis, and caffeine are valuable for this purpose, but, at least in large doses, they should be reserved for such emergencies, and not ordered as a matter of routine. Strychnine and digitalis are most effective hypodermically.

The integrity of the heart is best conserved in the end by not goading it from the beginning with stimulants simply because the patient has pneumonia. The stronger preparations of alcohol, such as brandy and whiskey, are seldom needed in this affection, even as sedatives and depressants, which they are in fact instead of stimulants. It is now pretty well established that alcohol produces little, if any, real stimulation. A popular belief prevails that alcohol increases muscular and nervous energy, whereas it simply benumbs the nerves and impairs muscular coordination. Patients with a previous history of chronic alcoholism are known to be deficient in recuperative power, and almost invariably to succumb to pneumonia. But it is not so well known that alcohol directly inhibits and finally destroys the activity of the phagocytes. Deleard[21] of the Pasteur Institute of Lille (Metchnikoff[7]) proved by a series of experiments that absorption of alcohol beyond question greatly interferes with the production of immunity against hydrophobia. Also, he found that rabbits which were given alcohol while being immunized against anthrax died of the disease, and that control animals, which were not given alcohol, without difficulty could be immunized. Moreover, these laboratory tests were confirmed by Abbot,[7] who showed that animals, if brought under the influence of alcohol, became more subject to the harmful effects of several microbes, such as the bacterium coli, the streptococci, and the staphylococci. Subsequently, Laitinen[7] performed numerous experiments of a like nature and with similar results. For example, sundry rabbits were given alcohol for several days in succession, and then each was injected through the skin with a small dose of the first vaccine of anthrax. Six of these so treated died after a more or less extended illness, and they all were found to have anthrax bacilli in their blood and organs; whereas of four control rabbits which received this same vaccine and no alcohol, but one died; the other three remained in perfect health. It is thought by some observers, however, that a single dose of alcohol by the mouth or hypodermically will increase the quantity of the antibodies and temporarily the bacteriolytic power of the blood. Still, in spite of this, alcohol ultimately has a harmful action on the phagocytes, which are the chief means of defence against infective microbes, as well as upon the nerves and the rest of the tissues, and should not be used to any great extent in the treatment of infectious diseases, and especially in pneumonia. Possibly the one exception to this rule may be a case of chronic alcoholism. Burney Yeo[15] says that the routine giving of alcohol in pneumonia, especially in the early stages, with the idea of preventing cardiac failure later, in his opinion, is a serious error. "Alcohol," he also says, "produces vasomotor paresis and causes dilatation of the vessels, and it must therefore aggravate or induce tendencies to vascular engorgement." Hay's[16] account of the influence of alcohol on the circulation, quoted from a report by Professor Sherrington, is as follows: "Its primary action is on the mucous membrane of the mouth, esophagus, and stomach, and in virtue of this action it undoubtedly acts reflexly as a cardiac stimulant. This stimulation is neither prolonged nor powerful. After the absorption alcohol exerts a specific action dilating the peripheral bloodvessels and lowering the blood pressure, thus tending to empty the arteries and to fill the veins. On the heart itself, directly, alcohol seems to have no effect at all; in large doses it enfeebles it." Also Hay says, "Alcohol has a toxic effect upon the protoplasm of the muscles of the heart in addition to that of the pyrexia and toxemia." In conclusion, he remarks, "The total action of alcohol on the heart being depressant it is futile to give it in cases of commencing cardiac failure with the idea that you are combating that failure by giving a specific cardiac stimulant."

Carbonate of creosote in pneumonia has many advocates, and among them Smith,[17] who writes of the benefits of the drug with enthusiasm. This remedy in doses varying from 10 to 40 minims every two hours, is prescribed with the idea that, if begun soon enough, it will render the exudation in the air cells a poor culture medium for diplococci. Claim is made that it will lessen the severity of the attack, cause the disease to end by lysis instead of by crisis, and decrease the mortality. Meantime, the smoky urine which it produces is of little matter, and there are no symptoms which are harmful or disagreeable. It is held, too, that this remedy prevents gastrointestinal fermentation; always a troublesome complication. The inhalation of vaporized creosote is recommended also by Smith,[18] as well as by Robinson,[19] on the theory that it will have a direct local effect inimical to the parasite. It seems to me, notwithstanding, that unlimited fresh, and, if possible, cold air is what is most needed in the lungs during the entire course of the infection. The short, sharp struggle which takes place between the invading germs and the phagocytes at the innermost threshold of the body leaves in its wake a more or less extensive exudation, but the most serious result of this encounter is the subsequent toxemia caused by the entrance of the prevailing diplococci into the systemic circulation. Here the contest continues and the chief reliance of the patient is upon the living cells, the serum and plasma of the blood, and the emunctories. All these are best stimulated and kept in activity by the constant breathing of cold, fresh air, and the taking of the alkaline salt solution.

Oxygen by inhalation may be of benefit if well diluted and given early in the attack, but, as a last resort, though it lessens the cyanosis and distress of the patient, it fails to keep him alive. However, this gas is seldom required during the open-air treatment. Chloroform is used likewise by a number of physicians, and favorable results are reported, but I am not one of its advocates.

Local applications to the chest in pneumonia, such as hot poultices of whatever composition, or flannel and oil silk jackets, are valueless so far as the disease itself is concerned. Cold, wet cloths, on the other hand, or preferably ice bags, are considered serviceable by many practitioners.

With respect to the use of the lancet in this affection little can be said as a result of experience by the medical men of this generation. Its former abuse gave rise to a reaction that possibly may have

gone too far in the opposite direction. While there are some instances of obstruction to the right side of the heart possibly requiring venesection, the chief danger to this organ is more often a parenchymatous degeneration which requires stimulation. However, with an extensive lesion of this nature there will not be much reserve power in the heart left for stimulation. In these days bleeding sometimes may be of advantage, but, as a rule, the average city patient needs all the blood in his body for future contingencies.

When arterial pressure is high in the beginning it should, in my judgment, be left alone if not lowered by some simple remedy, such as a laxative or perhaps a little alcohol. Aconite, veratrum viride, tartar emetic, and the like, are worse than useless; they are actually harmful; they depress the action of the heart, and thereby produce one of the things we desire to avoid, namely, internal capillary stagnation. If there is high arterial tension associated with arteriosclerosis, nitroglycerin is the remedy, but it is permissible only under these circumstances. Low arterial pressure with fairly normal heart sounds is mistaken now and then by a novice for cardiac weakness. The vasomotor centers of animals infected by the diplococci are paralyzed from the first in varying degrees, as shown by Krehl;[14] meantime, excited action of the heart for awhile overcomes the initial tendency to a fall in arterial pressure which, however, eventually takes place. There may be a sudden failure of circulation, due to dilatation of the large abdominal vessels without previous warning. When these splanchnic vessels are involved the resulting collapse needs prompt and energetic treatment. It is much like what happens in surgical shock, and the intravenous injection of one or two drams of the 1:1000 solution of adrenalin in a pint of physiological saline solution, as suggested by Hare[20] for such a happening, may chance to avert immediate dissolution under these analogous conditions.

With the loss of vasomotor tone chiefly in the smaller arteries, and weakness of the first sound of the heart at the apex, and of the second sound at the aortic cartilage, besides accentuation of the pulmonary second sound, a giving out of the entire heart is threatened, if not imminent, and stimulants are indicated. Aromatic spirit of ammonia, Hoffman's anodyne, ergot, caffeine, digitalis may be taken by the mouth, or, in still more pronounced symptoms, strychnine alone or with atropine in large doses hypodermically. Should marked cyanosis with distention of the veins, dyspnea, labored action of the heart, and weakness of the pulse supervene, together with signs of pulmonary edema, the manifest engorgement of the right side of the heart possibly may be relieved by venesection, but at this juncture a critical moment commonly has been reached where much is done in desperation and little accomplished.

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ON LOCALIZATION IN MULTIPLE INTESTINAL OBSTRUCTION, WITH ILLUSTRATIVE CASE.*

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EVERY clinician knows how difficult it is at times to determine whether or not a given case is one of obstruction of the intestines. It is universally recognized that the diagnosis of obstruction belongs to the most difficult in the pathology of internal diseases. How often has laparotomy, performed for symptoms of obstruction, led to disappointing findings at the time of the operation. As an example, we can point to the symptoms of obstruction simulated by hysteria or to a condition of paralytic ileus. On the other hand, a condition of obstruction is often revealed during an operation or on the autopsy table, when such was not in the least suspected before the operation or during the life of the patient.

In case a positive diagnosis of obstruction has been made, we are still by far not ready for a therapeutic interference with the condition, granting, of course, that we are not willing to act blindly or to force upon the surgeon an exploratory laparotomy, for it is clear that by the term "occlusion" or "obstruction" we have named only a symptom. It is accordingly necessary to designate the seat of such occlusion or obstruction, which of course may not always be possible if one does not count self-evident cases with classical symptoms. And when we have made a positive diagnosis of occlusion or obstruction naming as its seat the large or small intestine, there may yet arise the question whether a second part of the gut may not be affected by a similar condition, the answer to which is of the utmost importance to the operating surgeon. Cases have already been recorded in which the symptoms of obstruction persisted after a laparotomy, so that a second

*Read before the Eastern Medical Society of New York.

operation was made necessary for the detection of the additional seat of obstruction. Even when these difficulties have been overcome there still remains the third question of the exact pathological condition leading to the symptoms of obstruction, and finally the problem of how to deal with any given case, whether to treat the patient medically in a conservative manner, or to resort immediately to surgical interference. The latter, moreover, is easier to decide in acute cases than in those that run a subacute or chronic course.

Our case is especially interesting because all the conditions for an exact diagnosis appeared one by one during the time of observation; the obstructions at two places were pointed out, the pathological conditions were precisely named, and surgical interference was insisted upon. The surgeon will be in position to communicate to you how useless would have been further palliative treatment which might have led to irreparable and disastrous consequences; the adhesions would have only increased in number, the intestinal coils would have become more closely pasted together, thus lengthening the time of a later laparotomy and narcosis, and reducing very much the chances for recovery of the little patient. Moreover, a subacute ileus could suddenly have developed into an acute condition, and thus led to a most deplorable result.

Boas, with reference to the difficulty of making the diagnosis in such cases, states the following: "Of all varieties of occlusion of the intestines this particular variety is the most interesting from the scientific, most frequent from the practical standpoint, yet most unsatisfactory from the standpoint of diagnosis." He continues in another place: "One is exposed to unavoidable mistakes in those rarer cases of simultaneous obstruction of the small and the large intestine, which Treves has described in his monograph, and to which Hochenegg has called attention more recently. In these cases of "combination ileus" one must be prepared to find multiple invaginations, cicatricial strictures, peritoneal adhesions, conditions of volvulus, all of which eventualities are of course beyond the possibility of diagnosis.*

Before we enter any further upon the reasons which enabled us to arrive at the diagnosis in our case, we want to state the patient's history.

David Fuchs, two years and ten months old, was brought to my office by his father on October 28, 1906. The father stated that the child was in perfect health until September 22: on that day it was struck by an express wagon, but was not run over. The patient was much frightened and was brought home fully conscious. That night it vomited once, the vomitus consisting of undigested food that had no fecal odor whatever. For the eight days following the child was perfectly normal. On September 30 violent pain set in in the abdominal cavity, as well as vomiting and constipation, yet without a trace of fever. In a few days a marked swelling of the abdomen was superimposed upon these symptoms. After ten days (on October 8), completely normal stools were reestablished, the swelling of the abdomen receded partially, yet the continuous pain and the vomiting showed no tendency to cease. Upon the advice of the attending physician the child was taken on the eleventh day of his illness to a hospital. According to the father, the child, during his stay in the hospital, did not vomit at all, had no pain, no constipation, and was therefore discharged after twelve days. For the six days following the child felt perfectly well, but in the three days preceding our first examination he had violent pain with and without vomiting each evening. Constipation and fever were absent. The father could not attribute the aggravation of the trouble at home to any gross indiscretion in diet, the old symptoms reappearing although the same semisolid diet was continued. The child was said to have lost much weight since September 22, having been a well nourished, robust child before the accident; he was said to have begun walking at eleven months and had not passed through any acute infectious disease in his infancy. Syphilis was likewise denied.

*Boas: Krankheiten des Darms, 1901, page 442.

Status Præsens:—First Examination (October 28). The patient possessed a well developd bony frame, rather weak muscles, and a much reduced panniculus adiposus. The visible mucous membranes were quite anemic, the belly was very much swollen, and the abdominal veins very prominent in the shape of a caput medusæ. Palpation from the umbilicus to the various abdominal regions disclosed no tenderness on superficial or deep pressure. The child continued to moan just as before the examination, apparently from fright. The lower border of the liver and the spleen were not palpable nor could a sensation of resistance be disclosed anywhere in the belly by a most thorough palpation. The existence of freely movable fluid in the dependent parts of the cavity was easily perceived. Percussion gave loud tympanitic sound all over, showing the existence of diffuse meteorism. Liver dullness could not be found because of this condition. Auscultation revealed the presence of widely distributed gurgling sounds and borborygmi. Examination with reference to a possible appendicitis was negative—McBurney's point not tender—rectal examination also was negative. There was no evidence of hernia; both testicles could be felt in the scrotum, and the rectal temperature was 98°. The organs of respiration and circulation were normal, the pulse was 100, easily compressible but regular. The examination of the urine gave the following data: The color was light yellow, reaction strongly acid, no albumin, no sugar, diazo test negative, no casts, and only a few squamous epithelial cells. Indican was in excess.

The child was kept in the office for one hour, with abdomen bared, in the hope that an attack of pain might intervene. This, however, did not occur. What could have been the diagnosis on this examination and what advice could we offer to the child's father? If we summarize the data obtained we have the following:

A. History:—(1) Trauma. (2) Vomiting—nonfecal—once in the night following injury. (3) Absence of any symptoms for eight days with absolute good health. (4) An illness of ten days' duration with continual violent pain, frequent nonfecal vomiting (four or five times per day), obstinate constipation. (5) Again cessation of all symptoms for eighteen days (twelve days in the hospital and six days at home). (6) Paroxysmal pain of three days' duration with and without vomiting. (7) Absence of fever throughout.

B. Physical Examination:—(1) Absence of tenderness in the abdomen. (2) Freely movable fluid in the peritoneal cavity absolutely shown. (3) Diffuse meteorism. (4) Well distributed borborygmi, and (5) Excess of indican in the urine.

The first thing suggested by the above symptoms was peritonitis, for the existence of which as the sole condition spoke the following facts: (1) The initial trauma. (2) Continuous pain and vomiting. (3) Persistent constipation. (4) Freely movable

fluid in the peritoneal cavity. (5) Diffuse meteorism, and (6) The excess of indican in the urine. The absence of tenderness and of fever, as is well known, do not in the least exclude the existence of peritonitis. If we were to consider the above combination of symptoms without reference to the history we could not but diagnose the case as traumatic nonseptic peritonitis.

But was this the sole cause of the above condition of affairs? No, for it would have been difficult to accept the existence of peritonitis as the sole pathological condition. What kind of a peritonitis could it have been that, having begun with such violent symptoms, continued for ten days, then disappeared for eighteen, only to reappear again with somewhat less intense manifestations? Accordingly, peritonitis could not be accepted as the one and only cause of the above complex of symptoms. Intestinal dyspepsia could not be thought of, because vomiting is very rare in that condition, and the history of the case showed no symptoms whatever, that should have preceded such a condition. Moreover, the onset after injury did not speak for this diagnosis. The paroxysmal attacks of pain with and without vomiting, in the three days before our examination, even in the absence of constipation, of necessity directed the attention to the possibility of obstruction or partial occlusion, caused by conditions in or outside of the gut. But it is well known that symptoms of occlusion can appear without the existence of the condition itself, for example, in cases of spastic ileus of hysteria or the paralytic ileus with or without peritonitis. Hysteria could not be thought of in this case. For the existence of paralytic ileus spoke the history of injury, the well marked diffuse meteorism, the pain, and vomiting. But could such a paralytic ileus disappear entirely in order to reappear again after eighteen days? Moreover, the well distributed gurgling sounds could not allow the acceptance of such a diagnosis: in paralysis of the gut, as is well known, there reigns a dead stillness in the abdominal cavity.

The critical consideration of these possibilities compelled us to accept the existence of true mechanical obstruction as responsible for the symptoms. Now, did we have to deal with a stenosis caused by scars in the interior of the gut? This could be excluded, for the history of the case mentioned no illness whatever that could have led to such a condition —no dysentery—no syphilis—no tuberculosis—no typhoid fever. The existence of a new growth could also not be considered: there was no sensation of resistance—tumors are not usually caused by injury—and the time, moreover, was too short to allow the development of a tumor, while the patient's condition showed no cachexia, but only a well marked anemia.

There remained only, among the rarer affections of the intestinal canal, thrombosis or emboli of the mesenteric vessels which may lead to a similar combination of symptoms. This, however, was easily excluded by the absence of any heart or vascular disease. The partial occlusion, then, could be caused by volvulus, by strangulating bands and adhesions, or by intussusception. Volvulus could be excluded on many grounds; it occurs more usually in the sigmoid flexure, there is usually a history of long continued constipation, it is a disease of advanced age, the characteristic stool of stenosis is seldom missed, as well as the localized meteorism (Wahl). Now, it remained for us to decide whether the symptoms of the case, with the light thrown upon them by the history, were caused by intussusception or by strangulating bands and adhesions. We could not, however, accept the existence of the latter condition as yet, because in the first place we failed completely to elicit any sensation of resistance in palpating the abdomen, and secondly, because a very important symptom, that of visible peristalsis, had been absent throughout. Had we at that time made a diagnosis of strangulating bands and adhesions, which we were enabled to do later by the appearance of further symptoms, then it would have been a simple guess on our part. Therefore, we were compelled to make the provisional diagnosis of intussusception.

But even here there lacked an important objective sign, that of the existence of the sausage-shaped tumor of invagination. Yet we had a plausible excuse for the lack of that sign—the tumor may have remained undetected because of the pronounced distention of the intestines. The free fluid in the abdominal cavity, even had we completely given up the diagnosis of peritonitis, did not at all exclude the existence of intussusception. It is self-evident that a bit of the mesentery could have been inclosed in the process, producing stasis in the mesenteric circulation and thus leading to the transudation of free fluid into the peritoneal cavity. The general meteorism spoke somewhat against intussusception; that, however, only caused us to suspect the existence of a second spot affected in the same fashion.

The history of injury and the age of the patient confirmed the above diagnosis. We transferred the supposed seat of the invagination to the small intestine because of the excess of indican in the urine. Such excess alone does not at all indicate that the seat of the affection is in the small intestine, because a pronounced and long continued fecal stasis in the large gut could likewise be responsible for it. In our case, however, the excess of indican spoke for putrefaction in the small intestine only, because constipation and accordingly fecal stasis did not exist for twenty-one days. In explanation of the intussusception we could fall back either upon the spasmodic theory of Nothnagel or the paralytic theory of Leichtenstern.

According to the first theory we could completely ignore the initial local peritonitis. The injury may have caused a ring-like tetanic contraction in one part of the intestines; this acted as the invaginating element over which the part of the gut below the place of contraction was thrown. If you follow the paralytic theory, then we are compelled to assume the existence of primary local peritonitis. A certain portion of the intestine may have been paralyzed and this invaginated into the active nondamaged gut immediately below by becoming everted into the latter's lumen.

The final diagnosis, then, was: Invaginatio partialis enterica, and the father was advised to have the child operated upon.

On the next day we had an opportunity to demonstrate the patient to a number of physicians. The following diagnoses were made: Traumatic peritonitis, Tuberculous peritonitis, Colica flatulenta, Paralytic ileus with and without peritonitis. Dr. Sturmdorf, who was asked especially for surgical advice, was of the opinion that, while a stenosis of the intestinal canal could not be excluded, still the absence of many symptoms prevented him from making that diagnosis, and the seriousness of the operation made him hesitate to recommend an exploratory incision at that time.

Ex concilio, it was decided to place the child in the Metropolitan Hospital, put him on a semisolid diet, wash his stomach, and give high rectal irrigations. The child remained in the hospital for eight

days till November 5, during which time it was carefully observed. No pains or vomiting occurred during this time and the stools were one or two per day of a normal character. The meteorism disappeared almost entirely. The child played, took nourishment with relish, and showed no disturbance of the gastrointestinal tract.

Now the objections against our diagnosis were put before us with renewed emphasis. We were told that the child was not in any serious condition, and that most likely he was suffering from intestinal dyspepsia. This condition would of course become worse at the home of the patient, because a strict diet would not be adhered to. Notwithstanding the striking results of the hospital treatment we continued to insist upon the absolute indication of a laparotomy. In this we were not prompted by a mere curiosity to see the patient's "insides," but because there was one element, the excessive amount of indican in the urine. We reasoned as follows: The child's intestinal tract was thoroughly cleaned out, per os and per rectum; where then existed this putrefaction as shown by the persistence of the excessive amount of indican? The nondisappearance of indican could be explained only by a temporary occlusion in the gastrointestinal canal. However, at the request of the father, the child was discharged from the hospital on November 5.

In the evening of the 9th, we again demonstrated the patient to a number of physicians. Fortunately, an attack of pain occurred during the discussion. Two parallel peristaltic waves were observed between the epigastric region and the umbilicus. Now the existence of an obstruction was evident to all present; yet the consensus of opinion was that the case did not at all call for surgical interference. Naturally the high mortality of operations with the necessary search for the place of occlusion was mentioned, since the place of affection designated by us was not considered proved. Upon our insistence, however, the child was placed in the surgical division of the Metropolitan Hospital under the care of Dr. Sturmdorf. We now took pains to make our diagnosis more exact. The provisional diagnosis of intussusception was of course excluded by the occurrence of visible peristalsis. The diffuse meteorism had already given us cause to suspect, as we have mentioned before, that perhaps another part of the gut was involved by the occlusion. The two waves of peristalsis now strengthened our previous suspicion. The very moment we had given up peritonitis as the sole cause of the above symptoms and accepted occlusion of the gut as the probable diagnosis, the diffuse meteorism could be ascribed almost exclusively to the latter condition. Yet a single occluded part could not produce such a high degree of meteorism and its excess could be due only to a second site of obstruction.

The next few days the child's stomach was washed each morning before breakfast and after the last evening meal. In no instance could bile or pancreatic ferments be discovered in the washings. This absolutely excluded a stenosis of the gut below the entrance of the common bile duct. High seated duodenal stenosis was not to be considered, since we had no symptoms, referable to the stomach. There was no stagnation in the stomach, moreover, and consequently no pyloric obstruction. As is well known, the symptoms of the latter coincide with those of the high seated duodenal obstruction, so that this also could surely be excluded.

The thorough daily palpation revealed to us one day a cord-like resistance in the peritoneal cavity; this extended from the region of the ileum to the left toward the descending colon. In this fashion we could locate more exactly the second suspected place of occlusion; the "X" being discovered we could now easily determine the second unknown quantity. The indican content could have been caused only by an occlusion at a higher level and this, in accordance with the above considerations, could only be the jejunum. Autopsies and laparatomies have shown before that strangulating bands about the jejunum are very common, and accordingly our complete diagnosis was: Subacute partial ileus caused by a strangulating band around the jejunum and adhesions between ileum and the descending colon. Palliative treatment we considered useless, and we therefore surrendered the case to Dr. Sturmdorf for a laparatomy.

Now, what was our explanation of the course of affairs in this case? Because of trauma, there gradually developed a local circumscribed peritonitis, which having run its course without temperature, was not of a bacterial nature. This peritonitis existed as the only pathological condition for either ten days (vomiting, pain, constipation), or for eighteen days, if we do not ascribe the vomiting on the night following injury to shock. Pathologically the peritonitis was of the plastic exudative type. The free fluid in the abdominal cavity was due only to the peritonitis, while the adhesions resulted because of the plastic character of the inflammation. The period of eighteen days, during which the child felt perfectly well, was necessary to afford the time for the formation of adhesions and of the strangulating band around the jejunum. As soon as the adhesions and this band reached a sufficient degree of development there intervened of necessity the first symptoms of obstruction, such as the paroxysmal attacks of pain for the three days preceding our first examination. The adhesions could not be palpated at that time, nor for some time following, because they were forming while the patient was under observation. This case shows therefore how quickly adhesions follow a peritonitis of short duration.

We have presented this case so extensively because it differs markedly from the ordinary run of cases; there were present really only fragments of symptoms, out of which there was to be constructed the whole diagnostic edifice.

In conclusion, I avail myself of this occasion to thank Dr. Sturmdorf for the skillfully performed laparatomy, the more so, as we were under special responsibilities to the child's parents, who allowed the operation only because of our insistence upon the same. Dr. Sturmdorf will communicate the surgical aspect of the case.

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BUTTERMILK AS AN INFANT FOOD.

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Dr. Ballot of Holland in 1865 called the attention of the medical profession to buttermilk as an infant food, which had long been used for that purpose among the peasants of Holland and Thessaly. But it was not until the recommendation of de Jager in 1895 and the classic publication of Teixeira de Mattos in 1902 on this method of infant feeding that the use of buttermilk became popular among the physicians of Germany and Holland. Within a short time this method of feeding healthy infants, and especially those afflicted with gastrointestinal disturbances, has found its way into numerous clinics and polyclinics

of Germany. Authorities like Baginsky, Heubner, Caro, Soltmann, Escherich, Salge, and others, have recorded very favorable results. Also in France, Roumania, Greece, and South America buttermilk has recently been tried as infant food with equally encouraging results.

As the term buttermilk is employed to designate various dairy products, it is necessary to confine this term exclusively to churned milk, which may be made by the following methods: (1) Sweet cream, the product of centrifugation, or of milk that has simply stood for hours in a cool place, is churned, whereby the milk-fat globules, after the disruption of their haptogen membrane, form the butter. This buttermilk is almost identical with sweet, skimmed milk. (2) Since a slight acidity of the milk renders the churning more profitable, milk or cream are used which have soured by spontaneous fermentation, or after inoculation with sour milk, or with pure cultures of *Bacillus acidi lactici*. The degree of acidity nearly corresponds to the neutralizing capacity of 5 to 7 c.c. of normal NaOH solution per 100 grams of milk. This buttermilk differs from the aforementioned one by its acidity (due mostly to lactic acid), and by the fact that the casein is coagulated and suspended in the serum in very minute particles.

While the physical, chemical, and biological differences between cow's and human milk correspond to those between a calf's and an infant's stomach, sour buttermilk deviates still more from human milk. The former shows an acid reaction, the latter an amphoteric or slightly alkaline reaction to litmus paper. Human milk is abundant in fat, scanty in albumin, its casein is dissolved and combined with calcium, and coagulable by rennet. Buttermilk is scanty in fat, abundant in albumin, the casein is separated from the lime, and therefore coagulated, and incapable of farther coagulation by rennet. In human milk the calcium salts are mostly suspended as insoluble phosphates; in sour buttermilk we find the calcium partly united with lactic acid; the insoluble di- and tri-calcium-phosphates are converted into *soluble* mono-calcium-phosphates. Human milk is almost sterile, buttermilk in its unboiled state abounds in bacteria, in saccharomyces species, and the products of their metabolism.

These great differences justified the scepticism and reserve in regard to the use of buttermilk in infant feeding until experiments and very favorable experiences removed every doubt as to its great usefulness in certain conditions. Buttermilk, in fact, has been proven to be one of the best dietetic remedies for gastrointestinal diseases of children, according to the medical literature of Germany. Sour buttermilk, however, is not to be administered in its raw primary state, but modified more or less in accordance to Teixeira's formula in the following manner: one liter (quart) of fresh buttermilk is mixed with one or two tablespoonfuls of rice—or wheat—flour, the milk being added gradually at the beginning, to prevent the formation of lumps. While being constantly stirred, it is heated slowly for fifteen to twenty minutes to the boiling point, and finally, after adding 50-70 grams of sugar, it is cooled and hermetically bottled. The addition of sugar makes up for the lack of fat and the resulting deficiency in calories, and so does the flour, which, besides, prevents the formation of coarse, tough coagula during boiling. The formation of these coagula does not occur, however, if the buttermilk is boiled very slowly, so that the boiling point is not reached before thirty minutes. The caloric value of the buttermilk has by this process been increased from about 260 to 600 or 700 units pro liter, thus approaching that of human milk. It contains a high number of caloridynamic units in a small quantity of fluid. The prepared buttermilk is a yellowish fluid, which, after standing, separates into two layers, the upper one consisting of the milk serum, the lower one containing the casein coagulated and suspended in very fine particles. By this fine division it resembles the fine coagula of human milk in the infant's stomach.

The excellent results obtained with buttermilk feeding in Germany induced us to try this method at the Caroline Children's Hospital in Vienna (Director, Dr. Knoepfelmacher), with a result which I consider worthy of reporting on account of its very encouraging features (1903).

In preparing buttermilk, we followed Teixeira's prescription, and administered it in separate bottles of from 50 to 100 grams. The daily quantity amounted in its calorimetric value to 80, 100, 120 units, *i.e.* 120 to 200 grams of milk pro kilogram of the infant's body weight. In acute cases of intestinal disturbance after a period of from one to two days under rice-water feeding, buttermilk was administered gradually in increasing quantities. After improvement had set in, the quantity was increased, not only according to the actual weight, but also to the *age* of the child.

Our own experience includes more than twenty cases, mostly of malnutrition, resulting from chronic gastrointestinal disturbances, with occasional acute exacerbations up to the intensity of cholera infantum; then some cases of *alaitement mixte*, one case of habitual vomiting (pylorospasmus), one prematurely-born child, and one case of icterus catarrhalis. Some of these cases had not responded to other methods of feeding and treatment.

I may be permitted to report in this place a few examples for all, reporting especially the increase of weight of the infants as the most significant indicator of improvement.

1.—Emil Z., two months old, weight 2,000 grams; chronic enteric catarrh, spasms. Weekly increase: 250, 450, and 400 grams.

2.—Rose Z., age two months, weight 3,250 grams; chronic gastroenteric catarrh. Increase of weight in two weeks: 550 grams.

3.—Bruno Sch., age four and a half months, weight 4,600 grams; rachitis, chronic enteric catarrh. Weekly increase in weight: 300, 300 grams, afterwards skimmed milk, which is less well borne.

4.—Walter F., age three months, 4,400 grams; chronic gastroenteric catarrh with acute exacerbation. Weekly increase: 190 and 140 grams.

5.—Julius M., six weeks old; chronic gastroentero catarrh, acute exacerbation. Weekly increase of weight: 260, 300, 400, 400 grams. During the subsequent three weeks bronchitis, with only 200 grams, later on in five days with 300 grams increase. Change to skimmed milk is followed by diarrhea.

6.—Rudolf St., sixteen days old, weight 2,300 grams; prematurely born child; too weak for nursing. Increase of weight in seven days: 240 grams. The following week exclusively breast feeding, with a loss of 90 grams in weight.

7.—Anne K., five weeks old, 3,000 grams, breast child; weak movements in suckling; dystrophy; mother's milk abundant. During feeding with buttermilk, besides breast, weekly increase: 400, 300, 250, 100, 200 grams. Within the ten next days, 200 grams; the following week, 300 grams. Exclusive breast feeding, with weekly increase of weight of 50 to 100 grams.

8.—Anna Dr., two months old, weight 1,900

grams; chronic intestinal catarrh with acute exacerbations, atrophy. Rice-water diet; calomel; then buttermilk. Increase of weight in six days, 150 grams, the following ten days 250, the next week 200 grams.

9.—Karl H., five months old, 3,900, breast child; dyspepsia, eczema universale. The latter disappeared after a short time of buttermilk feeding. In the beginning buttermilk was not well borne. First loss, but soon increase of weight 200 and 350 grams weekly.

10.—Anna F., three months and twenty days old, weight 4,400 grams; habitual vomiting (pylorospasm); breast child; excessive vomiting after each breast feeding, also when fed with diluted cow's milk and with rice water, given in teaspoonful doses; irrigation of stomach without result; buttermilk (at first in teaspoonful doses) checks the vomiting at once. In the first week 100 grams increase of weight.

11.—Hans Z., three months old, weight 2,650 grams; catarrhal icterus, with tendency to constipation; milk-sugar, artificial Carlsbad salt, and buttermilk feeding. The icterus disappeared soon. Weekly increase of weight: 200, 250, and 150 grams.

12.—Josephine K., three months old, weight 3,500 grams; chronic dyspepsia, eczema; buttermilk feeding. Increase of weight the first week: 250 grams; the next four days 120 grams. The child became ill with pneumonia, and, in spite of this, gained 70 grams during the following five days and 130 grams the following week. Without buttermilk the baby gained within the next two weeks only 50 grams, but after reestablishment of buttermilk feeding, 250 grams the first week, and 1,700 grams during the two following months. The eczema disappeared very soon.

13.—This case shows the danger of a sudden change from buttermilk to another food. Karl U., ten months old, 6,600 grams; chronic entero catarrh. Various methods of treatment had been tried without result. While the child was fed with buttermilk the weight increased in four days 200 grams; the following twelve days 300 grams. Then the mother, without our consent, fed the baby with cow's milk and noodle soup. Soon incontrollable vomiting and diarrhea set in, followed by convulsions and exitus letalis.

A failure was the following case:

14.—Anna T., 4,300 grams weight; cholera infantum, resulting in chronic enteritis. We tried besides buttermilk feeding other methods, but all in vain, and the child died after four weeks of treatment under the symptoms of hydrocephaloid.

The increase of weight during buttermilk feeding is accompanied by a general improvement. The babies become quiet and good-natured, they sleep well, and have a good appetite. Vomiting ceases, or becomes less frequent; the frequency of the stools lessens, although they may occur oftener than in normal breast-fed babies. The stools are usually yellow, homogeneous, pasty, and of a neutral or alkaline reaction. But even in cases where the quality of the stools did not satisfy our expectation, and where we had to dilute the prepared buttermilk with small quantities of rice water, we observed a good increase of body weight. All the babies liked the buttermilk, even as an addition to breast feeding.

Our encouraging experiences being limited to a comparatively small number of cases, I will briefly review the results of others, based on a larger experience, to show how excellent a remedy and food buttermilk has been proved to be. The excellent experiences of Teixeira are so numerous that they have been the principal inducements for similar experiments in Germany. His six years' experience covered many hundreds of cases which not infrequently manifested a weekly increase in weight of from 500, 600, to 700 grams. Baginski's observations range over 182 cases in the medical wards of the Emperor and Empress Frederick Hospital of Berlin. In 150 the results were excellent, in the remainder the improvement was less pronounced; in 32 children the feeding was unsuccessful. In the entire hospital he had fed 300 children with buttermilk with similar results. A few children were taken directly from the breast and given buttermilk because the mothers could not visit the hospital to nourish their children.

Salge reports 85 cases with very satisfactory results out of 119 babies, who were fed with buttermilk for dyspepsia, chronic entero catarrh, atrophia, and in *allaitement mixte*. In the remaining cases buttermilk failed, but so did also other methods, including human milk.

Jean Cardametic (Greece), Rensburg, Leschziner, Escherich (Vienna) had similar experiences, and Dr. Riether, primarius of the foundling institution of Vienna, stated that atrophic babies thrived excellently on buttermilk after other foods had been tried in vain. He found the remarkable fact that breast-fed babies, who had been dystrophic without determinable cause, showed a remarkable increase in weight and improvement if small quantities (one teaspoonful to one tablespoonful) of buttermilk were administered before each breast feeding. He supposes this to be due to the digestion-promoting action of lactic acid, which perhaps may also account for the good results obtained from buttermilk feeding in *allaitement mixte* of healthy babies.

Teixeira's original method of preparing buttermilk has often been modified to meet special indications. For instance, the flour has been partly or entirely replaced by various dextrinized flours (Kindermehle) for babies in the first weeks of life, or for babies whose feces showed upon microscopical examination, or with the iodine test, starch in a greater amount, indicating insufficiency of starch digestion.

In extreme intolerance of carbohydrates the flour can be dispensed with entirely, and even the sugar may be replaced for a short time by some other sweetening substance (saccharine). The low percentage of fat in buttermilk has been increased with the best results (Rommel, Rensburg, Schlossmann, Heubner) by the admixture of cream or sesame oil, when buttermilk alone did not give satisfactory results, and an increased amount of fat was needed. For it is evident that fat cannot be replaced by carbohydrates, even isodynamically, for an indefinite period of time, since the principle of isodynamic substitution is not applicable arbitrarily or without limit; indeed, in some cases the poverty of fat in buttermilk may be a drawback.

Considering the almost paradox composition of an infant food of such approved, undoubted value in various intestinal disturbances which so often accompany artificial feeding, attempts at explaining these facts become very interesting. The unexpectedly good results obtained from this food which is so rich in albumin have been explained by the relative lack of fat; but experiments with simple skimmed milk (Knoepfelmacher) and the fact that the addition of cream aids the good results obtained in many cases do not support this supposition. The easy digestibility of the casein of buttermilk is almost universally admitted; it is probably due to the distribution of the former in extremely fine floccules as a result of the mechanical process of churning. In addition, the acid reaction, the abundance of carbohydrates, with their acid products of fermen-

tation within the intestinal tract, may perhaps protect the albumin from more intense putrefaction and influence the reaction of the soil of the intestinal bacterial flora.

According to Rubinstein's investigation, pathogenic bacteria (of diphtheria, typhoid, tuberculosis, *Bacillus pyocyaneus*), as a rule, gradually perish spontaneously in buttermilk, both on account of the increasing acidity and the presence of the *Bacillus acidi lactici,* or they are easily destroyed by boiling for only one, two, to three minutes. We further know that the acidity of the food promotes tryptic digestion, as the acidity of the stomach contents energetically stimulates (Pawlow) the secretion of trypsin. The digestibility of the nitrogenous substances of buttermilk lessens the work (Heubner) of the glands of the stomach and the intestines; the amount of energy thus spared is beneficial to the organism of the baby.

As to the indications for the use of buttermilk, no absolute rules can be formed, nor is any strict classification of the various intestinal disorders unanimously accepted. Buttermilk has been used with best results in insufficiency of fat—and of albumin—digestion; in atrophia infantum, dependent on chronic entero catarrh; in dystrophia infantum without determinable causes; in *allaitement mixte,* and in cases of sudden weaning. The high calorimetric value of the buttermilk renders it fit for feeding prematurely-born babies who are not able to nurse, or if no wet nurse can be promptly secured. Many babies with intestinal diseases digest only buttermilk; others digest other foods as well. As a rule, acute intestinal disorders, and those chronic disturbances due to prolonged starch feeding, should be excluded. In case of intolerance for carbohydrates, buttermilk without flour, or even without sugar, may be tried for a short time.

The objections against a buttermilk régime are due to the fact that buttermilk of standard quality, which is indispensable for success, can be obtained only with great difficulty in large cities. The common commercial so-called buttermilk is indeed too often unfit for infant feeding on account of its contaminations, its unhygienic manipulation, and its ureliability with reference to acidity.

To meet these objections, pure conserves of buttermilk are prepared in Germany, and have been tried with success in clinics under the supervision of leading pediatrists. They are worthy of a trial wherever genuine buttermilk cannot be secured.

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Hydrastis.—J. M. French says that he believes that hydrastis is a valuable drug. As a stomachic and general tonic, the crude drug and its galenic preparations may be employed. To produce contraction of muscular and connective tissue, berberine is the preferred agent. To cause contraction of the arterioles, hydrastine and hydrastinine are effective, and of these hydrastinine is especially superior as a uterine hemostatic.—*American Journal of Clinical Medicine.*

THE RELATIONSHIP OF CLINICAL SYMPTOMS TO MICROSCOPICAL FINDINGS IN CASES OF CARCINOMA OF THE UTERUS.

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Of all scourges which since the early existence of humanity have devastated and terrorized mankind, none up to the present time has been able to resist the penetrating searchlight of microscopy, bacteriology, and chemistry so obstinately and, unfortunately, so successfully, as carcinoma. In the same manner as during the time of Hippocrates and Aulus Cornelius Celsus, the physician and surgeon of to-day is forced to battle with cancer as an enemy of whose origin, mode of living, and strength he knows but little, if anything, and with full justification his position then, as now, can be compared to that of a general who is compelled to accept battle without sufficient reconnoitering against an enemy, whose quality and quantity is unknown to him, and who is sheltered by the darkness of night and entrenched in a seemingly impenetrable position.

However, time and scientific progress have been grinding slowly but surely, and have destroyed gradually a few outlying forts of the enemy's fortress, and although all efforts of detecting the *"fons et origio"* of cancer have been unavailing and many elegant hypotheses have proven to be nothing but *chateaux en Espagne* and have had to disappear from the horizon of scientific truth like the *fata morgana,* still our clinical results, achieved in this combat, show a decided gain, and surgery of to-day can claim to have reduced the mortality of cancer from almost 100 per cent., as existing during the time of Hippocrates, to a mortality of about 60 per cent. In other words, at the present time surgery is enabled to save, according to circumstances which will be illustrated later, from 25 to 50 per cent., conservatively speaking, of all carcinoma patients.

The reasons for this wonderful success and changed state of affairs are, as known to all of us, twofold: First, the phenomenal advancement of surgical technique, based upon the epoch-making discovery of Lister; an advancement of technique which, in regard to carcinoma operations at the present time, has been pushed to the utmost degree of perfection and seems almost to have reached the limit of human possibility; second, the advancement of clinical diagnosis and microscopic pathology. Thus we are enabled first to demonstrate conclusively that carcinoma in the incipient stages of its development is a local disease, and, based upon this fundamental dogma, second, to make our diagnosis in its early stages, at which time our now perfected surgical technique can be employed most effectively, and can reap its just reward: *Sanatio completa.* To achieve this purpose fully, however, and to make the diagnosis of carcinoma in its earliest stages possible, it is absolutely essential that the study of clinical symptoms go hand in hand and be interwoven, so to speak, with the study of microscopical pathology. That they are inseparable from each other, and that in each individual case the pathological examination by the microscope has to speak the last and decisive word in regard to diagnosis of carcinoma; in fact, that without it such a diagnosis has hardly any merit from a scientific standpoint, can best be demonstrated by a study of the relationship of clinical symptoms to microscopical

findings in cases of cancer of the uterus, with which this paper has to deal.

It is hardly possible within the limits of one article to go into minute details, and as this paper is addressed to the general practitioner, and not to the specialist, such details are not necessary. Its scope will be held within the boundaries of a general survey, emphasizing chiefly those points which are essential for the purpose of recapitulating, and, if possible, of advancing the knowledge of the general practitioner to the early diagnosis of carcinoma uteri.

What are the clinical symptoms pointing to a possibility of a malignancy of the uterus in the individual case—symptoms which must make it necessary for the general practitioner to make immediately a thorough clinical examination of the female genital organs of the patient?

A. When a woman over fifty years of age has entered the climacterium, and after some months of cessation of the menstrual flow, notices a bloody discharge or even a watery sanguineous discharge from the vagina, there exists strong suspicion of carcinoma of the uterus, and an immediate physical examination of the generative organs is imperative. The vulva and vagina should be examined thoroughly and the cervix uteri inspected. If it is found that no growth or ulcerative or catarrhal process is present in these organs to explain the symptoms, and that bimanual examination does not reveal the presence of a tumor of the uterus or adjacent organs as a remotely possible source of the bloody discharge, then it is necessary that a thorough currettement of the body and of the cervix uteri be made. All scrapings obtained by this curettement, performed in a most thorough manner, so as not to overlook a beginning carcinomatous growth in the tubal cornua of the uterus, should be saved and preserved in a 4-10 per cent. formaldehyde solution for microscopical examination, either by the practitioner himself, if he is competent for this specialistic work, or by a competent gynecologist or pathologist. If during the curettage we find that the inside of the uterus is uneven or rugged, or if large masses of tissue easily gave way during curetting, our suspicion of carcinoma of the body of the uterus receives further confirmation and is clinically almost a certainty, but the accurate scientific diagnosis only the microscope is able to reveal, as the same clinical symptoms may be found in cases of submucous and interstitial fibroid of the uterus which has undergone necrotic or sarcomatous degeneration, or in cases of sarcoma of the corpus uteri; mucous and fibroid polypi originating from the cervical canal or the cavity of the uterus; glandular endometritis, and very rarely tuberculosis of the corpus uteri. However, we all know in cases of myoma of the uterus the climacteric very seldom begins before the fiftieth year, but usually much later, and that in cases of submucous fibroid the patient usually gives a history of menorrhagia and metrorrhagia occurring before the age of fifty. That such menorrhagia and metrorrhagia between the age of thirty and fifty is furthermore oftentimes the first clinical symptom of cancer of the portio and the cervix uteri, will be considered later.

Cancer of the body of the uterus usually occurs between the ages of fifty and sixty, and in the predilection for this age it resembles sarcoma of the corpus uteri. It is furthermore well known and proven by statistics that of all cases of cancer of the uterus, carcinoma of the corpus gives the best surgical results, because its virulency (so-called) or its tendency to produce metastasis, and to spread to the broad ligament and adjacent organs, is less pronounced than in cases of cancer of the cervix. As an illustration, I will here only briefly mention the operative results in cases of cancer of the uterus from Chrobak's clinic, Vienna. According to his statistics, published recently by Blau (*Beiträge zur Geburtschülfe und Gynäcologie,* Bd. 10, Heft. 3), he performed from January, 1890, to October, 1903, 309 vaginal hysterectomies for cancer of the uterus. Of these, 87.7 per cent. were cases of cancer of the cervix uteri, and 11.5 per cent. cases of cancer of the corpus uteri. Seventy-five per cent. of the cases of cancer of the corpus were permanently cured, that is, there was no recurrence after three years; from the cases of cancer of the cervix only 40 per cent. were cured. Because of this great possibility of permanent cures of cancer of the corpus uteri, it is extremely deplorable when such cases come too late to the surgeon, in a state, for instance, when the carcinomatous growth has penetrated the entire thickness of the wall of the uterus, and has produced metastasis within the peritoneal cavity. About three years ago I had the misfortune of observing such a case, which gave the following history: Mrs. K., from M., Mich., fifty-four years of age, states that she ceased to menstruate at the age of fifty. Two years later a bloody discharge made its appearance, which she believed was nothing extraordinary, but merely a renewal of her old menstruation. The discharge became more copious later on, and was at times of a foul smelling character. This,

FIG. 1.—Adenocarcinoma of the corpus uteri.

together with some pain in the lower portion of her abdomen, was the incentive (two years after the appearance of the first symptoms) to consult a physician, Dr. Y., who called me in consultation. Bimanual examination revealed no abnormalities in the vagina or cervix. The body of the uterus was enlarged to double its normal size, and was painful to pressure; a bloody, foul discharge exuded from the external os. The microscopical examination of some scrapings kindly made by Dr. Beffel, the microscopical drawing of which (made by Dr. Ruhland) is herewith reproduced on Plate No. 1, showed that we had to deal with an adenocarcinoma of the corpus uteri. During the operation, performed by the combined vaginoabdominal method, it was found that metastatic growths had already formed within the peritoneal cavity. One of these, as large as a walnut, was removed, and plate No. 2 reproduces a microscopical picture of this metastatic growth. The woman recovered from the operation, gained in strength for one-half year, and died one and one-half years later, a victim of her own ignorance and superstition. According to the excellent results, which, as already pointed out, surgery can achieve in cases of cancer of the body of the uterus, this woman's life could almost certainly have been saved if immediately following or within half a year following the beginning of her clinical symptoms hysterectomy had been performed.

In case that during an examination a polypus is encountered as the underlying cause of the metrorrhagia, this polypus must be removed thoroughly at the base of its insertion to the cervical or uterine wall, the uterus curetted, and polypus and scrapings subjected to a microscopical examination. Although most polypi are of a mucous or fibrous nature, they sometimes undergo carcinomatous degeneration. It is furthermore advisable to keep all patients from whom uterine polypi have been removed, under strict observation for the next one or two years, because of the possibility of the recurrence of the

FIG. 2.—Metastatic growth in the peritoneal cavity. A case of adenocarcinoma of the corpus uteri.

polypi and the future development of malignancy. The following observation of my own will illustrate this point. Mrs. E. M., from M., Wis., forty-eight years old, complained that for six months she had been suffering from menorrhagia and metrorrhagia. The examination revealed a polypus protruding out of the external os. The uterus was curetted and the polypus removed. The microscopical examination, as shown in plate No. 3, showed that there was no malignancy present. One and one-half years later the menorrhagia returned and another polypus of benign character had to be removed. No further disturbances since this time.

In case a tumor of the adnexa is encountered as underlying cause of the menorrhagia, a laparotomy has to be performed, and if the tumor proves to be a malignant growth, it is necessary to remove the uterus and the adnexa on the other side of it, because a metastatic growth may have already developed or may develop later on in the body of the uterus or the ovary. I observed one case in which a benign tumor

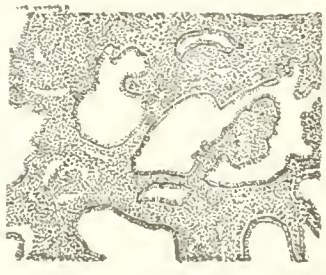

FIG. 3.—Polypus cervicis uteri

of the left ovary, a fibroma the size of a man's fist, was the underlying cause of excessive post-climacteric menorrhagia and metrorrhagia. These subsided promptly after the removal of the fibroma ovarii.

B.—When a woman from thirty to fifty years of age complains of frequent menorrhagia and metrorrhagia, and furthermore points out that bloody discharges, intermingled with leucorrhea, occur during or following coitus or vaginal douching, there again exists strong suspicion of carcinoma—the probability being that the portio vaginalis uteri is the seat of the disease. If, during examination of the patient, we detect a growth or ulcerative process on the portio vaginalis, easily bleeding or even crumbling from manipulation, then the diagnosis of carcinoma is, from a clinical standpoint, almost a certainty. In such cases a piece of portio containing both healthy and diseased tissue should be excised under antiseptic precautions and examined microscopically. It is well known that the findings and symptoms above referred to—such as bleeding during coitus, friability, etc.—which point so strongly toward the diagnosis of cancroid or cauliflower carcinoma of the cervix, may also be found in cases of simple erosion of the portio vaginalis.

The two patients from whom were taken the tis-

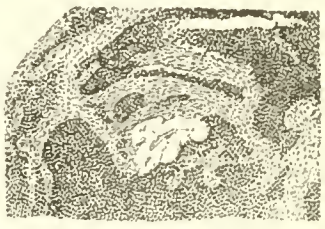

FIG. 4.—Cancroid of the cervix uteri, showing areas of hyaline degeneration.

sues illustrated in plates Nos. 4 and 5, demonstrate this point very clearly. In both these cases the diagnosis of carcinoma of the cervix uteri had been made by several physicians on the basis of the clinical symptoms and physical findings. In the first case (plate No. 4), the microscope confirmed the diagnosis, and showed that we had to deal with a cancroid of the portio vaginalis, hyaline degeneration being present in some places. In the second case, as shown in plate No. 5, the microscope showed that the process was a purely inflammatory one. Curettage and partial excision of the cervix was advised and performed in this case three years ago, and the patient has enjoyed perfect health ever since.

At this point I would like to sound a warning against the indiscriminate cauterization of what appears to be simple erosions of the cervix, without first confirming the diagnosis with the microscope. Many cases are cited in the literature (and naturally many more are never reported at all for obvious reasons) in which during the delay from cauteriz-

FIG. 5.—Erosion of the cervix uteri showing round-celled infiltration.

ing, what was supposed to be a simple erosion of the cervix, an unsuspected carcinoma is allowed to pass the stage of surgical operability. On the other hand, it is hardly necessary to point out once more that statistics of surgeons who claim to have cured so many cases of cancer of the cervix uteri are absolutely worthless without the confirmation by microscopic examination in every case.

The greatest obstacles to early clinical diagnosis are encountered in those cases of carcinoma of the cervix uteri which originate from the epithelium of the mucous membrane above the external os, or from the epithelium of the deeper glands of the same region. In such cases the clinical symptoms of menorrhagia and metrorrhagia occur so late

that the patient seldom consults her physician for relief until all hope of radical cure has vanished. In the examination of such cases the physician is apt to find that, while the external os may be of its natural size and appearance, immediately above it a crater-like cavity, lined with friable tissue, is encountered. In addition to this, hard nodules or infiltrations may be found on one or both sides of the uterus—the result of extension of the carcinoma into the broad ligament.

C.—If, during an abortion, an hydatid mole is encountered, and if after a lapse of some weeks hemorrhages occur in spite of the previous thorough emptying of the uterus, either by curettement or digital ablation, there is again suspicion that one of the most malignant forms of carcinoma may have developed on the basis of the mole, namely, chorion-epithelioma or deciduoma malignum. This form of carcinoma may, though rarely, follow a simple abortion. If, therefore, hemorrhages persist after thorough and possibly repeated curettement of an abortion case, such a possibility must be borne in mind. If during the examination of a case such as just referred to a soft tumor is found within the vaginal wall, this tumor should be carefully examined microscopically, for cases are on record where, following the expulsion of a hydatid mole, or even after simple abortion, primary chorion-epithelioma has developed in the vaginal wall without the presence of any similar growth in the uterus at all. Some authors even go so far as to advocate hysterectomy in every case of hydatid mole, believing that a hydatid mole *per se* is the beginning of a malignant process. This advise, it seems to me, is a little too radical.

In summing up, if we ask ourselves why is it that in cases of cancer of the uterus women consult the physician usually at a period when radical cure by surgical means is out of the question, we must attribute this to two causes—first, to gross ignorance on the part of the public in regard to cancer in general and especially its early symptoms, and second, to the insidious character of the disease. I have already referred to the prevalent belief that, when after the climacterium has set in, hemorrhages occur, these hemorrhages are nothing more than the reappearance of the natural menstrual flow, or a natural rejuvenation. Another erroneous belief, strongly prevalent among the public, is, that hemorrhages from the uterus without pain cannot be cancerous in origin. We all know that pain in any case of cancer of the uterus, in the absence of any inflammatory process, almost invariably indicates that the neoplasm has extended beyond the limits of the uterus itself, and that our prognosis, as far as a radical cure by operation is concerned, must be *valde dubia aut pessima*. This ignorance on the part of the public must be overcome before we can ever hope for any material improvement in our surgical results. In this matter every physician should consider it his duty to help dispel the dense ignorance of the masses by education. Great progress has already been made in this respect in Germany by such gynecologists as Winter, Duehrssen, and others, who by public lectures, magazine articles, and circular letters of instruction to midwives, are meeting with great success in reducing the mortality from uterine carcinoma by education of the masses.

To combat successfully the insidiousness of carcinoma, it is imperative for the practitioner to make careful and conscientious clinical, and, if necessary, as above illustrated, microscopical examinations in dubious cases, and it is better for him in case of doubt to share the responsibility with the specialist, than to resort to dilatory and experimental therapeutics.

At the same time we sincerely hope and trust that the great efforts now being made in the various cancer laboratories of the world to determine the genesis and nature of the scourge may be crowned with success in the near future, and that the darkness of the pestilence may soon be dispelled by "*mehr Licht.*"

Post Graduate Hospital.

ILLUSTRATIONS FOR MEDICAL JOURNALS.

By A. J. MARTIN,

PATHOLOGICAL ARTIST

NEW YORK

Among the medical journals of the world, those of the United States are far away ahead in the comparatively new departure of illustrations. In this age of hustling and competition the ever-busy medical practitioner who glances at his journal in what spare time he can afford, expects as a matter of course to find fully illustrated articles. The illustrated medical journal has become a necessity; it has come and come to stay.

Fig. 1.—Line drawing from a case of fungating sarcoma, showing the type of illustration best suited to journal work.

Now a word, in brief, as to the adaptability of the different methods adopted in illustrating medical articles. It is a not uncommon fallacy to suppose that an etcher can produce a good block out of anything. Let him be supplied with as good an original as is procurable.

Without doubt, line—pen and ink—drawings stand preeminent. They are in most cases sufficiently comprehensive, and reproduce better and more cheaply than half-tones made from wash drawings and photographs. And nothing is more pleasing than a well-executed line drawing. This fact is indeed particularly true in journal work when one remembers that the paper used is uncalendered and the printing done very rapidly.

Photography is to-day playing a great part in il-

lustrating our journals. Some men prefer it because they say the camera cannot lie. But I aver that, with comparatively few exceptions, photographs that have not been "touched up" and transformed literally into drawings, do not furnish good

Fig. 2.—From an untouched photograph of a case of mediastinal tumor, with swelling of the glands of the neck on the left side and edema of the upper lid of the right eye; numerous dilated veins were present in the skin covering the thoracic swelling.

material for a successful reproduction. Figs. 2 and 3 well illustrate this point.

Wash drawings, possessing strong contrast of light and shade, make beautiful half-tone reproduc-

Fig. 3.—From the same photograph as Fig. 2, after retouching to bring out the salient points

tions, and are in great favor at the present day. But, to my mind, this class of illustration is more suited to works in book form than to the journals, where expense in reproduction is a more serious matter.

As to color work little need be said. There is a wreath of laurels awaiting the man who will devise a method of reproduction in natural colors sufficiently cheap to enable our editors to delight their readers with this form of illustration. But this is an age of rapid progression, and I confidently believe that the time is not far distant when our medical journals will be much more interesting pictorially than they are at the present day.

The Opsonic Index in Relation to Tuberculous Peritonitis.—Arthur H. White calls attention to the surgical cures of certain cases of tuberculous peritonitis by the flushing of the peritoneal cavity. In relation to this well known fact the author speaks of the recent work of Wright, who has shown that there is present in the blood a protective substance hitherto unknown, which he calls opsonin. To the presence of this substance phagocytosis is largely due. This investigator has also shown that in cases of local tuberculosis the blood contains less opsonin than that of normal individuals. The opsonic index may be raised by the inoculation of a tubercle vaccine. He has proved that in raising the opsonic index and keeping it steadily at the normal, or higher than normal by means of inoculation, ultimate complete cure of local tuberculosis will result. The writer believes that operations should still be performed in these cases, because they furnish the only or the best means of getting rid of the fluid poor in opsonin and of promoting the necessary exchange which occurs between the blood and the locally infected area. It will be well also to raise the opsonic index before operation by inoculation. The after-treatment should include blood examinations from time to time to determine the degree of the opsonic index.—*The Dublin Journal of Medical Science.*

Torsion of a Hydrosalpinx.—Some fifty cases of this condition are already on record and renewed interest in the subject has been aroused by the report of a recent case by Dr. Albert Martin, which is editorially reviewed in the *British Medical Journal* of January 19, 1907. The patient, thirty-four years old, not pregnant, supposed herself threatened with a miscarriage. Nine years previously she had suffered from a violent attack of pain in the hypogastrium, chiefly towards the right side, with abdominal distention. She kept her bed for a month, and recovered spontaneously; no diagnosis being made. The illness which led her to consult Dr. Martin was a return of the abdominal distention, with diminution of the catamenial flow. On this occasion the acute attack followed instead of preceding the distention. It came on when the patient was finishing her lunch, and was very severe, chiefly in the right iliac fossa, radiating down the lower extremity. As she had suspected pregnancy, the acute attack was taken by the patient for threatened abortion. On examining the pelvis Martin detected a tender swelling in the right fornix, reaching into Douglas' pouch. It suggested torsion of the pedicle of a small ovarian cyst. Abdominal section was performed, and a large hydrosalpinx of the right tube was discovered. It resembled superficially a coil of distended strangulated intestine, and was twisted two turns on its pedicle. It is significant that there were no adhesions, and as dilated tube is very common but not often twisted, yet usually more or less adherent to adjacent structures, the cause of the relative rarity of torsion is clear. Ovarian cysts often rotate on their pedicles, but they are much heavier than tubes and therefore not so readily fixed by adhesions. An instructive discussion followed the reading of Dr. Martin's monograph. Siredey related a case where a lady was attacked suddenly with "enteritis" when at a watering place. A tumor was detected; it proved to be a large hydrosalpinx with twisted pedicle.

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE EVIL OF EXAMINATIONS IN MEDICAL EDUCATION.

WE are constantly hearing so much about education in all its aspects that the mention of the subject is a suggestion of boredom. We think it must have required some courage to announce an address on the "true aim of medical education and the evil of the examination fetich" as a commemoration of John Hunter. This course was adopted, however, by Dr. Lauriston Shaw, physician to Guy's Hospital, London, who delivered the oration at the Hunterian Society on February 15, and succeeded in imparting to his discourse a degree of novelty which was as unusual as the lesson he inculcated was important. It came as a surprise at the outset that Hunter's defective preliminary education, with his later extraordinary mental development, and even his tragic sudden death, should be cited in support of the theme. Not that it was suggested that his amazing work and development were to be considered due to the fact that he could not have passed the equivalent for his day of one of our preliminary examinations when he began his life work. But it was an open question whether a school and college course might not have produced a merely successful practitioner instead of one of our most brilliant thinkers. Possibly his protest against the requirement of preliminary instruction, in the excitement of which he expired, was occasioned by the recognition that such barriers would have shut him out from the career in which he must have known that he had attained remarkable success. Dr. Shaw referred to Hunter's crabbed style as due to his defective early education, and commented on the rarity of the two-fold power of searching out the hidden facts of nature, and telling in clear language the truths one has found; but a facile pen might have drawn him from the bench to the writing table, and, after all, "if he could have told us more fluently what he saw, would he have seen so much?"

The lecturer proceeded to show the blighting influence of the examination system on both teachers and pupils. He maintained that the fetich of examination is gaining a hold year by year, that its influence is wholly detrimental, and its effects demoralizing. Yet it would be easier for medicine than for some other studies to free itself from this evil. The ideal examination of those who worship the fetich is conducted by one who knows the candidate only as a number. How can he test the powers of the mind? One point he can try, that which is commonly spoken of as "the knack of passing," the ability to keep a store of facts on the surface and pour them out rapidly in presence of a stranger—a power essentially depended on by the crammer—"a mixture indeed of memory and cheek." Dr. Shaw admitted this power was an attribute of mind, just as bulk is of muscle, but said to worry a man who wants to develop his mind with continual investigations of his memory was as senseless as periodically to test the lifting powers of a man who was learning the violin. As in one case, the subtle power of coordination would be lessened, so in the other case would cramming deteriorate the higher intellectual faculties. No sooner does the medical student become acquainted with his teachers than the chilling specter of the examiner comes between, and both are handicapped at every step by the question, "Will this pay at exams?" Dr. Shaw admitted that after his twenty years' teaching, he knew too well what would pay in this way, and he knew, too, that many a student's desire for knowledge, power of observation, capacity for reflection, judgment, and reasoning faculties have been crushed by the domination of the examination fetich. In no calling are the highest faculties more necessary than in ours. It is useless to develop only a power to collect facts in a man destined to practise. A man primed with a knowledge of the possible beliefs of his examiners may be incapable of exercising a sound judgment of such beliefs. No mass of facts in his memory will serve in diagnosis the man who has not trained his eyes, ears, and fingers as well as his brain.

Dr. Shaw would have inspection replace some of the examinations, and records of work done allowed to count toward marks for qualification. He would have bedside work and that done in the post-mortem room and in the laboratories given their proper value. Tangible results of a student's work could be judged by his clinical records, his charts, his bacteriological, chemical, and hematological reports, together with duly attested microscopic slides, heart and pulse tracings, photographs, drawings, and so on, to be kept available for surprise visits of the inspector. Much better would such a record be than examination tips by the crammer. Dr. Shaw believed that such inspection would ultimately be acclaimed as a means of "overthrowing the examination fetich and allowing us to attain the true aim of medical examination." The author of this address from which we have quoted is to be congratulated on his courage in stating his views, and still more perhaps on his own escape from the evils of the fetich of which his university (the London) was so long the high altar.

RELATION OF ENDOTHELIOMA TO CANCER RESEARCH WORK.

A DISCUSSION of this question was recently held before the Glasgow Medico-Chirurgical Society, the paper of the session being presented by Dr. W. S. Lazarus Barlow (*Lancet*, March 9, 1907). After a description of the various forms of endothelial cells, the essayist indicated the distinguishing histological features between the endotheliomata on the one hand and angiosarcomata and certain varieties of spheroidal and squamous-cell carcinomata on the

other. He believed that a considerable number of the growths found in the breast and in the cervix uteri, which were described as spheroidal-cell carcinoma and squamous-cell carcinoma respectively, were in reality examples of lymphatic perithelioma. The cases to which he was referring were those in which masses of cells were present with a central degenerated material. It had been usually considered that this degenerated material had arisen from a necrosis of the central portion of a formerly completely solid mass of cells, but he pointed out that under such conditions there should be a gradation between the outermost and undegenerated cells and the central degenerated mass. On the contrary, in the cases under consideration there was a sharp differentiation between the cellular portion and the débris, and in addition a definite endothelial lining, such as one was accustomed to meet with in the ordinary blood-vessel or lymphatic, often bounded the proliferated cells on their internal aspect and completely shut them off from the central débris. He urged further that these cases were identical in histological appearance whether they were derived from the breast or the cervix and were best explained on the view that they were lymphatic peritheliomata.

The greatest difficulty in differentiation lay between the endotheliomata and those carcinomata containing the so-called Malpighian and the pure prickle cells. In examining the sections from cases in a certain hospital for a period of six years or more, he had found that about 10 per cent. of supposed breast cancers and the same number of uterine cancers should, on the ground of his own researches, be considered as endotheliomata. There was evidence that the endotheliomata were amongst the most malignant of new growths. On the other hand "parotid tumors" and certain tumors of the cerebral meninges showed that growths which were histologically identical with those that had been described might be non-malignant in respect of the fact that they did not tend to recur after removal. It was clear, therefore, that endotheliomata might be intensely malignant or non-malignant, and the important question at the present time, bearing in mind the amount of work that was being done on the subject of mouse cancer, was to determine in what class of growths this latter should be included. A recognition of the true character of mouse tumors was necessary for determining whether work on these growths was attacking the cancer question at its very heart, which would be the case if they were carcinomata, or whether it concerned a relatively uncommon form of new growth—namely, the endotheliomata. Moreover, supposing that the majority of mouse tumors were ultimately considered to be endotheliomata there remained the question as to whether they belonged to the intensely malignant or to the non-malignant variety.

THE MILK SUPPLY OF NEW YORK.

An interesting symposium on the milk supply of large cities was held at the Academy of Medicine two weeks ago, a report of which was published in the Medical Record for March 23. At the present day the proper supervision of the milk supply is recognized by all as being a matter of paramount importance, and all the best authorities are agreed that the public health boards should be allowed considerable power in dealing with the subject; it is interesting, however, to see the difference of opinion among the experts as to the direction this control should take. That it is possible to supply an extremely pure raw milk has been shown by the dairy farms certified by the Milk Commission of the County Medical Society. But the measures necessary to produce such a milk place it beyond the reach of the ordinary individual, for it is absolutely impossible to sell certified milk in New York for less than twelve cents a quart, and there is but little for sale under fifteen cents.

What, then, can be done? The answer to this must be governed largely by our knowledge as to the prevalence of diseases traceable to milk. So far as tuberculosis is concerned, the recent careful researches of Ostertag show that cows reacting to tuberculin, but presenting no clinical evidences of tuberculosis, rarely excrete tubercle bacilli in the milk. On the other hand, with cows showing manifest signs of, for example, tuberculosis of the lung, there is often an enormous excretion of tubercle bacilli in the feces, and these are readily carried into the milk. The clinical evidence as to the frequency of infection through milk must also be considered, and while most pathologists here are agreed that this mode of infection obtains in only a small percentage of cases, it nevertheless does quite certainly occur occasionally. One of the speakers at the meeting to which we have referred described an extensive outbreak of scarlet fever traced to infected milk in Boston, and the literature contains reports of a number of smaller epidemics thus originating. Epidemics of typhoid fever have quite often been caused by an infected milk supply, and now and then diphtheria infection has been carried in this way. On the whole, however, such occurrences are not very frequent. There still remain to be considered the large number of cases and deaths from diarrheal disease in infants. How many of these can fairly be charged to a high bacterial content of the milk? Dr. Harrington thought a large percentage should be so charged, but Dr. Holt, who has given special attention to this phase of the subject, thought that by far the larger percentage should be charged to unhygienic surroundings, bad air, improper clothing, excessive hot weather, and the improper modification of cow's milk, for in this city most infants receive heated milk in summer, so that the diarrheas due to raw milk have already been largely eliminated. The extensive researches of Park and Holt showed that pasteurized polluted milk did not give as good results as pure raw milk, and that the latter gave about equally good results when raw as when pasteurized.

In discussing the question of pasteurization several of the speakers expressed entire disbelief in the efficacy of so-called "commercial pasteurization." This consists in passing the milk through heated coils, the temperature usually being about 160° F., and the time of passage varying from 15 to 30 seconds. It was claimed that pasteurization, in order to be of benefit, should kill all the tubercle bacilli that might possibly be present. This would require

a heating of at least twenty minutes to 145°, and anything short of this would be incomplete and useless. A critical examination of all the data, however, tends to show that this view is hardly tenable. As was well pointed out by Park, an exposure of thirty seconds to 160° F. does kill a large percentage of non-spore bearing bacteria. In a series of experiments now being carried on with a "commercial" pasteurizer at the health department laboratory, neither typhoid nor diphtheria bacilli withstood this degree of heat. Furthermore, certain European observers have found that even tubercle bacilli are injured by this heat, for infected milk thus heated usually did not infect guinea-pigs in feeding experiments, but only when injected. It has been claimed that pasteurized milk when kept for twenty-four hours usually shows a higher bacterial content than unheated milk, because of heated milk being a better soil for growth of bacteria. Park's experiments showed that ordinary milk really heated for thirty seconds to 160° F., and then kept in the ice-box for twenty-four hours, has less than ten per cent. of the number of bacteria which would have been present if the milk had been unheated and kept under the same conditions.

Following largely on the researches of Spolverini, there has been considerable discussion as to the importance and the functions of the ferments found in milk. Raudnitz, probably the foremost authority on the chemistry of milk, believes that the presence of the ferments is to be looked upon as in the nature of an excretion and of no particular significance. In the suppression of tuberculosis, as developed by von Behring, one of the main points is the production of a tuberculosis-immune milk for infant feeding. Such a milk cannot be pasteurized without at least partially destroying the protective substances So far as the digestibility of raw and pasteurized milk is concerned, there is also still considerable difference of opinion.

Repeating the recommendations we made in a previous issue, we believe it would be feasible for the health authorities to license a considerable percentage of farms to supply raw milk, provided all the cattle were subjected to the tuberculin test twice a year and to a physical examination by a competent veterinarian every three months. The animals that react to tuberculin and others found diseased would have to be removed. Furthermore, such farms should be held very strictly to requirements as to cleanliness, cooling of milk, freedom from contagion, etc., violation of which would be punishable by the exclusion of the milk from the city or by compulsory thorough pasteurization. Of course, a large staff of inspectors would be necessary to see that the farmers lived up to these requirements. So far as the milk supplied by farmers unwilling or unable to comply with such restrictions is concerned, we believe that pasteurization under the supervision of the health authorities should be insisted on. In order to insure efficient pasteurization a maximum bacterial content and a minimum heating should be established. Furthermore, every bottle of pasteurized milk should be plainly so marked, and the degree of heat, length of exposure, and date of treatment should also be stated.

ENDURANCE AND DIET.

THE claim is always made by vegetarians—the sober-minded among them as well as the fanatics—that the man who eschews flesh food is "fitter" than the meat-eater, but there has not been much evidence of this beyond the statements of the former regarding their subjective feelings. The carnivore has maintained that this was no proof, for the Eddyite made the same claim while eating anything in sight and despising every hygienic law. As a matter of fact, however, we may remark in parenthesis, the member of the Church of Christ Scientist, while pretending to ignore the laws of health, is a pretty fair hygienist, and takes very good care of her body, as a rule—especially if she aspires to the rôle and emoluments of a "reader." Vegetarians, too—at least the professionals—are not neglectful of hygienic laws in addition to the practice of their peculiar tenet. They avoid not only meat but also all the stimulating or exciting products of the vegetable kingdom, such as spices, coffee, and alcohol, and are given to an open-air life, deep breathing, and sensible clothing. The meat eaters with whom they contrast themselves are, moreover, usually the intemperate of their class, the heavy eaters and those who fill themselves to repletion with animal food three times a day. Nearly everyone admits that excessive consumption of meat is injurious, and a comparison of the strict vegetarian with the intemperate meat eater is manifestly unfair. It is as inconclusive as to compare the total abstainer from alcohol with the drunkard, rather than with the temperate wine drinker.

A comparative test of the respective powers of endurance of meat eaters and vegetarians, which eliminated some, though not all, of the unfairness of such comparisons, was recently made by Professor Irving Fisher of Yale University (*Yale Medical Journal*, March, 1907). The results obtained were interesting and worthy of consideration. The tests of endurance were three in number: holding the arms horizontally, deep knee bending, and leg raising. The subjects of the test were divided into three groups: athletes accustomed to a high-proteid and full-flesh dietary, athletes accustomed to a low-proteid and non-flesh dietary, and sedentary persons accustomed to a low-proteid and non-flesh dietary. The vegetarians had, with few exceptions, abstained from flesh food for periods varying from 4 to 20 years, and some had never eaten meat. The flesh eaters had, with few exceptions, been accustomed to take meat two or three times daily, so that they could not be called temperate meat eaters, and the test was therefore not quite fair from the point of view of the advocates of a moderate flesh dietary. The results were all in favor of the vegetarians, as shown by the following table:

	Arm Holding		Deep Knee Bending		Leg Raising	
	No. of Persons	Average Record Minutes	No. of Persons	Average Record Times	No. of Persons	Average Record Times
Flesh eaters, athletes	15	10	9	383	9	279
Abstainers, athletes	10	39	16	927	6	288
Abstainers, sedentary	13	64	5	535	1	74

A study of this table, though demonstrating the superior endurance of the vegetarians, brings out

some curious facts. In the matter of leg raising, excluding the one sedentary abstainer, the superiority of the abstaining athletes over the meat eaters of the same class was slight, but in knee bending it was more marked, even the sedentary abstainers beating the meat-eating athletes. In the arm-holding contest, not only did the abstainers far outstrip the meat eaters, but the sedentary abstainers were nearly twice as capable as the athletes of their own diet class. Manifestly one must look to something else than the diet to account for this greater muscular endurance on the part of those of sedentary pursuits.

Professor Fisher's experiments are interesting and the results are suggestive; though they are not conclusive as to the comparative merits of total abstinence from meat and of *moderate* indulgence. The tests would also have been more satisfactory had he included among his subjects a group of sedentary meat eaters. We have seen that the sedentary abstainers were superior to the athletic abstainers in the arm-holding test, and it would be interesting to know whether they would also be superior to meat eaters of their own class. That they would win in a contest with immoderate (three meals a day) meat eaters we think probable, but that either they or the abstaining athletes would prove better in the matter of endurance than open-air lovers, of temperate habits, who eat meat in moderation, has not been demonstrated. Comparison between extremists is of interest, but it is of little value to the average man. It simply indicates that total abstinence is better than overindulgence in what is a poison when taken in excess, but which the experience of mankind has demonstrated is a life-sustaining food when eaten in moderation.

The Desmoid Test Again.

During the past year or so the merits and demerits of Sahli's so-called desmoid test for determining the functional efficiency of the stomach have been discussed with considerable thoroughness by workers in the field of gastrointestinal diseases. Sahli has in so many ways shown himself a reliable guide that it would be unwise to arrive at an unfavorable conclusion in regard to this method unless those criticising it had a good deal of evidence on their side, but it must be conceded that as the case now stands it appears that the desmoid test is not destined to occupy the important position in clinical diagnosis that its originator hoped for. Lewinski, writing on the subject in the *Münchener medizinische Wochenschrift* of February 26, 1907, suggests that, as the conditions under which the desmoid test and the ordinary test meal are carried out are so different, some of the contradictions between the results obtained by the two methods may be explained in this way. He endeavored to make a fairer series of observations by resorting to Schmidt's test diet and comparing the result of the desmoid test with the amount of connective tissue from the meal found undigested in the stool. Out of thirty-two comparative tests made in this way on different patients, conflicting results were obtained in fifteen, or nearly one-half the number. Several suggestions are made by the author to account for this discrepancy, among others that different specimens of catgut, owing to the mode of manufacture of the raw material, may easily vary in their resistance to digestion, and the still more important observation that tests of various sorts *in vitro* showed that catgut may be digested in intestinal juice or in gastric juice apparently free from peptic ferment. While it will be a disappointment if the ingenious and simple method, proposed by Sahli as a substitute for the test meal with its many disagreeable features, turns out to be unsuitable for ordinary use, there is much in favor of Lewinski's recommendation that information of a similar nature be sought for by examining the stools after placing the patient on Schmidt's régime in order to ascertain the ability of the stomach to digest the connective tissue of the chopped meat forming part of this diet.

Industrial Diseases.

In a communication to the *Lancet* of March 9, 1907, in reference to the relation of industrial diseases to the Workmen's Compensation Act, Dr. A. J. Greene points out that unless this class of affections is very limited in number employers will be compelled, in order to protect themselves against damage suits, to have all their workmen medically examined before they are engaged, and declares that such a course would lead to the rejection of many who are now able to earn good wages. The economic outcome would be that the rejected ones would perforce become objects of charity, while those accepted would be able to demand higher wages, as their labor would be at a premium. Prices would go up and foreign competition would be increased. Official inquiries have been made with reference to chronic carbon monoxide poisoning, pulmonary fibrosis and chronic pneumonia, miner's nystagmus, miner's knee, and cardiac dilatation. The author shows that the symptoms of some of these conditions are extremely indefinite, and that it might be very difficult to determine whether a lowered vitality in a given case was due to any one of the foregoing causes or to some error of living or vicious habit with which the occupation itself had absolutely nothing to do. Many diseases to which the name of some occupation is attached are by no means confined to those who follow that particular calling.

The Presence of the Meningococcus in the Circulating Blood.

It is only within recent years that the meningococcus has been definitely demonstrated in the circulating blood and the possibility of a hematogenous origin in cerebrospinal meningitis acknowledged. The number of cases is, however, still limited so that every additional demonstration is of value. In a report made by Marcovich in the *Wiener klinische Wochenschrift*, No. 44, 1906, mention is made of a case in which the ordinary clinical features of epidemic cerebrospinal meningitis were absent and the presence of a peculiar skin eruption led to a diagnosis of typhus fever. There was no increase of temperature and no stiffness in the neck. The patient died within a few days after being taken sick, and the autopsy revealed the presence of a purulent meningitis along the convexity and the base of the brain. The ventricles were quite empty and the cerebrospinal fluid clear. The case is of particular bacteriological interest, because the blood obtained from a vein showed the meningococcus of Weichselbaum in pure culture. It is probable, therefore, that in this instance a meningococcus sepsis was the primary lesion and this was followed by a localization of the infectious process in the meninges.

Dangers Associated with the Starvation Cure.

In certain forms of gastric ulcer, a so-called starvation cure has been largely employed without much thought as to its general effects aside from those on the local process. Reichmann, however, writing in the *Archiv für Verdauungskrankheiten,* Vol. 11, No. 2, states as the result of an extended experience that the method of treatment known by this name may be the cause of numerous complications. In the first place we have to deal with the results of the diminished nutrition, weakness, vertigo, disturbances of the heart, etc., which may be developed to such an extent that the treatment must be stopped for a time at least if not altogether. The writer has also noted in a number of instances the production of a suppurative parotitis which he believes can be ascribed to the increased number of pyogenic bacteria which collect in the oral cavity and the duct of Steno as the result of an insufficient cleansing of the mucous membrane by the act of chewing and of a diminished flow of saliva. In order to protect the patient against these serious complications the oral cavity and particularly the mucous membrane of the cheeks should be kept as clean as possible with appropriate antiseptic solutions, among which Reichmann has found a four per cent. solution of boric acid among the most satisfactory.

Cancer Parasites.

Although the ranks of those who regard the cancer question from the standpoint of parasitology have been growing rather thinner of late, there seems to be no doubt in the minds of the believers in this doctrine that ultimately it will prevail. Schüller is one of the most assertive of the parasitologists, and in a recent number of the *Berliner klinische Wochenschrift* (March 4, 1907) he announces the forthcoming publication of a book in which he has explained the methods to be employed for the demonstration of his particular microorganism. He believes that the active proliferation of the cells in carcinoma and sarcoma depends on the local stimulation caused by the intracellular parasites, and gives in his article drawings reproduced from photographs, and intended to show the action of the invading organisms in inciting division of the nuclei. He closes by expressing the conviction that it may be regarded as absolutely certain that the development and growth of carcinoma and sarcoma in the human body are dependent on the parasites he has discovered.

News of the Week.

How the Earnings of the "Journal" Should be Expended.—In his presidential address before the Medical Society of the State of New York, in January of this year, Dr. Joseph D. Bryant, president-elect of the American Medical Association, referring to the prospective profits of the *Journal,* said: "I am, however, clearly of the opinion that the net earnings of the *Journal* should be utilized for its betterment, and for the purpose of extending, when feasible, publication courtesies to such of those as contribute to its pages important and original articles. It should not be the policy of this Society, in my judgment, to accumulate worldly belongings, but instead to increase the wealth of good fellowship and professional advance, by a wise adjustment relating thereto, of its business management."

Resolutions Regarding the Milk Supply.—The Section on Public Health of the New York Academy of Medicine passed the following resolution at its meeting of March 12, and this resolution was adopted by the Academy at its meeting on March 21:

Resolved: (1) That the Section on Public Health of the New York Academy of Medicine does not believe in the necessity of the compulsory pasteurization of all of the milk supply of New York City, but recommends for the present to all those whose milk supply cannot be proven to be thoroughly inspected and wholesome, and mainly the milk destined for the feeding of infants unless it is "certified," to boil their milk when delivered in the morning for three minutes. (2) That the health of the City of New York demands a persistence in the policy of supervision of farms, dairies, and creameries, supervision of the milk during transit and on delivery in the city, and supervision at the points of distribution in the city to the consumer, whether the milk that is distributed has been pasteurized or not. (3) That local and State health authorities and the Bureau of Animal Industry of the United States Department of Agriculture should cooperate with milk producers to prevent the occurrence of communicable disease in cattle and their caretakers. (4) That the Section on Public Health recommends that the New York Academy of Medicine adopt the above resolutions, and that a copy be sent to the members of the Committee on Public Health of the Board of Aldermen, to the Committee of the New York State Legislature having under consideration the Reece bill, and to the medical and the lay press.

Police to Aid in Suppression of Noise.—As the result of an appeal from Mrs. Isaac L. Rice, president of the Society for the Suppression of Unnecessary Noises, Police Commissioner Bingham has issued an order instructing every captain and commanding officer in the greater city to have all unnecessary noises stopped in the neighborhood of hospitals. The order calls attention to the fact that in the summer time, when it is necessary to keep hospital windows open, loud and boisterous talk on the adjacent streets disturbs the patients. Street vendors of all kinds, including lusty youths who yell "uxtry!" and sell late editions of the newspapers, are among the worst offenders. The small boy and the tin can make a combination that racks the nerves of sick people. Patrolmen are directed to insist that these unnecessary noises stop, particularly near hospitals, and, when necessary, to make arrests and explain to the Magistrates the necessity for so doing. Embodied in the order are sections of the Penal Code and the city ordinances relating to noises.

The Fight Against Tuberculosis in Chicago.—Efforts of the Chicago Tuberculosis Institute this year to reduce the death rate from this disease in Chicago will require $25,000, according to the estimates of its officials. Plans of the Institute include the establishment of a dispensary and a day camp, a comprehensive investigation of conditions in homes, workshops, stores, schools, public conveyances, traveling exhibits, and lectures and conferences. A successful camp sanatorium for women and girls in early stages of tuberculosis is being maintained at Dunning, Illinois. It is known as Camp Norwood. It cost only $2,000 to establish it, and it accommodates twenty patients.

Emergency Hospital, Chicago.—The Iroquois Memorial Emergency Hospital Association has

made an offer to construct an emergency hospital at a cost of not less than $25,000, near the loop downtown, provided a site can be had, and if the maintenance of the institution is undertaken.

Chicago Medical Colleges to be Inspected.—Arrangements were completed at a meeting of the State Board of Health, held March 15, for the inspection annually of the medical colleges of Chicago and Cook county. To find out whether or not all the provisions under which these colleges operate under the State law are being observed, these examinations are to be held by the Board.

The Biological Station of the University of California, at La Jolla, a suburb of San Diego, promises soon to become one of the most thoroughly equipped institutions of the kind. By recent enactments of the State legislature and the city council, a park has been set aside to the use of the station, and money has been contributed for putting up a suitable building. Work of a high order has been carried on for several years, and furnishes a basis for further undertakings. The station has been located at this point on account of the great variety of sea-life found in the vicinity.

Mosquito Extermination in New Jersey.—The Jersey City Board of Health has under consideration plans for exterminating mosquitos in the Hackensack meadows by a system of drainage ditches twenty miles in length. The main trenches emptying into the Hackensack river will be thirty inches deep, varying from two to four feet in width. The lateral ditches will be ten inches wide. The ditches will be dug by means of an excavating machine, and it is estimated that the cost of the work will not exceed $2,500.

Dr. Hermann Grad has been appointed assistant surgeon of the Woman's Hospital of this city.

Dr. Charles F. Millar, chief surgeon at the Central Emergency Hospital of San Francisco, has resigned from the service on account of ill-health. He has been connected with the health department for the past seven years, and displayed remarkable ability at all times, but especially in the trying times following the earthquake of a year ago.

Measles in the Navy.—An epidemic of measles has broken out on the battleship *Georgia*, now at Hampton Roads. A month ago about thirty of the seamen on the vessel suffered from the disease, and for a time it seemed that the epidemic had subsided, but new cases are occurring again, and orders for the future movements of the ship have been cancelled.

Alleged Attacks on Insane Patients.—Six former or present attendants of the State Hospital for the Insane in Cleveland have been indicted by the Grand Jury on the charge of having used undue violence toward patients in their care. One of these attendants has nine separate indictments against him.

To Prevent Seasickness.—The value of Dr. Schlick's gyroscopic apparatus, intended to reduce the motion of vessels at sea, has been attested by Sir William H. White, F.R.S., a British authority in maritime construction. At a meeting of the Institution of Naval Architects he said that from personal observation he could certify to the remarkable steadying effect on a vessel of the gyroscopic apparatus. In all cases its effect was to extinguish the rolling motion of the ship almost immediately. The vessel on which he had observed the working of the apparatus was practically deprived by it of rolling motion as she lay broadside to the sea. Sir William expressed the opinion that the apparatus would have great utility attached to Channel and coasting passenger steamers. Gyroscopes could also be designed which would have a steadying effect on the largest ocean liners.

Dr. C. E. Ruth, for many years Professor of Surgery in the Keokuk Medical College was guest of honor at a dinner given in Burlington, Ia., by his professional friends as a farewell on the occasion of Dr. Ruth's impending removal to Colorado.

McGill University Medical School.—The medical course at McGill University, Montreal, has been lengthened by a year, and five years of study are now requisite to obtain the degree of M.D. from that faculty.

Standardized Sausage.—The *Lancet*, which has already made suggestions in regard to the standardization of Christmas puddings and the height of the steps in staircases, now advocates the adoption of a "legal authoritative definition of a sausage." It is admitted that sausages, as a whole, are nowadays usually composed of wholesome ingredients, though this useful comestible is a common subject of jest, since it is so often regarded as a convenient vehicle for materials which when undisguised certainly do not appeal to us as being suitable or even wholesome for purposes of food. One particular abuse to which the *Lancet* objects is the addition of bread or broken waste biscuit with the object of cheapening the product. This is a palpable fraud, as the sausage is looked upon as a meaty and not a farinaceous food, and, moreover, the price is approximately that of meat.

Prof. Behring Recovered.—Cable despatches announce that von Behring, who was lately said to have been suffering from a mental breakdown, has entirely recovered again and will not be obliged to give up work for the present.

Paris Morgue Closed to Visitors.—The municipal authorities have decided that the Paris morgue is no longer to be open to sightseers, and that in future no persons shall be admitted to inspect the bodies unless they can convince the registrar that they come for the purpose of identifying a corpse.

Absinthe to be Tabooed in France.—The commission on hygiene of the French Chamber of Deputies has reported in favor of the total prohibition of the distillation, importation, traffic in, and sale of absinthe. The commission proposes that the manufacture of absinthe shall cease in one year, and that after two years its sale shall become illegal.

Smallpox.—The sporadic occurrence of a few cases of smallpox in Paris and various other French cities is said to have caused much popular apprehension in Paris, and great numbers of people of all classes are being vaccinated. The Parisian cases are supposed to have been imported from Tunis and Tripoli, and were of a severe type. The transatlantic liner *Pennsylvania* was detained at Quarantine last week owing to the presence on board of a case of the disease. The patient, a child, was removed to the Brooklyn Hospital and the steamer was fumigated. Those of the passengers who had been more directly exposed were sent to Hoffman Island for observation.

Prof. Karl Hess of Würzburg, a prominent ophthalmologist, sails for this country on April 9 to give lectures on subjects relating to his specialty in various cities.

Hospital Appropriations.—The Legislature of California recently made the following appropriations: For improvements at the Southern California State Hospital, $45,000; for improvements at the Home for the Care of Feeble-minded Children, $100,000; for the State Hospital at Napa, $63,000; for additional building at the Stockton State Hospital, $78,000.

Bequests to Public Institutions.—By the will of the late Francis P. Furnald, Columbia University will inherit $300,000 on the death of the wife of the testator, Mrs. Sarah E. Furnald, to whom all his estate is left in trust for her life. The trustees of the Presbyterian Hospital will receive on Mrs. Furnald's death $100,000, to be spent in maintaining beds for worthy applicants, and the Bethany Day Nursery and the Manhattan Working Girls' Society will also receive $100,000 each to create funds in memory of Mrs. Furnald.

Bequests to Hospitals.—By the will of the late Samuel Elkin of Philadelphia the sum of $5,000 is bequeathed to the Jewish Hospital in the name of his mother, Eve Elkin; $3,000 to the Jewish Foster Home, also in the name of his mother; $3,000 to the operating department of Jefferson Hospital; $5,000 to the Episcopal Hospital; $5,000 to the Presbyterian Hospital; $5,000 to St. Agnes' Hospital, and $10,000 to the Home for Crippled Children.

Sanatorium Gabriels.—Those in charge of this institution, which is intended for the care of patients in the earlier stage of tuberculosis, state that it is handicapped seriously by lack of funds. The sanatorium is situated at Paul Smith's in the Adirondacks, and was begun in 1895. The sum of $135,000 has been spent on buildings and equipment and $50,000 has been expended on interest. The debt is now $65,000, of which $18,461 must be met before May 24.

Roane County (Tenn.) Medical Association.—At the last meeting of this society, officers for the ensuing year were elected as follows: *President,* Dr. J. J. Waller of Oliver Springs; *Vice-President,* Dr. John Roberts of Kingston; *Secretary,* Dr. G. C. G. Givan of Harriman, reelected; *Treasurer,* Dr. C. W. Green of Harriman, reelected.

Western Massachusetts Homeopathic Association.—At the annual meeting of this society held in Springfield on March 21, officers were elected as follows for the ensuing year: *President,* Dr. H. C. Cheney of Palmer; *First Vice-President,* Dr. E. W. Capen of Monson; *Second Vice-President,* Dr. S. A. Lewis of Springfield; *Secretary and Treasurer,* Dr. James B. Comins of Springfield.

Saline County (Ark.) Medical Society.—The following officers were elected at a recent meeting of this organization held in Benton: *President,* Dr. J. W. Melton; *Vice-President,* Dr. Charles Prickett; *Secretary and Treasurer,* Dr. Charles Steed.

Massachusetts General Hospital Alumni Association.—More than 160 members of this association were present at the second annual banquet held in Boston on March 16. The officers elected for the ensuing year are: *President,* Dr. Ellery Stedman of Boston; *Vice-Presidents,* Dr. Dudley P. Allen of Cleveland, Dr. John Brannan of New York, and Dr. W. N. Swift of New Bedford; *Secretary,* Dr. F. A. Washburn, Jr., reelected.

Professor von Bergmann of Berlin, the well-known German surgeon, died of appendicitis at Wiesbaden on Monday of this week. He was operated upon the day before his death. Last summer he presided over a series of three meetings of the Berlin Medical Society devoted to a discussion of appendicitis, and voiced an emphatic opinion in favor of early operation, as a necessary preliminary to which was early diagnosis. He was born in Livonia, December 16, 1836, and studied medicine at the Universities of Dorpat, Berlin, and Vienna. During the Austro-Prussian war of 1866 Prof. von Bergmann was at the head of the military hospital at Koeniginhoff, Bohemia, and during the Franco-Prussian war he directed the military hospitals at Mannheim and at Carlsruhe. He was appointed professor of surgery at Dorpat in 1875 and remained there until the outbreak of the Turko-Russian war, when he was attached to the Russian army of the Danube as consulting surgeon. In 1878 he became chief surgeon of the hospital at Würzburg and was called in 1882 to succeed Prof. von Langenbeck in the chair of surgery at the University of Berlin and in the direction of the surgical clinic of that city. He operated upon the Emperor, Frederick III., and maintained, in opposition to Morell Mackenzie and Virchow, that the growth was cancerous.

In Memory of Dr. Fowler.—On Easter Sunday the Society of Ex-Internes of the Seney Hospital will unveil a bronze tablet in memory of the late Dr. George R. Fowler. The tablet bears the following inscription, and will be placed in the main hall of the hospital: "In memory of Dr. George Ryerson Fowler, surgeon in the Methodist Episcopal Hospital, 1887-1906. This tablet is erected by the Society of Ex-Internes in grateful recognition of him as teacher, counsellor, friend."

Obituary Notes.—Dr. John H. Brinton died at Philadelphia on March 18, at the age of seventy-five years. He was graduated from Jefferson Medical College in the class of 1852, and subsequently spent a year in foreign study. In 1853 he gave a course of demonstrations in operative surgery at the anatomical rooms in College avenue. In 1859 he was elected surgeon to St. Joseph's Hospital, and he was consulting surgeon to this hospital at the time of his death. In 1861 he was commissioned by President Lincoln brigade-surgeon of Volunteers, and he was assigned to the office of the Medical Director of the District of Cairo, where he assumed the duties of Acting Medical Director on the staff of General Grant. He subsequently acted as Medical Director of the Army of the Tennessee, with the rank of Major. In 1862 Dr. Brinton was assigned by Surgeon-General Hammond to the office of the Surgeon-General, where he was ordered to prepare a "Surgical History of the Rebellion." A short time later he was assigned to the founding of the Army Medical Museum. At a later period he was assigned to duty in the Department of Missouri, and he served as Medical Director in the field during the Missouri campaign. Still later he served as Superintendent and Director of General Hospitals at Nashville, and afterward as Acting Medical Director of the Army of the Cumberland. On his return to Philadelphia at the close of the war Dr. Brinton was appointed lecturer on operative surgery in the summer course at Jefferson Medical College, and a few years later was made one of the surgeons to the Philadelphia Hospital. In 1877 he was elected surgeon to Jefferson Hospital, and in 1882 Professor

of Surgery and of Clinical Surgery in Jefferson Medical College. This last position he resigned a year ago when he was elected Emeritus Professor.

Major William J. Wakeman, Surgeon U.S.A., died on March 20 at Fort Monroe, Va. He was born in Connecticut in 1845. After receiving his degrees in arts and medicine from Yale University he was made assistant surgeon in the army in 1882. He served through the Spanish war as surgeon of Volunteers, and in 1900 received the rank of Major.

Dr. Rodney C. F. Combes of Brooklyn died on March 18 of typhoid fever which he had contracted while on a trip through Mexico. He was born in East Rockaway, L. I., fifty-one years ago.

Dr. William B. Thomas of Ionia, Mich., died on March 5, at the age of seventy-six years. He was born in Monroe County, N. Y., and after being graduated from Genesee College, the University of Buffalo, and the University of Michigan, he began practice in Ionia in 1859. He served in the Civil War, and in 1866 was appointed United States Marshal. In 1871 he was Superintendent of Schools of Ionia county, and in the same year was admitted to the Bar.

Dr. James Utley of Newton, Mass., died on March 15 at the age of sixty-eight years. He was born in Chatham, N. Y., and received his medical education in the Bowdoin Medical College and the Hahnemann Medical College of Philadelphia. He settled in Taunton early in the sixties, but some years later removed to Newton, where he had since resided.

Dr. J. J. Hopkins of Upper Tract, W. Va., died suddenly on March 14, at the age of sixty-four years. He was graduated from the New York University Medical College in 1874.

Dr. W. J. Sneed of Nashville, Tenn., died on March 17, at the age of seventy-two years. He was born in Brentwood, Tenn., and was graduated in medicine from the Vanderbilt Medical College, in which institution he was afterward professor of anatomy. He served as surgeon in the Confederate Army and had practised in Nashville for over forty years.

Dr. Albert M. Warner of Waukesha, Wis., died on March 15, at the age of ninety-one years. He was born in Andover, Vt., and was graduated from the Vermont Medical College at Woodstock in 1842. After practising a short time in New York, he removing to Waukesha, where he had resided ever since.

Dr. J. L. Edgar of Clearwater, Fla., died suddenly of apoplexy on March 13. He was a native of Missouri, and had practised in Florida for over twenty-five years.

Dr. David H. Shenk died at Lancaster, Pa., on March 11, at the age of fifty-five years. He was graduated from Long Island College Hospital in the class of 1874.

Dr. Leander P. Jones of Greenwich, Conn., died on March 18 at Bellaire, Fla. Dr. Jones was born in 1845 in southern Vermont. He was graduated in 1874 from the New York College of Homeopathy. After practising for a time in Hartford, he went to Greenwich in 1876. In 1894 he was elected State Senator, and at the close of his term was asked to take the nomination for Governor, but declined. He was for many years fleet surgeon of the Indian Harbor Yacht Club, and had just been reappointed to that office. He had held numerous public offices, and at the time of his death he was medical examiner for Greenwich.

Dr. Robert Stewart MacGregor of this city died of pneumonia on March 23, at the age of thirty-eight years. Dr. MacGregor was born in St. Andrews, Province of Quebec. At an early age he moved to this State. In 1894 he was graduated with honors from Brown University, and three years later he finished the medical course at New York University. Since that time he has practised medicine in this city with the exception of one year which he spent in a hospital at Yonkers.

Obituary.

GEORGE G. WHEELOCK, M.D.

NEW YORK.

Dr. George G. Wheelock of this city died on March 22, at the age of sixty-eight years. He was born in Boston in 1838, and took his bachelor's degree at Harvard College in 1860, and his master's degree in 1864. In that year he also took the degree of Doctor of Medicine at the College of Physicians and Surgeons of this city. He entered the Government medical military service, and was for a year in charge of the General Hospital at Savannah, Ga. He later served as house surgeon in the New York Hospital, and, after some time spent in study abroad, began practice in New York. He soon received the position of Assistant Demonstrator of Anatomy and Lecturer on Physical Diagnosis in the College of Physicians and Surgeons, becoming later a Trustee of the college, and Registrar of its Board of Trustees, and serving for many years as Treasurer of the Association of the Alumni. He was also appointed attending physician to St. Luke's Hospital, and to the Nursery and Child's Hospital. In 1891 Dr. Wheelock was elected a Trustee of Columbia, and became a manager of the Vanderbilt Clinic and of the Sloane Maternity Hospital, all of which offices he held at his death, being President of the last-named institution. Dr. Wheelock retired from the practice of medicine in 1891, and since then had given his time to the service of the various public works in which he was interested.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

HUMAN AND BOVINE TUBERCULOSIS—TROPICAL SANITATION—CEREBROSPINAL FEVER—A CLERIC DENOUNCES ROBBING THE DOCTOR—OBITUARY.

London, March 8, 1907.

At the Medico-Chirurgical on the 26th ult. Dr. Nathan Raw read a paper on Human and Bovine Tuberculosis, having special reference to treatment by corresponding varieties of tuberculin. He held that infection of the human body may be by either bacillus, the two being varieties of the same species, but giving rise, according to the method of infection, to quite different and distinct lesions. The cultural differences were sufficient, when typical, to differentiate them, but the microscopic appearances were not. Basing his conclusions on 4,000 cases of phthisis, including 700 post-mortem examinations as well as on animal inoculation, Dr. Raw divided the lesions in the human species into two groups: (1) Lesions caused by the T. B., *typus humanus;* phthisis pulmonalis, secondary intestinal ulceration, tuberculous laryngitis; (2) caused by the *typus bovinus* (conveyed by meat, milk, etc., or by direct infection), acute miliary tuberculosis, primary intestinal and mesenteric disease (tabes, peritonitis, pelvic tubercle), tuberculous lymphatic glands, tuberculous joints and bones, lupus, tuberculous meningitis and tuberculous ulcerations of the cornea. Human and bovine tuberculosis were antagonistic and one could confer immunity from the other. Dr. Raw had had a new tuberculin prepared based on these observations.

Dr. David Lawson remarked on the rarity of surgical

tuberculosis in pulmonary phthisis. Out of 600 or 700 consecutive cases none had lupus, only three bone disease and only five gland affection. The frequency of miliary tuberculosis as a termination of phthisis required explanation. There were some good results in phthisis from T. R. tuberculin as checked by the opsonic index, though not so striking as in surgical tuberculosis.

Mr. J. P. Lord asked whether the two groups could be distinguished in milk.

Dr. C. Calvert said the Royal Commission had reported both bacilli found in cervical glands. He thought the two were varieties—not types.

Dr. Tooth inquired as to the precautions which had been adopted in regard to injections.

Dr. Sandwith said all forms of tuberculosis were common in Egypt except meningitis. He found injections gave bad results in surgical cases. He had not seen lupus in a phthisical case. The women in Egypt suckled their children even for two years and all other milk was generally boiled and tubercle among cattle was rare. Nevertheless tuberculosis was frequent.

Professor Ronald Ross gave a lecture last Friday at the Sanitary Institute on "Points of Interest Connected with Tropical Sanitation." The Duke of Northumberland, president, paid a well-merited tribute to the indefatigable labors of Dr. Ross in the field of tropical medicine, and at the close proposed a vote of thanks to the professor for his instructive lecture. Dr. Ross showed a number of lantern slides to illustrate the history and progress of sleeping sickness, yellow fever and malaria, and said we now know as much about the anatomy of the tsetse fly, which carries the sleeping sickness parasite, as we do of the anatomy of the human body. It was not possible to get rid of the larvæ of the tsetse fly, so the only way to prevent the spread of the disease is to cure it in the patients. It is depopulating whole districts in Africa and many almost despair of combating it. Quarantining trade routes is one of the latest proposals. The lecturer then gave an account of the discovery that yellow fever is caused by the bite of the tiger mosquito, but the parasite it introduces has not yet been discovered. Dealing with malaria, he insisted on the importance of draining the soil, and referred to the effort about to be made to clear the valleys of Greece of this devastating disease.

I have received from the County Council a copy of an order making cerebrospinal fever notifiable in the administrative county of London for six months from Tuesday next. The council has also sent with the notice extracts from a memorandum dated July, 1905, by Mr. Power, M.O.H. of the Local Government Board. This board has issued a report by Dr. M. H. Gordon, dealing with the micrococcus especially in reference to its identification in the upper respiratory tract. He finds the agglutination test of little value for distinguishing the meningococcus from normal cocci of the mouth and throat.

The Surrey Medical Officers of Health held a meeting last Friday to discuss preventive measures. Cases have been reported in various districts, but some are probably not cerebrospinal. One or two have occurred in the suburbs of London; yesterday an inquest on a child resulted in a verdict that death was due to the disease. In Ireland and Scotland the epidemic has continued.

The clergy are generally so little appreciative of the profession that a recent word by Father Vaughn deserves notice. He has been giving a series of sermons on the "Sins of Society," which he expressly directs to the "smart set." Last Sunday he addressed them on Truth, telling them that as Pilate had no place for it in practical politics, so it was in their "grab for riches, push for place, and rush for honors." To-day, he said, men and women did not pause to reckon with truth but indulged in forms of speech which "were lies as black as the 'father of lies' himself." For instance, society women made themselves out poor when it suited them, as in one case under his notice when a famous oculist had been robbed of his fee for an operation by a pretense of poverty. Now that woman, said the preacher, not only defrauded the oculist but she also defrauded some poor sister of a free operation, because there was a limit to the number of cases which, even one of the most generous class of men, physicians and surgeons, could undertake without fee.

Dr. Allan Macfadyen died on Friday last at the early age of 46. Educated at Edinburgh University, he afterwards studied in London, Berne, and Munich. From 1889 to 1892 he held the Sanitary Research Scholarship founded by the Grocer's Company. He was connected later with the Jenner Institute (now the Lister), and was Professor of Physiology at the Royal institution. His bacteriological work is well known. To the Local Government Board Reports, 1889, he contributed an important paper on the "Chemical Action of Bacteria on Albumins and Peptones." A number of papers from his pen detail his researches as to the possibility of immunizing animals against typhoid, cholera, plague, and other diseases, were regarded as of high value, and it seems sad that he should not have lived to complete his work. It would require a bacteriologist to do justice to his investigations.

Lt.-Col. G. M. McKee of the Indian Medical Service died on the 27th ult., aged 52. He entered as assistant surgeon in 1880 to the 83rd light infantry, served in the Burmese Expedition, 1885-7, and obtained the medal and clasp. He became Lt.-Col. in October, 1900.

Lt.-Col. E. Fitz-Stubbs, late Army Medical Service, died on the 28th ult., at the age of 60. He entered the army in 1871 and retired in 1896. He had the Ashunti medal (1873-4) and the Egyptian medal and bronze star (1882).

A HEALTHFUL SPORT.

To the Editor of the Medical Record:

Sir:—Rifle shooting as a means of relaxation does not receive the attention it should. It trains the eye to see accurately, the mind to judge correctly, and exercises the powers of coordination, while the strict attention it requires takes the mind clear of business cares and all the other worries and irritations of modern life. It is the sport par excellence for the neurasthenic, for he is obliged to forget himself, and introspection for the time becomes impossible when every faculty is centered on a target maybe five hundred yards away.

While it can be indulged in during the winter or in bad weather in some indoor gallery, its perfection as a sport and change for the busy professional man or merchant is found out on the range under the blue sky, where fresh air, good company, and attention to the business in hand cause all cares to "fold their tents like the Arabs and silently steal away." Add to these advantages the fact that it is in itself an act of patriotism, qualifying a man to fulfill one of the highest duties of citizenship, the defense of his country in time of need.

The time was when the country was new that we were a nation of riflemen, but that is no longer the case, and special efforts must now be made to have a sufficient supply of marksmen. Therefore, every man should lend his encouragement to this sport which is clean, healthful, and patriotic. You or I may feel that we never would be called upon to use that skill directly; but by example and support we may excite enthusiasm in others and use what skill we may obtain in helping to train others.

In a short time there will be scarcely a town of any considerable size which will not have a branch of the National Rifle Association. The United States Government is assisting these clubs in every way, and if the physicians of the country would take an active part they would derive great physical benefit themselves, do their duty by their country, and help make popular a sport which all could take part in, as it does not require severe physical exertion, nor does it, like other field sports, tempt its devotees to overtax their strength.

Long range shooting especially cultivates the powers of observation, mathematical reasoning, and logical deduction to a degree unknown to any other sport, while, at the same time, it is free from envy, spite, and the littleness of many other forms of personal competition. Many doctors realize this, and a very large proportion of the expert shots of this country are doctors—notably Dr. W. G. Hudson, to whose work in perfecting the modern high power bullet the United States Government owes a large debt of gratitude.

William C. Wood, M.D.

Gloversville, N. Y.

SULPHATE OF COPPER IN TYPHOID FEVER.

To the Editor of the Medical Record:

Sir:—Hare says in his Practice of Medicine: "Very recently it has been shown in the United States Government Laboratories at Washington, and in the City Laboratory at Philadelphia, that so small an amount of sulphate of copper as 1:1,000,000 or even 1:4,000,000, will destroy the typhoid bacillus in a few hours." When so high an authority makes such a statement it may well give us pause. If this attenuated dilution (almost Hahnemannian) will destroy the bacillus typhosus in tanks and reservoirs, why not within the human body? The proportion of 1:1,000,000 is approximately one grain to sixteen gallons of water. The average human body contains perhaps sixteen gallons water. To immunize the average person from typhoid fever it is therefore necessary to incorporate with it one grain of sulphate of copper. The salts of copper being diffusible substances quickly enter the blood and are eliminated by the liver, intestinal canal, salivary glands,

and kidneys. In the blood, as is the case with other metallic poisons, copper probably exists in the form of an albuminate in close relation with the red blood globules. It would seem that copper in any form is fatal to the typhoid germs. How it acts is not known. It has also been stated that if water containing typhoid bacilli is placed in burnished copper vessels for a few hours most of the typhoid germs are destroyed.

If our premise is correct the conclusion follows: Given one grain of sulphate of copper, say every four hours for possibly three days, all the typhoid germs will have been destroyed and the disease aborted. If given after necrotic changes have taken place in the intestinal glands, convalescence would be delayed until sufficient time for repair, perhaps one week, or at most ten days or a fortnight.

When one has a case of typhoid fever, let him follow these suggestions. It will not interfere with other treatment, which it may be well to add should not be neglected —at least not for the present. J. L. GILBERT, M.D.

KENDALLVILLE, IND.

Progress of Medical Science.

New York Medical Journal, March 16, 1907.

General Infection by the Colon Bacillus with Rapidly Fatal Septicemia and Hemoglobinemia.—The patient of A. D. Blackader and B. D. Gillies was a young woman of twenty-seven years, apparently in good condition, who was stricken down and died within forty-eight hours, developing an extreme hemolysis before death. There had evidently been an abortion between the second and third months of pregnancy and this had been followed by the usual toxic symptoms, which in turn were succeeded by a colon bacillus infection of the uterus, as shown by smears and cultures. Later severe septicemia developed and finally a rapid destruction of the blood cells. A full history is given with autopsy findings. The authors consider that the rapid hemolysis is the most interesting feature in the case, and they refer to the literature of the special lysins, the products of various bacteria, such as the *B. pyocyaneus, B. typhosus, B. coli communis, B. Staphylococcus albus*, and *aureus* and *Streptococcus pyogenes*. The development of these lysins is in the main extrabacillary. It begins on the second or third day and increases rapidly to a maximum on the sixth or seventh, after which it slowly decreases. The authors quote freely from Abbott with reference to this class of substances. So far as they know, no previous case on record has brought to light any such severe grade of hemoglobinemia.

Trachoma, Clinically and Socially Considered.—A general description of the disease is given by H. F. Hansel, who also alludes to the national regulations bearing on the subject. The article traverses familiar ground and nothing new is brought out. The author believes that immigrants who have reached the cicatricial stage of the malady, with eyes otherwise in good condition, may be allowed to land.

Rhinoscleroma Treated with the X-Ray.—After a brief allusion to the nature of the disease and its geographical distribution, M. J. Ballin relates one personal case occurring in a Russian woman of fifty-three years. Photographs are shown in the paper by which the progress of the case can be traced. The noteworthy features of the case are: first, its long duration, viz. sixteen years; second, the complete freedom of the larynx; third, the extremely large size of the nasal organ, and fourth, the surprisingly good effect of the *x*-rays in treatment. At the time of the report the case was not absolutely cured, but a vast improvement had been made, although there was some obstruction inside the nares. Removal of pieces of affected tissue to allow of a greater air space are generally followed by increased activity of the pathological process. It is hoped by the author that the use of very small tubes for the *x*-ray within the nose will result in a full restoration of their patency, or at least lead to satisfactory cicatrization. It is thought that the reduction of size of the nose has been due not to a breaking down of the tissue, but to a gradual absorption brought about by some chemical change.

The Significance of Bladder Symptoms in Relation to Some Spinal Cord Lesions.—Five cases are detailed by J. B. Squier, who speaks of the necessity for closer discrimination between urinary symptoms arising from degenerative changes in the motor or sensory centers in the cord and those due wholly to organic conditions in the bladder and its adnexa. Concerning the bladder symptoms in tabes the author says that it is of the utmost importance to seek out and treat, if they be present, any lesions of the urethra which may add peripheral irritation to the already degenerated cord centers. The treatment of vesical conditions due to spinal cord lesions is more or less identical to that of the organic local disease by which they are similarly produced. The spasm of the irritable stricture can be relieved by the passage of a sound, and in like manner the vesical spasm of tabes may be relieved by the same procedure. The treatment of these cases frequently gives results far beyond that which one would be led to expect, in consideration of their causative factor. The utmost of persistence and perseverance is required, and nowhere in the realm of medicine is the carrying out of the details of treatment more necessary. A tabetic bladder should never be allowed to become overdistended. If it becomes necessary to place the catheter in the patient's hands the most rigorous instruction in the technique of aseptic catheterization is imperative. Trophic disturbances are common to the disease, and on this account the patients are especially prone to infection, and a tabetic bladder once infected is no easy matter to restore to a state of asepsis. Further, the smallest source of irritation should not be overlooked. Sometimes the mere division of an abnormally small meatus will do much towards relief of a vesical spasm. Mitchell, Frenkel, and others have accomplished considerable for the ataxia of tabetic patients by motor reeducation. In like manner a certain amount can be gained in relieving the weakened viscus by educating the abdominal muscles to aid the vesical detrusor. Of the drugs, belladonna administered internally is the most efficient to relax vesical spasm. For toning up the bladder and preventing inflammation, solutions of silver nitrate act better than the newer silver salts.

Journal of the American Medical Association, March 23, 1907.

Simple Ulcer of the Bladder.—G. Walker gives a report of two personal observations of this comparatively infrequent condition, which he defines as a single non-inflammatory ulcer of the mucous membrane of the bladder, occasionally penetrating the entire wall, and due probably to local disturbance in, or complete blocking of the terminal or by an interference with the trophic nerves, and never produced by infection of the bladder, though in its second and third stages it becomes infected with the ordinary pyogenic organisms. Two types are recognized: the simple chronic form leading to cystitis, and the acute perforating ulcer. The early symptoms of the chronic type are those of irritation; increased frequency of micturition, scalding, pain, etc., and later cystitis with aggravation of all the symptoms, finally, bladder paresis and the patient, unless relieved by operation, succumbs to exhaustion or ascending infection. In case of the acute perforating ulcer there are no symptoms whatever until perforation occurs. In the earlier stages the cystoscope affords the only means of diagnosis, and shows a simple ulcer with cleancut and slightly indurated edges surrounded by normal mucosa. It is distinguished from tuberculous ulcer by its clean, not undermined edges, the appearance of its base, the absence of surrounding tubercle, and of tuberculosis elsewhere. Only in this early stage can it be distinguished from the ulceration of the various forms of cystitis, and Walker believes that many cases of diagnosed healed tuberculosis cystitis were primarily this disease. The prognosis of simple ulcer in the early stage is good if proper treatment is given. In the second stage, when lime salts have been deposited and the ulcerations are exaggerated, curetting and drainage will generally effect a cure. In the third stage, when there is great interstitial change, the prognosis is grave, and the acute perforating ulcer is usually fatal, practically always so when the peritoneum is involved. One very early recognized case is reported by Harrison, in which the patient was cured by operation. Silver nitrate irrigations, from 1 to 10,000 up to 1 to 5,000, every second day will usually cure in the first stage. In the second stage, curetting and cauterization with prolonged suprapubic drainage are generally necessary. In the third stage, drainage, irrigation, and gradual bladder distention are all that can be done.

The Nasal Accessory Sinus and Eye Diseases.—F. E. Brawley calls attention to what he considers a practically unrecognized condition, rarely attributed to the nose and almost always to the eyes, and the fact that glasses will sometimes give temporary relief tends to confirm the error. The origin of the trouble generally dates back to an attack of grip or a hard cold, and the

headache when it first appears is often unilateral, though later becoming general. It occurs both by night and day, often beginning and ending at regular hours. During the attacks the use of the eyes is almost impossible, as it intensifies the symptoms; insufficiency, both of accommodation and convergence, is usual, and distant vision may be reduced. There is often unilateral lacrymation with local pain and swelling about the eyes. Stooping over especially aggravates it, and it is affected by jarring, circulatory disturbances of any kind, excesses in eating, etc. As a rule, there is no history of nasal disease. A close examination will reveal a swollen, boggy turbinal or one so closely applied to the lateral nasal wall as to press on the hiatus semilunaris and to interfere with the interchange of air and exit of normal secretions from the frontal and anterior ethmoidal cells. If the use of suprarenalin and cocaine to the middle turbinal and infundibulum relieves the attack, a resection of the hypertrophied anterior end of the middle turbinal is indicated to restore normal conditions of air interchange and exit of secretions. The point specially emphasized in his paper is the absence of all definite nasal symptoms and the apparently normal nose. There may be more serious conditions, however, such as acute suppuration of the sinus producing these symptoms. It is in the milder non-suppurative case that the real cause of the condition is likely to be overlooked.

Eyestrain as the Cause of Chronic Headache.—Basing himself on his records of nearly 1,300 eye examinations, S. W. S. Toms claims that ninety per cent. of all those suffering from reflex or neuralgic headache have ocular defects. Over six hundred of the patients examined were altogether unaware of their defect. Fully half the cases were of only slight refractive errors or muscular imbalance, and it is in these cases in which ciliary spasm is the direct factor in causing headache in persons whose occupation calls for near vision, that accommodative asthenopia results. While there were occasional complications, only five per cent. of the patients had discoverable organic lesions that possibly intensified or were partly to blame for the head pain. Of those who were relieved of their headaches seventy-five per cent. had no other treatment than properly adjusted glasses or appropriate treatment for their muscular anomalies. The types most frequently met are the occipito-cervical, fronto-temporal and the hemicranias. There is no apparent relation between the severity of the headache and the degree of the ocular defect, and nothing especially characteristic except, perhaps, the patient's non-suspicion of the cause. Sickness or health impairment may be the first inciting factor in some patient with considerable ocular defects which gave no trouble before. In this connection, the author mentions as an ocular condition that does not receive the attention it deserves in young subjects, subnormal accommodation, or premature presbyopia, which may be the cause of alarming symptoms of headache and insomnia. Such patients often have a very acute vision for distance, with a slight muscular trouble of exophoria or esophoria, which is a misleading condition. They refuse all distance lenses or prisms, but find immediate relief when a presbyopia correction is made.

Examination of Students' Eyes.—W. C. Posey and R. T. McKenzie describe the methods and results of the examination of the eyes of 883 students of the University of Pennsylvania during the college year of 1905-06. So far as known, the University of Pennsylvania is the only degree-conferring institution in which such examinations are systematically made. Of the total number examined, 640 were students in the college department, 108 in the medical, 81 in the dental, 51 in the law, and 3 in the veterinary department. Of this total 14.70 were found myopic, the remainder being either hypermetropic or emmetropic. As regards the evidence of the influence of age and study, it is stated that among over 600 students in the two lower classes, 87.25 per cent. were hypermetropic and 12.75 per cent. myopic; while of 261 in the upper classes, 80.25 per cent. were hypermetropic and 19.75 per cent. were myopic. Five per cent. more of myopia was found in the professional departments in scholars of similar age than in the college department, which is accounted for by the larger number in the former from the rural districts, where the care of the eye is more apt to be neglected. The average age of all students was 21.4 years, and the statistics showed an increase of about 2.5 per cent. of myopia for each of the four years of college life. Of the students examined, 609 had full visual acuity of both eyes, 94 had it in but one eye, while 180 had subnormal vision in both eyes. These latter were decidedly at a disadvantage in certain forms of classroom work, irrespective of effects of uncorrected strain, while those with only one eye with normal vision were handicapped in the proper use of scientific instruments. Three hundred and three students wore glasses, 217 were hypermetropic, and 86 myopic. Eighty-seven complained of headache, 47 of these wore glasses. Of those with headache only, 7.59 per cent. had subnormal vision; the remainder were normal and therefore did not credit it to their eyes. Fifty-eight of the total number had scoliosis, or 6.68 per cent., 48 were hypermetropes, and 10 myopes. In 13.79 per cent. of the spinal curvature cases the vision of one eye was perceptibly lower than that of the other, supporting the inference of some ophthalmologists that ocular errors may cause this abnormality. The authors think that these figures, which are only a few out of the many compiled from the examinations, sufficiently indicate the importance of careful ocular tests as a part of the physical examination of every student and the importance of correcting existing errors.

Insanity in Women.—W. O. Henry reviews the literature of the subject, quoting the opinions of various authorities and criticising some of them who have minimized the value of gynecologic operations for the cure of insanity in women. He gives very brief reports of 28 cases, in which he operated on such patients; of this number he claims that 16 recovered from their mental disorders, 3 of them having remained well nine, ten, and eleven years, respectively. He thinks that there is a vast amount of undiscovered pelvic disease in insane women, the relief of which by operative methods would be possible. He insists on the necessity of radical work in these cases so as to leave no possible source of irritation that might perpetuate the insanity.

The Lancet, March 9, 1907.

Dislocation of the Semilunar Bone Complicating Fracture of the Styloid Process of the Radius.—P. R. Wrigley reports a case of this injury, his patient being a painter, thirty-five years old, who fell thirty feet from a ladder, dropping on his feet and then on his outstretched hand. The injury was at first supposed to be a Colles' fracture. The author who saw the case some days later found a transverse lacerated wound one inch long in front of the inner side of the wrist swollen, but permitting the recognition of the radial fracture. Later a rounded projection of bone was noted on the front of the wrist to the inner side of the palmaris longus tendon. An *x*-ray picture revealed a forward and upward dislocation of the semilunar bone, which lay just in front of the articulation between the radius and ulnar, the condition being complicated by a vertical fracture of the radius severing the styloid process from the rest of the radius. As the dislocated bone seemed too firmly fixed for reduction and the wound was suppurating freely, rendering excision inadvisable, it was judged best to await events. The wound healed in about a fortnight when splints were discarded and massage and active movements were commenced. This treatment was carried out for about a month with a gradually increasing range of movement of the wrist and fingers, but the patient began to complain of a feeling of numbness and tingling in his ring and little fingers. This was followed by characteristic ulnar paralysis affecting these fingers and in a minor degree the adductors of the thumb. It was obvious that if permanent injury to the ulnar nerve was to be avoided the offending bone must be removed. Ten weeks after the accident the semilunar bone was removed through a vertical incision. It was firmly imbedded in fibrous tissue, the ulnar vessels and nerves being displaced outwards. Healing resulted by first intention and massage was begun. In five weeks the ulnar paralysis had almost disappeared, there being only slight flexion at the interphalangeal joints of the little finger; the movements of the wrist were good and daily increasing in strength and range, so that the patient has now begun to do light work.

Operative Treatment of Traumatic Psychosis.—A case report is made by B. Hollander, whose patient was a physician of thirty-nine years, who had been kicked on the right side of the chin by a horse and who a year later had a bicycle accident, falling on the right side of his head. There were no visible signs of injury, but the accident was followed by hemicrania of great severity, preventing any intellectual work, and by definite character changes. He became emotional, anxious, very depressed, accused himself of unpardonable sins, developed suicidal ideas, grew suspicious, easily offended, irritable and profane, erotic, and subject to uncontrollable fits of sexual excess. He suffered also from obstinate constipation, persistent insomnia,

and had sensory disturbances in the left arm. He sought relief in changes of scene by traveling, but to no effect, and his strange conduct frequently led him into difficulties. In the spring of 1905 (six years after the bicycle accident) he had symptoms of word blindness and a transient attack of paralysis of the right side of the face and left half of the body. The depression and headache increased and all medical treatment failed to cure him. Believing in the possibility of localization of mental functions, and hoping that if his symptoms were localizable operation would show pathological changes and give relief, he came to London. On examination on October 3, 1905, he appeared depressed, emotional, showed strong suicidal tendency, and complained of intense headache on the right side and a burning sensation just posterior to the right parietal eminence. It was ajudged that there was a lesion originally limited to the neighborhood of the supramarginal and angular convolutions, later spreading downwards over the posterior temporal region. When the head was shaved preparatory to operation a scar appeared two inches behind the right ear and two inches long, commencing behind the parietal eminence in the situation of the angular gyrus and extending vertically downwards, corresponding to the posterior part of the temporal convolutions. A semicircular flap was made, extending from the tip of the ear to the occipital protuberance. The scar tissues were found firmly adherent to the bone and had to be forcibly detached. Two trephine openings were made, one one inch in diameter, and the other 11-16ths of an inch just below and a little behind the other and joined together. The bone over the angular gyrus was found thickened and hardened, with scarcely any diploe and the dura mater was adherent to it. When the bone was demoved the dura mater bulged into the opening, but showed no signs of pulsation, although the pulse of the patient at the time was quite strong. On cross incision of the dura mater a stream of clear fluid escaped. The membrane was opaque and thickened, but the brain appeared normal and on examination the neighboring parts revealed no pathological changes. The dura mater was stitched together and the periosteum over it, the portion of bone not being replaced. A drainage tube was kept in the scalp wound for three weeks. The patient during this period had still occasional attacks of depression and irritability, headache, and trigeminal neuralgia, but with the closing of the wound all symptoms disappeared. Five weeks later the wound had quite healed. The trephine openings were felt through the scalp. The brain was felt pulsating beneath, but there was no protrusion. There was no tenderness of the surrounding nerves. The general condition was quite good. Three months later the patient reported himself as absolutely well. There had been no return of the insomnia, the headache, neuralgic pains, or the sensory disturbances in the left hand and arm. The obstinate constipation of the bowels that obtained throughout the case prior to the operation one and a half years ago had entirely disappeared. Mentally, he had lost completely his morbid suspicion and all suicidal thoughts. The attacks of mental depression, the erotic feelings and morbid sexual symptoms had likewise entirely disappeared. He had resumed interest in all the affairs of life. Surgically the head was perfect in appearance and there was no tenderness anywhere.

British Medical Journal, March 9, 1907.

Deafness or Myxedema.—J. W. King refers to a case of myxedema extending with intermissions throughout a period of four years, but always yielding to thyroid treatment. The patient, a man of fifty-six years, had unimpaired hearing previous to the initial attack four years ago, but on each subsequent attack he has invariably become so deaf as to hear only loud shouting.

Influenza and Epistaxis.—Case histories are given by J. Pugh Jones and J. E. Turnly, both cases presenting the usual febrile manifestations and intercurrent nose bleed. In one instance sodium salicylate had been given, and the author was unable to decide whether the epistaxis was due to the effects of this drug or was an accompaniment of an ordinary nasal sinus suppuration due to the influenza bacillus.

The Staining of Animal Parasites.—I. W. Hall gives the following directions. (1) Prepare a film of the blood, feces, or sediment of the secretion. Fix by heat, or, less preferably, by formalin vapor. (2) Treat the film with the following solution, one-half to two minutes: Watery methylene blue, one per cent., 100 c.cm.; glacial acetic acid, 5 c.cm. (Neisser's methylene blue solution may be equally well used if at hand. Methyl violet, Nile blue, etc., are not so good). (3) Wash in water. (4) Cover the film with saturated alcoholic eosin solution. Allow to stain for five or ten minutes, or (following Muir's excellent method described in the *Journal of Pathology*, 1906) heat over the flame, blowing out the alcohol each time it catches fire, until the film is almost dry. (5) Wash in water. (6) Fix in potash alum solution, one-half to two minutes. (7) Decolorize in ninety per cent. alcohol until a uniformly pink color obtains. (8) Wash in water; allow to dry; mount in Canada balsam. It is the treatment with acetic acid which affects the outer coverings of the ova, embryos, and parasites, and allows the stain to permeate the entire structure. The paper closes with the applications of the foregoing method to feces, sediments from secretions and cyst contents, filaria, adult parasites, and spores. Concerning adult parasites the author states that by this method the internal structures, particularly the reproductive organs and the ova, are well brought out. It is best to allow the parasites or the segments to remain in the acid solution for about one hour, and in the eosin solution over a night. After thorough drying with absorbent paper they are cleared in clove oil or xylol for twenty-four hours and then mounted in balsam.

The Treatment of Incipient and Borderland Cases of Insanity in General Practice.—The various forms of mental disease considered by the author are grouped under the headings of backward or deficient cases, the epileptic, the nervous, the moral imbecile, the incipient melancholic and maniacal, the borderland delusional, and the premature dement. Forms met with in adult life are incipient mania and melancholia, borderland delusional insanity, incipient general paresis of the insane, borderland alcoholic insanity, and associated mental unsoundness. In old age we have incipient senile mania and melancholia, borderland paralytic insanity, and incipient senile dementia. Under each of these headings are grouped the respective hygienic and medical measures the author has found most beneficial, such groupings following a summary of symptoms. The author claims that the chronic borderland insane cases are neglected at the present time, and that the voluntary boarder system which exists in England for registered hospitals and licensed houses must be extended to county and borough asylums receiving paying patients, to be used for patients of this class. Thus additional means will be obtained for skilled treatment in the early stages of mental disease. Since contact with certified insane persons undoubtedly has a demoralizing and injurious effect upon many of the incipient insane, individual treatment in single care, uncertified, with all the surroundings and comforts of home, is much to be commended. The tendency very rightly is at the present time to this decentralization and segregation, and he believes the best results will be obtained thereby.

Berliner klinische Wochenschrift, March 4, 1907.

The Connection of Lactic Acid with the Convulsions of Puerperal Eclampsia.—Donath considers the theories of Zweifel and his coworkers who ascribe to sarcolactic acid an important rôle in regard to the convulsive seizures in puerperal eclampsia. In order to investigate the power of this agent to evoke convulsions he first studied the cerebrospinal fluid of epileptics, usually obtained shortly after an attack, and in another set of experiments introduced considerable quantities of it into the circulation of animals. The fluid obtained by lumbar puncture from nine epileptics was examined but it was never possible to demonstrate the presence of any lactic acid. On injecting from one to one and one-half grams per kilo of neutral sodium lactate into dogs no symptoms of any importance were caused. The author therefore concludes that in eclampsia, as well as in epilepsy, the muscular action attending the convulsions induces the formation in the muscles of sarcolactic acid. This is then rapidly oxidized in the blood, and only a small portion of it is excreted unchanged in the urine. It is accordingly not to be regarded as having anything to do with the causation of the convulsions in eclampsia, and is simply a secondary manifestation of the muscular activity.

Münchener medizinische Wochenschrift, February 30, 1907.

The Effect of Narcosis on the Blood.—Mulzer studied the effect of ether and chloroform on the blood by subjecting animals to prolonged and very profound narcosis with these agents. He found that sections of the organs of these animals gave evidence of a noteworthy change in the character of the blood in the vessels. Alterations in the appearance of the red

blood cells led him to believe that these undergo serious damage, and structures were also discovered which he considered as being granules and strands of fibrin. These lesions were most pronounced in the vessels of the lung, and numerous control observations seemed to show that they were the direct result of the action of the anesthetic agents. Chloroform appeared to have a somewhat greater power to produce the changes than ether. The coagulability of the blood was slightly increased after narcosis and the hemoglobin was reduced. The number of erythrocytes was still diminished to a very considerable degree, and the abnormalities in the shape of the cells indicated the destructive action of the anesthetics.

Scopolamine-Morphine-Chloroform Narcosis.—Kreuter reports on one hundred cases of chloroform anesthesia preceded by two injections of scopolamine and morphine carried out in the Erlangen University Hospital. In eighty-six per cent. of the cases the results were satisfactory, while in the others little or no effect seemed to be produced by the preliminary injections. The general conclusion reached is very much in favor of the method, which is characterized as the ideal from the patient's standpoint, though an uncomfortable sequel is the trying sensation of thirst that commonly persists during the first twenty-four hours. This represents, however, one of the valuable features of the method, since it is due to the general inhibition of secretion that is caused by the alkaloids, and this, according to the author, is an important prophylactic against postoperative pneumonia. He considers that when the alkaloids are used in small amounts the method is free from danger, and it appears that a much smaller quantity of ether or chloroform is required. The disadvantages of the method lie in the uncertainty of action of the alkaloids and in the thirst that follows the operation. The method is contraindicated in operations about the face, mouth, or respiratory passages in which there is danger of aspiration, and expectoration is desired, but it may safely be resorted to even for long operations on weak patients. For details as to the technique employed in the Erlangen clinic reference must be made to the original.

Deutsche medizinische Wochenschrift, February 28, 1907.

Differential Stains for Distinguishing Tubercle from Perlsucht Bacilli.—Spengler says that in about sixty per cent. of the cases of phthisis the tubercle bacillus and the perlsucht bacillus are present in a condition of symbiosis. In order to assist in the recognition of such cases he suggests several staining methods. One of these is a capsule stain performed as follows: The smear is rendered alkaline with one per cent. solution of sodium or potassium hydrate and is dried without resorting to more than the least possible degree of heat in order to avoid injury to the extremely susceptible capsule of the perlsucht bacillus. Löffler's methylene blue is poured over the preparation, which is then washed with water. The preparation is next treated with carbol fuchsin solution heated gently until it steams, and is washed with water. Finally the preparation is stained for a few seconds with methylene blue, to which one or two drops of fifteen per cent. nitric acid have been added, is rinsed with water and is carefully dried. Perlsucht bacilli will be found to be very much larger than tubercle bacilli; in fact, they appear gigantic, according to the author, and the distinction between the two is easy. Another method consists in staining with carbol fuchsin and then treating the smear several times with a solution of picric acid acidulated with three or four drops of fifteen per cent. nitric acid. The picric acid solution consists of equal parts of a saturated aqueous solution of picric acid or of Esbach's solution, and absolute alcohol. The smear is then treated with fifteen per cent. nitric acid until it has a pale yellow color, is rinsed with alcohol, and is again stained with the picric acid solution. For the details of these and other methods reference must be made to the original.

Pathology of the Heart Beat.—Bönniger contributes an article on this subject in which he says that simultaneous contraction of the auricles and ventricles as evidenced by systolic venous pulse is a not infrequent condition. Systolic venous pulsation is seen in cases of tricuspid insufficiency, but the condition described by the author is independent of any leakage of this sort. The customary concomitants of tricuspid incompetence such as early and severe edema, dilatation of the veins, and pulsating liver, are absent, though the cardiac action is likely to be very irregular. It is possible to recognize the condition by observation of the heart with the fluoroscope, and the absence of the congestive and other accompaniments of tricuspid lesions is characteristic. The significance of the phenomenon lies not so much in its effect on the circulation, since this often seems to be but slightly affected, but in the province of treatment, as the use of digitalis appears to be undesirable and often serves only to increase the irregularity and tachycardia.

French and Italian Journals.

Treatment of Angiomata and Nævi.—Zimmern in speaking of the treatment of these blemishes says that electrolysis by the method of electropuncture is sometimes used. In nævi with visible telangiectasis this treatment at the end of a period sometimes long, sometimes short, produces very satisfactory esthetic results, according to Brocq. Negative monopolar electrolysis is used. Recently Bergonié has proposed to treat smooth vascular nævi by high-frequency currents. Brocq considers that in the case of prominent vascular tumors, that is, erectile tumors, electrolysis constitutes a wonderful treatment. Electrolysis in the treatment of angiomata is a definite operation, sure and applicable to all varieties of cavernous angiomata, small, grave, circumscribed, diffuse, or those invading neighboring tissues. The writer then describes with illustrations the technique of the treatment for these lesions.—*Journal de Médecine de Paris*, December 27, 1906.

Scopolamine in Surgery and in Obstetrics.—Albert Laurendeau in a recent work on this subject advises a dose of 1.50 grains of the hydrobromate of scopolamine combined with 1/5 of a grain of morphine to be given to adults by means of hypodermic injections in the lower extremities. This injection may be given if necessary three times in all at hour and a half intervals. This medication is not meant to replace chloroform absolutely. The toxic coefficient of scopolamine-morphine is less than that of chloroform. Its manipulation is more easy, and its method of administration is more definite. It may be employed in cases of tuberculosis, of heart lesion, and of cachexia. These drugs are advised in the case of patients who are subject to vomiting, in cases in which the intervention is of long duration, in cases in which surgical intervention is followed by severe pain, in first aid work, and in obstetrics. One dose suffices to abolish all consciousness and memory for several hours.—*Le Journal de Médecine et de Chirurgie, Montréal, Canada*, December 29, 1906.

Transparence of the Cranial Bones to X-Rays.—C. Luraschi began in 1904 a study of the results to diagnosis and prognosis of the application of the *x*-ray to the bones of the skull. He finds that it is of value in locating disease of the various sinuses, as the frontal, mastoid, and the antrum, and in detecting tumors of the brain. The rays are of more value in the examination of thin bones, such as those of children. It is possible to distinguish the layers of skin, skull, and dura mater by photography. By radiography one can distinguish the thickness of various parts of bones, and localize foreign bodies, such as projectiles. They are of the greatest use to the rhinologist and the dentist.—*Giornale di Elettricita Medica*, September and October, 1906.

Experimental Pancreatectomy in the Dog.—At the meeting of the Biological Society, November 24, 1906, Sauvé showed a dog on which he had practised fifteen days previously a duodeno-gastro-pancreatectomy. From the results of experiments which this investigator has made on a series of ten dogs, he concludes that it is impossible to remove the entire pancreas of the dog without removing the duodenum also. If the duodenum is not removed it will slough. Gastro-duodeno-pancreatectomy in the dog may be practised at one sitting, at the same time with the complementary operations for reestablishing the course of the chyme and of the bile. The question of glycosuria which, after pancreatectomy, lasts till death, is still, in spite of current opinion, unsolved. The negative experiments of Pflueger and a case of total pancreatectomy in a man corroborate the reports of the author.—*La Presse Médicale*, December 1, 1906.

Aberrant Goitre.—Reynier reports two observations of tumors, the one located under the angle of the jaw in the submaxillary region; the other adherent to the external surface of the vessels over the sternomastoid and which projected into the subclavicular triangle. Careful histological examination of these cases left no doubt as to the thyroid origin of these tumors. It showed conclusively that the thyroid origin of certain branchial tumors can no longer be denied; and it also supported certain recent embryological data in the explanation of their development. According to Delbet, it is an important fact that epitheliomata of the neck develop from epithelial débris which have existed since the embryonic period. Histological variation matters little since it is now known how closely connected are the branchial clefts, the lateral thyroid invaginations, and the thymic invaginations.—*Revue de Chirurgie*, December 10, 1906.

Book Reviews.

THE INTERNATIONAL MEDICAL ANNUAL: A Yearbook of Treatment and Practitioner's Index. Twenty-fifth Year. New York: E. B. Treat & Company, 1907.

WE find a number of subjects comparatively new in medical science, and for the most part not yet admitted to the text-books, treated fully and intelligently in this excellent review of the year's progress. Among the titles of the chapters, giving an indication of their contents, are: "Serum-therapeutics," "Opsonins and Vaccine Inoculations," "Cancer," "Diseases of the Ductless Glands," "Chemical Pathology of Gout," "Bier's Treatment," "Spinal Surgery," "Colored Urines Tested by the Spectroscope," "Dictionary of Treatment," "Examination of the Blood," "Electrotherapeutics and Radiotherapeutics," "Syphilis," and "Diseases of the Sinuses." The two last named are excellently illustrated, four plates, two colored, being devoted to the illustration of the spirochete of syphilis. Indeed, the illustrations throughout the work are very good; there are 28 plates and 60 pictures in the text. The contributions number thirty-five. The reader of medical periodical literature, in other words the educated and progressive physician, will find what he has read and studied from week to week through the year admirably summarized in this volume and put in a form where it is easily accessible for review or occasional reference.

THE NEW HYGIENE. Three Lectures on the Prevention of Infectious Diseases By ELIE METCHNIKOFF, Author of "The Nature of Man," with Preface by E. RAY LANKESTER. Chicago: W. T. Keener & Co., 1906.

THESE are the three Harben lectures delivered by Dr. Metchnikoff before the Royal Institute of Public Health in London last year. In the first lecture, "The Hygiene of the Tissues," the protective influence of the phagocytes is discussed in the light of the new impetus given to the humoral theory of immunity by the opsonic doctrine, and the conclusion is reached that, whatever may be the value of the opsonins in preparing microorganisms for destruction by the leucocytes, it is, after all, the latter which are the active and essential agents in the defense of the organism against the invasion by disease germs. The lesson of this is the importance of strengthening the phagocytes in their struggle against the host of pathogenic bacteria.

The second lecture, "The Hygiene of the Alimentary Canal," treats of the entrance of pathogenic bacteria into the blood by way of the digestive tract after their introduction therein with food. The lesson of this is that food should not be eaten raw, since in this way disease germs, but especially the ova of intestinal parasites, may be introduced. These helminths, though perhaps harmless in themselves, facilitate the passage of bacteria into the blood by wounding the intestinal mucous membrane.

The third lecture, "Hygienic Measures Against Syphilis," recounts the efforts that have been made, and are still being made, with the hope of ultimate success, to arrest syphilitic infection after inoculation with the virus of the disease.

M. Metchnikoff is not only a scientist and an original thinker of the first order, but also possesses the gift of a pleasing literary style, by which he is enabled to impart to others the knowledge he has gained by experimentation. These lectures will be found of absorbing interest not only by medical men but by those of the laity as well who have more than an elementary knowledge of physiology.

PRACTICAL AND THEORETICAL ESPERANTO. A Handy Textbook for Beginners and Advanced Students, for Self-Instruction and Teaching Purposes. Containing Elementary Grammar, Formation of Words, Complete Syntax and Exercises. By Dr. MAX TALMEY. New York and Boston: Universal Language Publishing Co., 1906.

THIS is, so far as we know, the pioneer instruction book for Esperanto written by an American. The author must have had considerable experience in language teaching, for he presents his subject in a way which shows that he knows the needs of the student. The exposition of the formation of the language is simple and most intelligible and the very questions which would naturally arise in the mind of the beginner are all answered clearly and distinctly. In a language which has not the authority of cultivated speakers, using their native tongues to support it, the question of pronunciation is perhaps the most difficult. Without absolutely fixed rules, illustrated, in the grammars for the use of different nations, by references to the established laws of pronunciation in the respective vernaculars, a confusion fatal to the employment of the language as a means of oral communication must arise. The author has recognized this necessity and has made the section on pronunciation very complete and explicit. Unfortunately, however, no two authorities which we have consulted, and we have compared for this purpose six or eight grammars by English, French and German authors, agree on this point. Even in the series of articles on Esperanto now running in the *North American Review*, the two sections devoted to the pronunciation are mutually contradictory on various points. Dr. Talmey also shows, in his discussion on the subject, that very marked differences exist, and the authority of even the creator of the language, Dr. Zamenhof, is rejected by him. If such a lack of uniformity in pronunciation exists at the beginning, what must the confusion become as Esperanto spreads among different nations, each with its own tradition of the value of the various letters. The next Congress of Esperantists should devote itself to the adoption of some absolute and immutable standard of pronunciation if they would save their language from meeting the fate of Volapük.

DISEASES OF THE STOMACH AND INTESTINES. By BOARDMAN REED, M.D. Second Edition. New York: E. B. Treat & Co., 1907.

THE whole digestive tract practically being one organ, Reed thought best to describe the diseases of the stomach and intestines in one volume. The writer greatly enhances what is of value to the practitioner and is thereby guided by his own large experience. The physical methods of treatment are discussed at great length. According to Reed massage acts beneficially in conditions accompanied by a diminution of gastric secretion, while it is harmful in hyperchlorhydria. Reed says: "Considering the serious and often disastrous results to health that may come from hyperchlorhydria with its train of intestinal and nervous symptoms, and the readiness with which it can be greatly increased by massage of the abdomen, this powerful remedy should be prescribed with great carefulness and with more exact dosage than is now customary; and it needs to be remembered that in many neurasthenic patients with a tendency to excessive secretion of the gastric glands, even very moderate massage over the abdomen can set up this troublesome condition with a resulting aggravation of the constipation, as well as of the insomnia and all the nervous symptoms."

Rest treatment the writer recommends in the following words: "By rest patients are not only given the absolute rest in bed which is grateful to many of them, but, what is far more important, are thereby removed at once from numerous actual or possible disturbing causes—from mental strain, overexcitement or overexertion of any kind, nagging cares and worries, the temptations of dietetic indiscretions as to food or drink, late hours, with insufficient sleep and dissipation of whatever form, whether downright vicious and under the ban or fashionable and approved by society, no matter how unhygienic. All such dangers, known and unknown, are cut off at one blow by the rest treatment, and many of them are particularly efficient causes of hyperchlorhydria.

The illustrations accompanying the text are numerous and excellent. As a whole the present book can be highly recommended.

THE CHEMICAL INVESTIGATION OF GASTRIC AND INTESTINAL DISEASES BY THE AID OF TEST MEALS. By VAUGHAN HARLEY, M.D., Edin., M.R.C.P., F.C.S. Professor of Pathological Chemistry, University College, London, and FRANCIS W. GOODBODY, M.D., Dubl., M.R.C.P. Assistant Professor of Pathological Chemistry, University College, London. London: Edward Arnold. New York: Longmans, Green & Co., 1906.

THE diagnosis of diseases of the alimentary tract is now so largely founded on the purely objective results obtained by means of chemical and microscopical examinations of material obtained from the stomach or intestine that it is not astonishing to find a work of 250 odd pages devoted purely to the former of these modes of investigation. The first eighty-eight pages contain a thoroughgoing discussion of the methods of gastric analysis and the remainder of the volume is given up to the subject of intestinal disorders. How important the laboratory methods have become in dealing with cases of this sort is evidenced by the fact that the description of the chemical examination of the feces alone covers nearly a quarter of the book. The use of test diets in the investigation of the feces is described and suitable diets are suggested. The microscopical and bacteriological aspects of the subjects under discussion are not taken up, as they have not been especially studied by the authors; but although the work is not primarily a clinical one, this phase has received sufficient consideration to make the text full of interest to the practitioner as well as to the laboratory worker. The one subject that seems to have been rather inadequately handled is that of occult hemorrhages, and some of the more recent tests for blood in the stools or stomach contents are not mentioned. The book is distinctly an interesting and useful one.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held February 21, 1907.

First Vice-President, Dr. Robert Abbe, in the Chair.

This meeting was held under the auspices of the Section of Medicine.

Nitrogenous Metabolism in Typhoid Fever.—Dr. James Ewing read this, the opening paper of the symposium on typhoid fever. He said it had long been known that typhoid fever, rather more than other continued fever, was marked by a very high urinary nitrogen excretion, but the partition of this nitrogen and the bearing of variation in the forms of nitrogenous compounds excreted in the urine upon the pathology of this disease had received very scant attention. The total nitrogen excretion in urine and feces in typhoid had recently been studied in detail. The fecal excretion had been found to be relatively small, forming only 10 per cent. of the total nitrogen elimination. During the active febrile period and sometimes continuing into convalescence there was a pronounced loss of nitrogen, excretion exceeding ingestion by as much as 10 grams daily, the loss diminishing as the fever subsided. Since they were able to limit this loss to some extent by supplying nitrogen-free diet, they argued at length that the excessive nitrogen elimination of typhoid fever was not evidence of toxic destruction of cell proteids, but a result of simply hyperactivity of the metabolic functions. The present study was undertaken in 1905 as a control for the interpretation of results obtained by Wolf and himself in the investigations of the urinary nitrogen in the toxemia of pregnancy. It was also suggested that typhoid fever, especially in the later stages, was largely an autointoxication. It was pursued also in the hope of finding some correlation between changes in the urinary nitrogen and histological changes in the liver. The results were not without interest. The analytic methods employed were those described in a recent article by Dr. Wolf and the writer. Appended were reports of the analyses of seventeen cases, and the most obvious interest was in the relation of the urinary nitrogen and its partition to the clinical symptoms. The records showed a total urinary nitrogen excretion reaching 27.40 grams on the thirteenth day of a moderately severe case, but averaging considerably below 20 grams. With a restricted milk diet of these patients, this large percentage of nitrogen must signify consumption of tissue proteids and a marked loss of nitrogen on balance. The total nitrogen varied with the temperature, diminished in defervescence, when nitrogen retention began. The more favorable the condition the higher was the percentage of urea nitrogen. In severe stages it usually ran below 80 per cent., when 12 to 20 grams of N. were excreted; while in some cases which recovered it was found below 70 per cent., and even as low as 60 per cent. A ratio below 70 per cent. seemed to indicate a grave condition. Sharp increases in this ratio were very favorable signs; a rapid decrease, 82 per cent. to 67 per cent., and 80 per cent. to 60 per cent., was shortly followed by the death of the patients. In some instances the urea ratio seemed to be a better index of the patient's condition than was the temperature or the pulse. In two fatal cases the ammonia ratio reached 9 per cent. and 10 per cent. and in one fleshy woman severely ill it was found at 11 per cent. The present indications did not indicate that acidosis was a prominent feature of typhoid fever. Even the highest figures observed indicated only moderate grades of acidosis, especially for patients on a restricted milk diet. Brugsch had claimed that one of the chief causes of acidosis, when the system was unprotected by food, was the burning of the body fats, and the comparatively low ammonia excretion in typhoid fever when there was extensive consumption of tissue proteids was consistent with this view. In typhoid fever the total ammonia did not exceed the figure established by Folin, about .7 grams. The acetone bodies were not estimated in this series. A fall in the urea nitrogen was regularly accompanied by a corresponding rise in the rest-nitrogen. In severe stages of the disease the rest-nitrogen ran between 15 per cent. and 20 per cent. and in three fatal cases it rose above 20 per cent., once to 41 per cent. In two cases a sudden rise in the rest-nitrogen with a fall in the urea preceded the appearance of albuminuria. The following points of clinical interest appeared. Urea ratios below 70 per cent. and rest-nitrogen above 15 per cent. belonged to the severer stages and types of the disease. Rapid falls in urea with rises in rest-nitrogen occurred at unfavorable times in the disease. The ammonia nitrogen tended to run comparatively low, but in fatty subjects, or severe cases, or before death, it might rise to 10 per cent. or more of the total nitrogen. The character of the nitrogen partition in typhoid fever seemed to show some dependence upon, or relation to the lesion in the liver. In typhoid fever the liver, as a rule, showed some intense granular degeneration and usually focal necroses. Fatty degeneration was not prominent. If the final synthesis of urea was largely a function of the liver, the severe damage to the liver might be expected to yield for a time a low percentage of urea in a high total nitrogen output. The absence of extreme acidosis in typhoid fever accorded with the usual condition of the typhoid liver. The changes in the urine in fatal typhoid fever were very similar to those in acute yellow atrophy, and the occurrence of acute yellow atrophy as a termination of typhoid fever was not extremely rare. The results showed that the disturbance of nitrogenous metabolism was very similar to that of other infections and in some intoxications which were not of bacterial origin. Since this disturbance of metabolism was of a type which seemed never to occur without abnormal symptoms, there was reason to believe that it was partly responsible for these symptoms. Hence the conclusion was reached that in typhoid fever and other infectious diseases an important part of the morbid process consisted in a disturbance of nitrogenous metabolism which was very similar in type to that seen in pure autointoxications, and which therefore was not directly connected with the toxins of the invading bacteria. The excessive nitrogenous metabolism of typhoid fever was not the specific effect of the action of the endotoxins of the typhoid bacilli, but represented hyperactivity of a normal type associated with the fever. Wolf had pointed out that bacterial endotoxins were much alike in their actions and affected chiefly the nervous system. The central phenomena expressed of the disease resulted from the course which the metabolic activities of the organism took in reaching an equilibrium and effecting a cure. What they saw of typhoid fever was not merely the entrance and destructive effect of the typhoid endotoxins, but the burning of 30 pounds of tissue proteid in three weeks. Hence in studying the nitrogenous metabolism they were obtaining information about one of the fundamental processes going on in the diseased organism.

Dr. C. G. L. Wolf said that Dr. Ewing, in presenting the results of the investigations of typhoid fever, had endeavored to show the practical results which had been obtained, and the work suffered from its fragmentary character, as Dr. Ewing had remarked. Work of this kind, to be of the greatest value, must at first be done under exceptionally favorable conditions. The analytical technique should be as perfect as possible, and by that he meant the entire exclusion of the so-called clinical methods, such as the hypobromite method for urea, and the various purinometers, uricometers, and instruments of that sort. These various contrivances were not to be relied upon, any more than methods depending upon the centrifuge were of any value in the quantitative estimation of albumin, chlorides,

sulphates, and phosphates. But even with perfect technique, the task was not half completed. The importance which attached to the complete collection of a 24-hour specimen of urine could not be too strongly insisted upon. Furthermore, he said he was convinced that the patient should be placed on an accurate standard diet, of which the nitrogen content and the calorific value were accurately known. The diet should preferably be free from purin compounds. It was not in the least difficult to choose a diet of this sort, which would be suitable for almost any disease. He said he could speak with a certain amount of authority on this point, for in the work which Dr. Alexander Lambert and he had done in the metabolism in pneumonia they had obtained what they were inclined to believe were important data, which could not have been procured had the patient been allowed a diet which varied from day to day. It also seemed to him that a very careful clinical daily report would help to clear up many of the metabolic vagaries which were encountered in the examination of urines of this type. He trusted that the time would come when as a result of the accurate study of metabolism they should be able to substitute simpler methods, which might be used by clinicians, independent of the chemical laboratory; but the time had not yet come, and appeared to be at some distance. He thought he might safely say that anyone who would take up a single affection, such as those of the kidney, the liver, the anemias, and the various infectious diseases, and work out a few carefully selected cases on the lines which Dr. Ewing had laid down, would obtain results of distinctly permanent value.

The Management of the Intestinal Tract in Typhoid Fever.—Dr. Walter B. James read this paper, in which he considered briefly the feeding, the nursing, the general management, and the treatment of complications. He confined his remarks to the consideration of a few principles underlying the general treatment of the digestive system in typhoid fever.

Dr. George L. Peabody called attention to one difficult part of the problem, the management of the stomach. It had happened to him to have patients brought under his care who had been under no medical care at all, but under the care of relatives or friends, and their stomachs had been rendered irritable by bad feeding, obstinate vomiting being the early symptom. Even in the best managed cases obstinate vomiting occurred early in the disease. In this connection the first thing to do was to give the stomach a rest, and postpone introducing anything in it for twelve or more hours. He applied counter-irritation to the epigastrium, such as strong mustard paste. If the vomiting persisted, he advised against temporizing longer, but resorting to lavage. When he began feeding he used the utmost caution. If the vomiting was not checked within twenty-four hours, he used lavage. He said that Dr. James had referred to the unsatisfactory efforts made to regulate the amount of food taken by the number of calories we knew the patient should require. We could tell the number of calories required in health, but when there was such an altered metabolism as occurred in fevers, it was hard to say how many should be had. A patient weighing 120 pounds should receive 1,925 calories a day during health. But when there was an increased activity, and, therefore, increased metabolism, the patient should receive more. If milk alone was given, five or six pints would be required. Therefore, he agreed with Dr. James in his statement that milk alone was not a suitable diet for these patients. The number of calories could be greatly increased by giving alcohol in any form. Eggs helped materially. There were various modifications of milk that he was in the habit of using, such as koumiss, or matzoon. Clear soups were given throughout the disease; they stimulated the heart and the appetite, were agreeable and palatable. Water should be given in abundance. Beef juice was highly acceptable to the patient. For many years he had been in the habit of feeding the patients solid food if they became hungry. He was particularly fond of giving ice-cream in all stages of the disease. Constipation was best met by giving enemata. The presence of constipation was no evidence of the absence of ulceration, nor was diarrhea an evidence of the presence of ulceration; the latter was evidence only of a catarrhal condition. He had never known of a case of perforation caused by the use of cathartics. He never treated the diarrhea at all, unless there were more than three or four movements a day. If the patients had more than that number a day, it exhausted them; then he usually gave bismuth or opium, especially the aqueous extract. Meteorism was a serious symptom; when due to gas in the large intestine it was best relieved by the rectal tube, but not a large one. A catheter the size of a lead pencil was large enough. He believed still in the value of turpentine for the treatment of meteorism, administering 10 minims every three hours; this will often soften the abdomen and lessen the tension by reducing the amount of gas. Occasionally turpentine stupes would aid, but not often. There was not much to do for intestinal hemorrhage; place the bleeding part at rest by placing the patient at rest. Surgery was of no avail in intestinal hemorrhage. But in cases of intestinal perforation, nothing but surgery would avail, and only with promptness.

Dr. W. Gilman Thompson wondered what had become of the "gurgling and tenderness in the right iliac fossa," so much spoken of in the earlier text-books on medicine. He could not recall a case presenting gurgling and tenderness in the right iliac fossa, in cases of typhoid fever. He had not even seen those symptoms in late years; it was a striking fact that this pair of symptoms had practically gone out of date, probably owing to better methods of feeding. He did not believe that there was any disease in which so much routine treatment was recommended as in typhoid fever, and the more he saw of typhoid fever the more convinced was he that one could allow a great deal of latitude in treating the different types of the disease. When the soldiers came back from Santiago, turned loose on furloughs, with high temperatures and typhoidal stools scattered all over the country, from the 200 cases of typhoid fever then seen he had learned how much such patients could stand; it was surprising how many got well. Of course, they were all young and in fair health, but there was a high toleration of the human system for that disease. Of late years he had been treating typhoid fever patients more liberally in regard to diet. He gave a milk diet so long as it agreed. When the tongue became coated and there was a distaste for milk, he believed something else should be given. He gave liberally of beef and orange juice, etc. The great danger from meteorism was from stretching the gut and so causing perforation. When the gut was distended with gas the lesions could not heal. He was not accustomed to withhold food as Dr. James did in those cases. He believed there was a field for the use of drugs in cases of tympanites. There was nothing in the name "intestinal antiseptics," but there was something in intestinal antifermentatives. He gave salol and creosote in coated pills which did not dissolve in the stomach; they were dissolved in the intestine only and aided in keeping down meteorism. When the stools became foul and offensive, and there was diarrhea, and a tendency to tympanites, there should be proper attention to the regulation of the diet and cleansing the lower part of the bowel. When the stools were fetid, the absorption of food stuffs was added to the toxemia of the typhoid fever. He believed in giving turpentine internally, as well as externally. One should endeavor to keep down the tympanites, which was more to be dreaded than hemorrhage. It was well to feed typhoid fever patients early in convalescence with some solid food. If a relapse occurred the patient then would be better able to bear the disease again than if

he had been on an exclusive diet. He never had seen a relapse due to the giving of food. Ten per cent. of typhoid patients would have relapses no matter what the diet was.

The Treatment of Typhoid Spine.—Dr. Virgil P. Gibney read this paper. He said that the term "typhoid spine" was first suggested in 1889, when it was distinctly stated that it carried with it no pathological commitment. A suggestion was made, based upon seemingly good foundation, that a periosteal lesion, inflammatory in character and caused by the presence of the typhoid bacillus, was in all probability a lesion that could be accepted. Soon after, other reporters recorded cases that presented a fixed deformity, and the term "spondylitis" was employed to designate a destructive lesion in the bodies of the vertebræ resulting in deformity, such as one got in Pott's disease of the spine. Again, the term "neurosis" was invoked as explaining cases where no deformity existed. An osteoarthritis, posttyphoidal and involving the transverse processes and lateral masses, as well as the articular borders of the vertebræ, was believed by some to be the prevailing pathological condition. He referred to Thomas McCrea's paper on "Typhoid and Paratyphoid Spondylitis with Bony Changes in the Vertebræ," read before the Association of American Physicians in Washington, May, 1906 (see Medical Record, Vol. LXIX, page 897). A periostitis of the vertebræ naturally suggested involvement of the articular borders and the foramina of exit of the nerves, and the many cases already on record of bony enlargement were confirmatory of the theory first advanced as the primary pathological lesion. McCrea's conclusions were: "1. In certain instances of typhoid spondylitis there are certain definite bony changes in the vertebræ. 2. The general features of the condition suggest the probability of organic changes in the spine being a usual occurrence. 3. The similarity of the changes found in typical spondylitis and those found in spondylitis of other infections, especially arthritis deformans, suggest that the latter may be due to various infectious agents." It seemed pretty well established by a number of cases already on record that trauma played a very important part as a factor in the etiology. Dr. Gibney claimed to have had fairly good results in a reasonable length of time by resorting to fixation of the column, the avoidance of trauma, the free use of the Paquelin cautery, and the subsequent employment of well-directed massage and graded exercises. The value of the cautery as a counter-irritant had proved so valuable in his hands that he felt justified in recommending it above all others. The plaster-of-Paris jacket or corset had not proved so valuable an agent as had the simple Knight spinal brace or the posterior spinal assistant of Taylor. The crisscross strapping with Z-O plaster had been a valuable adjunct, especially in the milder forms of the disease. Where deformity existed it was necessary to wear apparatus for longer periods. He emphasized the importance of a clean-cut diagnosis made by a careful examination of the parts, by interpretation of the pains in an honest endeavor to determine whether the pains were radiating and due to pressure on a nerve, or whether they were boring pains of surfaces rubbed together, and after having made the diagnosis adopt methods of treatment that might be regarded as rational. In spinal lesions it was important to immobilize not only the parts involved but those contiguous thereto, above and below, and to get an accurate adjustment of the immobilizing apparatus. The Paquelin cautery was insisted upon as a regular line of treatment as long as tenderness and pain on movement existed.

Dr. T. Halsted Myers said that he had looked up the medical histories at St. Luke's Hospital and found that there had been 500 cases of typhoid fever in five years, and there was not one single case recorded of typhoid spine. There were some cases of periostitis, but in other locations than the spine. He urged the importance of diagnosis.

Dr. Leonard W. Ely said that the name "typhoid spine" seemed to be the best. While there might be a spondylitis present, and probably was, yet one never got abscesses, and the disease always terminated in an absolute recovery. All these cases got well. He invariably told his patients that, dating from the beginning of the trouble, they should be well in one year or eighteen months. Nobody agreed with Dr. Osler's statement that the disease was a neurosis. There was almost always a history of trauma. The use of the Paquelin cautery was of value in the convalescent stages, as well as in the active when there was the acute pain. The pain in the acute stage was sometimes terrible, and sometimes in these acute paroxysms morphine or anesthetics were required. Rest in bed, counterirritation, and later on the jacket or brace, was the treatment.

Stated Meeting, Held March 7, 1907.

The President, Dr. John A. Wyeth, in the Chair.

A New Section.—It was moved, seconded, and unanimously carried that a Section on Materia Medica and Therapeutics be organized in the New York Academy of Medicine.

The Typhoid Epidemic in Berwick, Pa.—Dr. J. H. Bowman of Berwick presented this paper, which was read by Dr. Charles F. Adams. He said that for two winters in succession Berwick had been visited by epidemics of typhoid fever. The epidemic of 1906-7 began in October, the first case having been reported on the 15th of that month; new cases continued to be reported until January 1, 1907. The total number of cases to March 1 was 114 and the mortality 9. It was noticed that by far the greater number of cases occurred in the rolling mill department of the local industrial plant, where on account of the great heat an abundance of water was drunk. It was also observed that in the last epidemic a greater number of women and children were ill than in the former. Berwick and its immediate vicinity had a population of 15,000 and was dependent for its water supply on several mountain streams and on the Susquehanna river. It was situated 41 miles below Scranton. The sewage of both these cities as well as that of Wilkesbarre and Pittston emptied into this river. Soon after the outbreak in the fall the water from the river was turned off and was not turned on again until February 15. The State inspectors examined the water from all sources but said that the presence of the typhoid bacillus could not be demonstrated. The water sheds were inspected but no source of infection was found. The dairies were also inspected, but failed to reveal any cause for the outbreak. With all these negative results the fact remained that the infection was so general and widespread that the cause, whatever it was, was conveyed by some general commodity, such as drinking water. The conclusions reached were that polluted water was the cause of the wide distribution of the typhoid germs. In all probability the first case resulted from the use of Susquehanna river water, drawing as it did a large volume of sewage from Scranton. These cases distributed over the general area of Berwick and its suburbs carried the infection into the mountain streams, so that although the river water was cut off the other supply had become infected. A concurrent epidemic of influenza which attacked a greater number of patients than in any year since the memorable epidemic of 1889-1890, diminished the normal resistance in these cases and made the subjects more susceptible to the typhoid infection.

The Typhoid Epidemic in Pittsburg.—Dr. J. F. Edwards, Superintendent of the Bureau of Health, Pittsburg, Pa., presented this paper, which was read by Dr. John A. Wyeth. He said that it must be borne in mind in the

study of this epidemic that typhoid fever had been prevalent continuously during the period of available statistics, or since 1873. Certain years or groups of years showed a high percentage as compared with others, but in no year had the mortality been low as compared with other American cities. The average mortality from 1880 to 1906 per 100,000 of the population was 107. The lowest rate was 55 per 100,000 in 1894, and the highest 158 in 1882. With the exception of these two years the highest rate was 141 per 100,000 in 1900. It was evident that a predominating etiological factor was at work continuously but with varying intensity for the past 36 years, and probably for a much longer period. The present high rate period began in 1899 as was shown by the following: 1899, 112; 1900, 141; 1901, 124; 1902, 130; 1903, 135; 1904, 140; 1905, 100; 1906, 130. These figures showed that the causative factor had acted continuously during the past eight years and to a greater degree than in any like period in the history of the city. The predominant cause was an infected water supply. It was fair to assume that other conditions at work elsewhere in conveying the disease were also at work here. The general water supply of the city was drawn from two intakes in the Monongahela river and two from the Allegheny river. The water was pumped directly into reservoirs, from whence it was distributed to consumers. Several wards in the city were supplied by corporations, one having its intake about one mile further up than that of the city. There is said to be some filtration here by means of a crib in the river bed. One ward was supplied by a corporation with water taken from the Monongahela from an intake above the others and last year instituted a filtration plant. It was the only ward supplied with filtered water and was at present practically free from typhoid. Both rivers had a large population in towns situated near the water's edge. The towns on the Monongahela were larger than those on the Allegheny and one would expect more typhoid in those portions supplied by that river, but such did not seem to be the case. In the past two years the rate per thousand had been about one-half as great in those wards supplied by the Monongahela as in those supplied by the Allegheny. The Monongahela had a very slight fall and a slow current and in low-water stages was said to be pumped out and put back five or six times during its course. One of these times it must run back through the sewers of the town. Both mines and mills introduced mineral acids into the water in sufficient quantities to make the water of the river acid during low water. In a laboratory experiment he had found that 5 parts of free sulphuric acid per 100,000 killed typhoid germs in one and one-half hours. It was said that the river reached 7 per 100,000 at times and near works might go 100 and more. The objection to the acid theory was that the river was alkaline during a good part of the year and typhoid fever was quite high on the South Side in August, when the water was low. Another corrigent of the Monongahela was the heating of the water by the works along its banks. Four large establishments pumped 178,000,000 gallons per day, five and three-quarter million gallons was to a certainty heated to the sterilizing point. Plants further up the river discharged proportionate volumes of sterilized water. The total was very large. During the winter of 1905-1906 typhoid prevailed in a number of boroughs above the city on the Allegheny river. The March thaw probably accounted for the grave increase in the number of cases reported in April. During the year a special effort was made to determine the influence of the milk supply. It could not be shown that any considerable number of cases could be traced to the milk supply. Since July of 1905 there had been a progressive increase both in cases and deaths which culminated in the sharp rise of April, 1906, when 820 cases with 78 deaths were reported. During the whole year there were 5,729 cases with 508 deaths. The ratio of deaths to reported cases was lower than in any other year and it was believed that this was partly due to the fact that more cases were reported than at any previous time. In general it might be stated that typhoid fever was more prevalent, all other things being equal, in districts where the standard of living was lowest. The incidence of cases during the last year exemplified this. Many people of the better classes did not drink raw city water. In congested districts there were greater opportunities for contact infection. A large percentage of cases occurred among immigrants from Austria, Hungary, Russia, and Italy. In conclusion, he stated that there was every prospect that Pittsburg's long and unenviable history as a typhoid city would soon close as a municipal filtration plant was nearing completion and it was hoped that this would greatly diminish the ravages of this disease, which destroyed on an average 300 of the most productive part of the population every year. Another promise of relief came from the State, which was looking toward the prevention of the further pollution of the streams throughout the State.

The Typhoid Epidemic at Scranton in the Winter of 1906-1907.—Dr. J. M. WAINWRIGHT, Chief Surgeon of the Moses Taylor Hospital, Scranton, Pa., read this paper. In regard to typhoid in Scranton previous to this epidemic he said that reliable morbidity reports were not at hand, but from the death reports it appeared that, while the disease had been constantly present, the total had not been very great as American cities went. The number of deaths was 21, 20, 11, and 25 respectively for the years 1902 to 1905. Estimating the mortality at 10 per cent., there had been during the past four years 200 cases. Reckoning the population at 75,000 to 150,000, Scranton had been heretofore comparatively free from this disease. Studying the conditions for the months previous to the outbreak, one saw that the fall rise in Scranton was not nearly as sharp as in other cities. So far as his hospital experience went, he did not notice the ordinary diarrheas which some authors had noted as precursors to typhoid epidemics. The epidemic broke from a clear sky and must have been due to a sudden and very large pollution of the water. It was interesting to note that in Philadelphia and Pittsburg, where typhoid was epidemic at all times, there was no fall rise. He described the Scranton water supply and presented a map showing that the larger part of the city was supplied by the Elmhurst reservoir. The principal tributary of this reservoir was Roaring Brook, which a few miles above ran through Moscow, a village of six to eight hundred inhabitants. This brook also ran through a hamlet of about 200 inhabitants. The Elmhurst water in previous years had been delivered over a spillway and allowed to run several miles into a storage reservoir. The distance from the inlet to the outlet in this reservoir was about 2,000 feet and the water displaced itself in from two to four days. For a number of miles a railroad ran near the brook and the railroad also ran close to the Elmhurst reservoir and another railroad actually crossed a small set bank. In October, 1906, this system was changed and the water was piped directly from the Elmhurst reservoir, cutting out the storage reservoir and taking the water from the bottom of the reservoir instead of over the spillway. According to Dr. Parke, from two to four times as many bacteria would be delivered in the water taken from the bottom of the reservoir as could be delivered over the spillway. About 50 per cent. of the bacteria would have died out in the passage of the water over the 2,000 feet of the storage reservoir. In October 20 cases were reported and in November 18. During the first week in December 11 cases were reported. This time suggested close connection with a heavy snowstorm on November 15, followed by warm rains, so that it was probable that a fecal accumulation of some time was washed into the reservoir suddenly at this time. It was a lamentable fact that the earlier cases were not reported and that proper action by the Board of Health was delayed for some days. The active period of the epi-

demic was from December 10 to January 10. Cases developing after that time were few and a number of secondary cases were due to direct communication, which could be easily traced. Considering the epidemic to have extended over December, January, and February, there was a total of 1,155 cases reported and 111 deaths; estimating the population at 115,000, one person was sick to each 100 of the population. A study of the map of the city showed very strikingly the distribution of the cases with reference to the Elmhurst water supply. The cases were very thickly grouped. In portions of the city having another water supply there were only 28 cases, and these were frequent visitors to that part supplied by the Elmhurst reservoir. He had been greatly impressed by the direct communicability of the disease. In 54 families there were two cases of the disease, in 22 of these the second person had been the attendant of the first case. In seven families there were three cases and in nine families four cases. Among these 16 families, in eight the attendant had been one of the secondary cases. It was interesting that in an unusual number of cases the secondary case was a child. The chief of the visiting nurses, Miss O'Halloran, who spent her time going from place to place fighting typhoid epidemics, considered that secondary infections were frequently due to other members of the family eating the portions of unusual delicacies which the patients left unfinished. It had been a great disappointment that, after a most painstaking search of the entire watershed by both city and State authorities, it was probable that the very multiplicity of possibilities had in itself been important in letting the exact cause escape unnoticed. The methods employed by city and State officials in fighting the epidemic did not involve anything new to sanitary officers. Close inspection was kept on the milk and no bottles were delivered to families. The spread of the disease from individual cases was combated by the visits of nurses under Miss O'Halloran. Circulars of instruction were sent to every house from which a case was reported and specific directions were given for the use of lime. He thought that the conclusions which they could draw from their lessons were: 1. All cases of typhoid ought to be promptly reported. When this was neglected grave danger signs would pass unnoticed. In going over statistics he had found a number of cities who had 20 to 25 per cent. mortality from typhoid on the face of reported cases. Health Boards, as well as physicians, were to blame for this laxity. 2. The advantages of municipal ownership. Under this system one at least eliminated the harm a private corporation might do during an epidemic in its efforts to safeguard the capital stock at the expense of further disaster to the people. 3. The numerous nuisances that had been maintained for years on this watershed showed the necessity of a rigid police inspection of the entire watershed by inspectors employed by and for the people and not by the water company. 4. Another safeguard which had been shown to be decidedly valuable was the frequent bacteriological and chemical examination of the water. The city laboratory of Scranton had not been equipped for such a purpose but soon would be. According to an authentic newspaper report there was a chemical analysis made by a private chemist early last fall which showed undoubted sewage pollution, and, if made by the city, intelligent people could have been warned that the water was unfit to drink. 5. In times of epidemic the water supply should be changed if possible. Hammer at the people the need of boiling water and milk and use all possible precaution to protect the milk supply. Prevent the spread of individual cases by visiting nurses, circulars of instruction, and the free distribution of one antiseptic. 6. Typhoid was to a very distinctly appreciable degree a directly communicable disease. 7. Physicians and sanitarians must recover from their habit of speaking of a certain amount of typhoid fever as "normal." Typhoid was a filth disease caused by imbibing more or less directly the feces of a sick man. The only normal amount for a civilized community was none at all.

The Bacteriology of the Blood in Typhoid Fever, Based on an Analysis of 1,600 Cases.—Dr. WARREN COLEMAN read this paper, which was the result of his own and Dr. B. H. Buxton's investigations. He said that in 1904 they had published an analysis of 604 cases of typhoid fever whose blood had been examined bacteriologically and 75 per cent. of those cases had shown the presence of the typhoid bacillus. In their earlier experiments they had used broth flasks, putting 2 or 3 c.c. of blood into each 100 c.c. of broth. Since August, 1906, they had used ox-bile, which not only prevented coagulation, but inhibited the bactericidal action of drawn blood. Their tests had confirmed the observations of Conradi, Kayser, and others. Their method was to take 90 c.c. of ox-bile, 10 c.c. of glycerin, and 2 grams of peptone. The mixture was distributed in small flasks containing 20 c.c. each and sterilized. Three of these flasks were used for each examination, about 3 c.c. of blood being run into each. The flasks were then incubated and the next morning streaks were made from each over the surface of litmus-lactose-agar plate. If the microorganisms were present they might be observed in five or six hours. If the growth did not redden the medium, and was found to be a bacillus resembling typhoid, it was tested for the Widal reaction with immune serum. In this way one could determine whether the case was one of typhoid fever within twenty-four hours from the time of drawing blood. Results showed that of the 1,602 cases 1,197, or 75 per cent., gave positive results. Since using the ox-bile method a much larger percentage of positive results went to show that the bacillus was present in the blood in practically all cases of typhoid fever. An analysis of the cases by weeks showed that of 224 examinations in the first week of the disease, 200, or 89 per cent., were positive. The earliest positive result was reported by Widal, who found the bacillus on the second day. Of 484 examinations made in the second week, 353, or 73 per cent., were positive. Of 268 examinations made in the third week of the disease, 178, or 60 per cent., were positive. Of 103 examinations made in the fourth week, exclusive of relapses, 15, or 26 per cent., were positive. The percentage of positive results was greatest, therefore, in the first week and steadily declined thereafter. Since using the bile method their results had been practically as successful as those of Busquet and others who had recovered bacillus from the blood of practically 100 per cent. of their cases. The various series of cases giving practically 100 per cent. of positive bacteriological results were too numerous to be accidental and compelled the conclusion that the typhoid bacillus was present in every case of typhoid fever and that failure to recover it was due to faulty technique. The diminishing percentage during the latter weeks of the disease did not indicate that the bacillus had disappeared from the blood in negative cases but pointed to a diminishing number of bacilli, whose presence imperfect methods failed to reveal. All investigators were agreed that the bacillus disappeared from the blood at or about the time that the temperature fell to normal. It was probable that the bacillus was present throughout the course of the disease, or at least within a day or two of defervescence. It seemed that in order to produce typhoid fever the bacillus must not have been present in the body and growing, but must grow in a situation whence it had free access to the blood. From work done on the absorption of the typhoid bacillus from the peritoneum and from the fact that in typhoid fever the lymph nodes and spleen contained such enormous numbers of bacilli, they concluded that in typhoid fever the bacillus first found its way from the alimentary tract to the lymphopoietic system, including the spleen, where it developed chiefly and from which it invaded the blood stream. They thought it doubtful if the bacillus multiplied in the blood, but believed that its presence there repre-

sented simply an overflow from the lymph organs. Hence the presence of the bacillus in the blood did not constitute a true septicemia. Absorption experiments showed that the destruction of the bacilli proceeded most rapidly in the blood. Hence they thought the disease was caused by the destruction of vast numbers of bacilli in the blood with the liberation of their endotoxins. The idea that the course of typhoid fever could be influenced by intestinal antiseptics was irrational because, after the invasion of the body proper by the bacillus, the battle ground shifted from the intestine to the blood. There appeared to be a definite relation in the evolution of typhoid fever between the symptoms and the bacillemia. The increased intensity of the symptoms in the earlier stages of the disease corresponded to the active growth of the bacilli. They invaded the blood stream in increasing numbers and were there destroyed. Then came the stationary period, when the ratio of growth and destruction appeared to be uniform. The steep curve period corresponded to a diminishing bacillemia, and defervescence to complete disappearance of the bacilli from the blood. They maintained that exclusive of convalescence, which was regarded as a period of repair, degenerative changes occurred only in the presence of active growth and destruction of bacilli. While bacilli disappeared from the blood at or just before defervescence, it was improbable that all the bacilli in the body had been destroyed, or relapses and post-typhoid inflammatory lesions would be impossible. The bacillemia apparently bore no relation to the type or severity of the disease except in so far as regarded number of bacilli. The bacillus was found in the blood equally, but not with the same persistence, in the mild as in the severe cases, and in the cases of short as well as of long duration. The importance of the definite establishment of the nature of these short duration cases could scarcely be overestimated from the epidemiological standpoint. The blood had been examined bacteriologically in thirty-three relapses, the typhoid bacillus having been recovered in thirty, or 90 per cent. of the cases. They now thought that a relapse was not due to reinfection with the typhoid bacillus from the intestine as the result of inestinal trauma brought about by dietary irregularities. He would not have it understood, however, that they were advocating a liberal diet in typhoid fever. They reiterated their former conclusion that the typhoid bacillus was always present in the blood before the serum reaction developed, for the reason that endotoxins must be liberated before the agglutinins could be formed. For the complete diagnosis of obscure cases by the serum reaction the tests must be made daily.

Dr. Morris Manges, speaking on the question of direct infection raised by Dr. Wainwright, asked if there could not be a direct infection from the sufferer to another rather than by the intake of polluted water. He referred to the case of a woman baker in Germany and all who used her bread developed typhoid fever. The typhoid bacilli were found in her feces; inasmuch as she prepared the food, and used the same toilet, the source of the infection was not hard to find. He recalled another case of a woman who had some intestinal complaint and fed only on a beef diet. The cook had a slight diarrhea, but the feces contained numbers of spirilla, thus showing the source of infection. Dr. Manges said that the work before Dr. Wainwright in Scranton was not an easy one if he wanted to find where the local focus was after the epidemic had passed away. In the Pittsburg epidemic the acidity of the river water was stated to have been 7 to 100,000, and yet the bacilli could not live for any length of time, it was stated, where the acidity exceeded 5. That showed Dr. Manges how fallacious the antiseptic action of the gastric juice on the typhoid bacillus was. He called attention to the unreliability of the number of cases reported, especially in villages, and recalled an instance where the Board of Health made an investigation and found that where but 8 cases of typhoid fever had been reported by physicians 72 cases had not been reported, and of these 53 occurred in children. In other words, there were nine times as many cases of typhoid fever as had been actually reported. With regard to river pollution in relation to the ice supply, Dr. Manges said that the ice companies were doing a great service; they were showing the enormous amount of pollution of the rivers, and when complaint was made to them they replied, "Why do you pollute the water where we get the ice?"

Dr. Sedgewick said that "food, fingers, and flies" was the summary of infection.

Dr. Libman discussed the paper read by Dr. Coleman.

Drs. Wainwright and Coleman closed the discussion.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, Held February 19, 1907.

Dr. Glentworth R. Butler in the Chair.

Medicine, Education, and Social Work; Their Necessary Relations.—Dr. Richard C. Cabot of Boston, Mass., read this paper. He alluded to the fact that at the exercises celebrating the opening of the new Harvard Medical School, President Eliot and Dr. Welch had summed up the achievements of medicine in the past and the directions of its future development. They had referred to the necessity of the study of animal diseases and to the importance of comparative pathology. The increased importance of the study of insects had also been alluded to. They had referred to the growth of preventive medicine and to the achievements of health officers. The pride of the listeners had been excited, yet the speaker, who had been one of them, had wondered whether the audience realized how small a proportion of sickness would be removed even if all infectious diseases were abolished. In the twenty-five years that had elapsed since Koch discovered the tubercle bacillus, the tendency had been to think of infectious disease as coextensive with disease in general. Prof. A. E. Wright had shown somewhat this same tendency. It was a fallacy that the bacteria were the cause of all disease, although all the recent medical heroes had won their victories in the treatment of infectious diseases. It had to be realized that there was a large residuum of diseases, constituting one-half of all disease, which would remain after all infectious disease had been abolished. The speaker had tabulated the 10,000 cases that had been treated in the outpatient service of the Massachusetts General Hospital during the past year, and found that from 30 to 40 per cent. of all these cases were functional in character. They included constipation, neurasthenia, insomnia, obesity, alcoholism, etc. It was probable that in private practice the proportion of functional disease was still greater, probably one-half of the whole. These cases were certainly not to be treated by means of antitoxins. They were to be combated rather by building up good habits and improving the environment of the patients. It was hence to be realized that medicine was necessarily bound up with education. By means of the latter were to be inculcated good habits of eating, sleeping, working, etc. This was to be accomplished through the agency of demonstrations, explanations, public lectures, reading, and other channels. The cooperation of schools, institutions, and sanatoria had to be enlisted. It was necessary to investigate the finances of the patient. It was sometimes necessary to take him out of his family or improve the family surroundings. This was properly the sphere of the social worker, but it was rightly also the sphere of the physician. It did not mean that the latter was to become a jack-of-all-trades. Drugs were not the only remedies for disease. Faulty habits and faulty environment were causes that had to be eradicated. In former years the prescription was the main thing handed out to the dispensary patient. Later on this

was supplemented by the list of printed directions and warnings. But it was common knowledge that the latter were rarely effective. One year ago the speaker had organized in the Massachusetts General Hospital a department of social work. He had become tired of seeing patient after patient who could not be reached by means of medicine and surgery. One of the first things done was to follow up these patients. The victims of tuberculosis were instructed how to build their platform and put up their tent on the roof, or if the latter was not available, how to sleep in the yard. It was frequently necessary to advise the patient to take a vacation, but no inquiry was made as to his means of doing so. If a father, he had his family to support; if a mother, she had the household to look after. The response of the patient to this advice was usually, "But I can't, doctor," and the latter responded by calling out, "Next patient." The department of social work thus served to fill the wide gap between good intentions and their fulfillment. Social work and education were therefore necessary factors if the physician was to do any real good to his patients. One-fifth of the patients in the dispensary and in private practice needed simply proper instruction in hygiene. The simple life which suited the needs of one patient would drive another to drink. There was also organized a hygiene class which was presided over by a graduate nurse. Another nurse was employed who gave her whole time to following up cases of infant feeding to their homes, and to instruct and direct mothers in the proper preparation of their infants' foods. Wherever was found a good physician there was found one who was actively engaged in some kind of educational work. Medical men wrote more than any other professional class. This was not merely for advertising purposes. There was a natural kinship between medical writing and teaching. The colleges, public schools, and lecture platform were the means through which the physician could reach the individual and the family. Public medical lectures had been established at the Harvard Medical School and were delivered every Saturday and Sunday. As an educator the physician had long been recognized; as a social worker he was only beginning to exercise his opportunity and privilege. There were two other fields through which the physician was to exercise his influence, namely, psychotherapeutics and public health. The speaker did not pretend to do more than to refer to these subjects in a synoptical way. In psychotherapeutics one dealt with the patient from his sociological aspects. There was the need of studying each patient's work, with the view of determining its effect upon him; whether it produced worry, internal friction, restlessness. Was it suited to his capacities or tastes? It was also necessary to consider the domestic and sexual relations of the patient. Was the patient stoical, cynical, complacent, fatalistic, reckless, etc.? The physician also had to reckon with his inheritance. The relation of the physician to his patient through the medium of the public health was a subject that had grown so fast in the past decade that it was a source of wonder whether there would be any private practitioners in the future. The medical inspection of schools was a recent development. In the schools the physician had put his hands upon disease in the most critical period of life. His advice guided the construction of public playgrounds, school houses, and the solution of problems of ventilation. Through departments of health the physician sought the prevention of malaria, diphtheria, etc. The free distribution of quinine and antitoxin was a natural corollary of the State's intervention. The foundation of free sanatoria, the regulation of dangerous trades, the enforced renovation of filthy slaughter houses, the abolition of dangerous house conditions, the control of venereal diseases, were all evidences of the public character of modern medical endeavor. One could not think of a single nameless profession of which medicine, social work and education were not branches. This trinity formed a striking contrast to the professions of conquest, namely, war, business, and athletics. War was usually business, and business was usually war. In medicine the aim was development. It was to heal by teaching and to teach by healing. Whenever medical work was good work it merged with that of the educator and the social worker.

Treatment of Chronic Heart Diseases.—Dr. Theodor Schott of Nauheim, Germany, read this paper. He said that twenty-five years had elapsed since the time when, apart from hygiene, there were only two means of dealing with chronic heart disease, namely, the enforcement of rest and the administration of digitalis. Particular attention had been paid to pathological anatomy and diagnosis, but treatment was neglected. During this quarter of a century three methods of physiological therapeutics had been developed. They were the Swedish gymnastics, Oertel's treatment, and the Schott treatment. For the sake of completeness the speaker next discussed the rôle of drugs in heart disease. There was a remarkable increase in the number of remedial agents. Digitalis was used either with or without digitonin or digitoxin. Sometimes its cumulative effect necessitated a resort to strophanthus. In the presence of a relaxation of the heart muscle, strychnine elicited strong contractions, but it soon elicited abnormal irritability, followed by a depression of the heart's action. Erythrol tetranitrate and nitroglycerine were valuable chiefly for their effects on the arteries. The salts of mercury, as calomel, were not strictly heart remedies. They influenced the heart indirectly through their diuretic action. Morphine failed to tone up the heart, but it was not to be discarded in the case of cardiac pain and oppression, in which a strong dose might be administered. The speaker next discussed the physiological methods of treatment. It was the Dublin physician, Stokes, who first favored mountain climbing in the treatment of heart disease. His views were forgotten until twenty-five years later, when Oertel took them up, with the addition of a restriction in the amount of liquids allowed to the patient. The principle of this restriction was that by means of it the circulation was facilitated. The Schott treatment granted that the heart was strengthened by climbing; but diet was an important accessory. On the other hand, diminution in the supply of liquids was not necessary. The composition of the blood was constant, irrespective of the amount of liquid that the patient took. The diet selected was that best adapted to maintain the nutrition of the patient. It was desirable to prevent the accumulation of fat and to cause an increase in the amount of muscle tissue. Experience showed that a rapid diminution in the weight caused bad effects. The mechanical part of the treatment aimed at a development of cardiac strength by means of an increased action of the muscles. The original treatment had been devised for fatty heart. The theories that had been advanced in favor of the Oertel treatment were for the most part erroneous. Instead of a low diet, the patient often required an abundance of food. Climbing was resorted to only after the heart had been strengthened by other treatment. Oertel gave an erroneous interpretation to the mechanical treatment. The use of Swedish movements had no scientific basis. The exercises devised by Zander were carried out independent of the position of the patient's body. They caused an increase in the musculature and an acceleration of the circulation. They required continual supervision, and a regulation of the resistance. Failures were frequent, for an exact determination of the resistance was difficult. The expense of the apparatus was another drawback. The speaker next discussed the method of physiological gymnastics. It was first introduced in 1872. It was then found that mineral baths were effective in rheumatism complicated with cardiac disease. The speaker's late brother had found that the physiological cure by means of mountain climbing had produced the best results. They had both found that the regulated baths had the same effect as the mountain climb-

ing- in toning up a weak heart. In this condition one dealt with the inadequacy of the heart to impel blood, which usually led to a dilatation of the heart. But not every dilatation caused a failure of compensation. Only the former kind of dilatation required treatment. If the dilatation was due to inability of the heart to contract, or to a valvular lesion, there was caused a congestion of the heart itself. By means of baths and gymnastics the heart was rendered better able to contract. There resulted hyperkinesis and hypertrophy, and an increased pressure in the arterial system. The heart was relieved of the overpressure due to excessive filling. The heart was made to beat more slowly and vigorously. These results were confirmed by others, and also by means of animal experiments. Some observers explained the action of the baths on the basis of a derivation of blood to the surface. In the speaker's opinion this view was not correct. Comparing the effects of the baths with those due to the mountain climbing, it was found that those due to the baths were not as strong, but were more enduring, while those due to the gymnastics were more marked, but were less persistent. They both caused a decrease in congestion and cyanosis, a reduction in the pulse, an increased diastole. In suitable cases, arrhythmia disappeared. The speaker cited the case of a patient fifty-two years of age, suffering from mitral insufficiency, associated with myocarditis and pulmonary emphysema. He had had two attacks of embolism of the lung and had congestion of the limbs. His condition was wonderfully improved by the combined balneological and gymnastic treatment. Percussion revealed the good effects upon the heart. This reduction in size was also shown by means of changes in heart tracings and by means of skiagrams. The defect in skiagrams was due to the impossibility of getting the patient into the same position each time. On auscultation there was a change in the cardiac sounds; weak sounds became more audible, and hitherto inaudible murmurs became audible. Diuresis became more potent through balneological treatment. The whole organism gained strength, venous congestion was diminished, and there was a greater volume of blood in the arterial system. Owing to the larger amount of blood in the coronary arteries, the nutrition of the heart muscle was improved. There was an increase in the amount of hemoglobin. The balneological part of the Schott treatment had been described by many observers, including Osler, Babcock, Anders, etc., and it was impossible to give more than the general rules for its application. It was an agent of great power and had to be practised with great caution and with frequent observation of the patient, for the clinical picture often changed. As the treatment progressed it was necessary to lower the temperature of the water. It was always advisable to observe the patient before, during, and after the bath. It was necessary to begin with brine containing 2 to 3 per cent. of sodium chloride, and the same percentage of calcium chloride. The bath was given at a temperature of 93° and lasted ten minutes. The temperature was not to be lowered during the first week. In the anemic patient it was prudent to give the bath at 95°. This temperature was not to be exceeded even with the combination of rheumatism and heart disease. In such cases cooler and shorter baths were more desirable. If the patient was quiet, he first experienced chilliness and then comfort, which was due partly to the heating and partly to the composition of the water. If the reaction did not occur within one minute, it was necessary to have the temperature of the water higher and kept so throughout the entire bath. Sometimes a second chilliness occurred. This was avoided by shortening the duration of the bath. If the baths were well borne, the sodium chloride, and particularly the calcium chloride, were increased. Later carbon dioxide was added. At first the percentage of this was weak. It was supplied from large underground basins containing 1,000 cc. of free carbon dioxide to each liter of water. Later the baths contained from 1,200 to 1,500 cc. of CO_2 to each liter of water. Still later there were administered effervescent running baths, the water flowing with a pressure of from 1 1-2 to 2 atmospheres and at a temperature of 90°, also containing 2,000 cc. of CO_2 to each liter. This was the strongest form of bath given. Most patients required an intermission in the treatment. The bath rarely exceeded twenty minutes in duration and was followed by a brisk rub. The patient then went to bed for one hour. Later baths were given cooler and were more prolonged. They also contained mother-lye, which consists of 40 per cent. chlorate of lime. It was supposed that the movable molecules of CO_2 penetrated the skin. The cure was best administered in the summer, and for mild cases it lasted from four to six weeks, and was followed by a short stay in a locality of moderate altitude. Severe cases required a treatment lasting several months. The winter cures were given in a warm southern climate. The Nauheim baths could be made artificially, either with the aid of the Nauheim bath salts, or with the aid of NaCl and $CaCl_2$ in proper proportions. The CO_2 is prepared by means of the interaction of HCl and $NaHCO_3$, the quantity of the last being at first 100 grams per bath, and later increased to 500 grams. The HCl had to be pure and evenly distributed, and the CO_2 was to be developed slowly, its evolution lasting one-half hour. The artificial Nauheim baths had come into general use. It was an erroneous view that only the CO_2 was the active ingredient. Good results were obtained by the gradual increase of all the ingredients. It was observed that unsatisfactory results were obtained with many patients owing to the inability to properly regulate the bath. Long experience was necessary to do this. It was important also that the patient should be relieved from family and business cares, and should be on a proper diet. Besides, the strongest baths could not be made artificially. The baths wielded their influence through the sensory nerves, while the graduated gymnastics acted through the motor nerves. The latter brought the antagonistic muscles into action. Each exercise was developed slowly and the resistance so adjusted as to permit freedom of respiration. The various muscles were alternately brought into use, and when the series were completed the exercises were gone over again. The movements comprised a great variety, involving the movements of flexion, extension, adduction, abduction, and rotation. It was not difficult to teach a person of intelligence to become a gymnastic director. It was an advantage to train a member of the patient's family for this work. One of the rules was not to grasp or impede any part of the patient's body. Another was that no new exercises were to be begun until the pulse became slower and the breathing more easy. Later on mountain climbing was to be resorted to. Its contraindications were aneurysm of the heart or of the larger arteries, arteriosclerosis, apoplexy, and embolism. In cases of cardiac excitation, tranquillity was secured in a short time by means of tapottement. Vibratory massage was also useful. Ice-bags were also effective in quieting the heart. For this purpose also electricity, more recently the sinusoidal currents, were employed. The diet was to be a mixed one, with the avoidance of stimulating beverages, and with precautions against a distended stomach. The use of tobacco was either restricted or entirely prohibited. The physician had to take account of the question of social stress, occupation, and marriage. In the face of the Schott treatment, scepticism had in large measure vanished.

Bleeding Hemorrhoids.—Chloride of calcium is recommended by Boas as a hemostatic in this condition. Every morning after the bowels have moved 20 c.c. of a 10 per cent. solution of this agent is injected into the rectum and retained for a little while. If the tendency to hemorrhage is pronounced, a second injection should be made at night. If the drug is not chemically pure it may produce burning, pain, and tenesmus.—*Therapie der Gegenwart.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Medical Board of Examiners of the State of Pennsylvania.

December 4 to 7, 1906.

ANATOMY.

1. Name the arteries through which blood would pass from the heart to the thumb and the veins through which it would return from the thumb to the heart.
2. Describe the formation of the palmar arterial arches, and give anatomical landmarks for location of the same.
3. Describe the bony relationships and landmarks of the elbow joint.
4. Describe the anatomical structure of the female perineum.
5. Describe the structure and anatomical relationships of the female mammary gland.
6. Describe the anatomical structures entering into the formation of (a) the internal and (b) the external abdominal rings.
7. What muscles are attached to the great trochanter of the femur?
8. Describe the appendix vermiformis; give its relations and the external landmarks of its location.
9. Describe the superior maxillary bone.
10. Describe the uterus and give its relations and nerve supply.

PHYSIOLOGY.

1. Define metabolism. Cite an example.
2. Enumerate four conditions to be observed in taking the pulse, and describe what each signifies.
3. Over what functions of the body does the cerebellum preside?
4. Describe the thermal and chemical changes in muscle, as the result of exercise.
5. How is respiration influenced by the nervous system?

CHEMISTRY.

1. What is hemoglobin; name some of its properties and give a chemical test for it.
2. What chemical reaction takes place when hydrogen dioxid is applied to sloughing wounds?
3. Describe a reliable test for the detection of free hydrochloric acid in gastric contents.
4. When testing for albumin in urine, how do you determine between it and other coagulable proteids?
5. When testing for glycosuria with Fehling's solution, how do you determine whether the reaction is that of sugar or some other reducing agent?

MATERIA MEDICA.

1. Classify electricity as a remedial agent, (*b*) and name the different forms useful in the treatment of morbid conditions, (*c*) describe how they are applied.
2. Name five vegetable and three mineral astringents, describing method of administration and dose in each instance.
3. Name and describe three antiseptics useful in internal medication.
4. Describe and classify the important active principle of each of the following drugs: Hydrastis canadensis, veratrum viride, and lumulus.
5. Write a complete prescription for a child of three years suffering with pertussis. (or) Discuss ergota, stating to what alkaloid or active principle it owes its therapeutic activity.

PATHOLOGY.

1. Describe the cardiac changes that occur in mitral stenosis.
2. Describe the alterations that occur in the respective coats of an artery which is the seat of endarteritis obliterans.
3. Describe two methods of wound repair.
4. Describe the pathological changes occurring in dry gangrene.
5. Describe the various forms of acute salpingitis

DIAGNOSIS.

1. Give a practical method of differentiating gastroptosis and gastrectasis.
2. Differentiate chronic parenchymatous nephritis and chronic interstitial nephritis.
3. Describe a case of tabes dorsalis and differentiate the condition from multiple sclerosis.
4. State the diagnostic symptoms of progressive pernicious anemia, and what changes in the blood aid in the diagnosis.
5. Differentiate acute synovitis and acute articular rheumatism.

THERAPEUTICS AND PRACTICE OF MEDICINE.

1. What are the symptoms of exophthalmic goiter, and what are some of the measures employed in its treatment?
2. What are the symptoms of abscess of the lung?
3. Describe the treatment of a case of sunstroke.
4. What are the symptoms of a typical case of acute lobar pneumonia?
5. Describe the treatment of a case of diphtheria.
6. Describe the symptoms and treatment of a case of acute tonsillitis.
7. Describe the symptoms of a case of chronic lead poisoning and outline a method of treatment.
8. What are the symptoms of poisoning by belladonna, and how would you treat such a case?
9. Name some of the indications and contraindications of ergot.
10. Name some of the most important uses of the preparations of opium.

OBSTETRICS.

1. Give the maternal causes of dystocia, and methods of treatment.
2. Give the most frequent causes of puerperal mammary inflammation and give treatment.
3. How would you deliver a child when face is presenting with chin posterior?
4. Describe the various methods of preventing infection during childbirth.
5. Give symptoms and treatment of placenta prævia.
6. Give the indications for version, and detail the operation.
7. Give the methods of resuscitation in the apparently still-born.
8. What symptoms would lead you to suspect threatened miscarriage?
9. Name the cause and give the diagnosis of pelvic hematocele.
10. To prevent laceration of the perineum, describe the proper method of delivering the head.

SURGERY.

1. Give the diagnosis and treatment of transverse fracture of the patella.
2. Describe the symptoms and give the treatment of the several forms of gangrene.
3. Define surgical shock and give treatment.
4. What are the symptoms of "Colles' fracture," and give treatment.
5. Describe a backward dislocation of the hip joint, and give treatment.
6. Describe the objective and subjective symptoms of strangulated inguinal hernia, and an operation for the relief of the same.
7. Give the symptoms and treatment of fracture of the vertebral column with compression of the spinal cord.
8. Enumerate the recognized degrees of burns, and describe the treatment for the second degree.
9. Describe surgical methods for treatment of stricture of the male urethra, with respective indications.
10. Give a minute description for the proper administration of ether for general anesthesia.

HYGIENE.

1. Name three diseases due to animal parasites, and tell how their introduction into the human system may be prevented.
2. What are the relative effects on health of altitude, sea air, humidity and sunshine.
3. What diseases are communicated by stools and sputum, and what are the best methods of prevention of communication?
4. Name three exanthematous fevers and describe a rational effective method of quarantine, giving the proper duration thereof.
5. Give the disadvantages and dangers of cold storage foods.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Medical Board of Examiners of the State of Pennsylvania

December 4 to 7, 1906.

ANATOMY.

1. The *arteries* through which blood would pass from the heart to the thumb, are:—Aorta, innominate (on right side only) subclavian, axillary, brachial, radial, and princeps pollicis or dorsalis pollicis. The *veins* through which it would return to the heart are arranged in two sets:—(1) *Superficial veins*:—venous plexuses, superficial radial, cephalic, axillary, subclavian, innominate and su-

perior vena cava. And (2) *Deep veins*:—The venæ comites of the radial or deep radial, brachial, axillary, subclavian, innominate, and superior vena cava.

3. If the forearm is extended, the internal condyle of the humerus, the tip of the olecranon, and the external condyle will all be found on the same transverse line. In extreme extension the tip of the olecranon is slightly above the level of the condyles. If the forearm is flexed to a right angle, the tip of the olecranon is immediately below the condyles.

PHYSIOLOGY.

1. Metabolism is a name given to the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds:—(1) anabolic, or constructive, and (2) catabolic, or destructive. The changes produced in the cells by the oxygen or nutrition conveyed by the blood, come under the class of anabolic changes.

2. (1) Its *frequency*: this gives the rate of the heart beats. (2) its *compressibility*: this denotes the force with which the heart is beating. (3) Its *tension*: this denotes the peripheral resistance, and also the state of the arterial walls. (4) Its *regularity* or *rhythm*: this denotes the regularity (or otherwise) of the heart's action in force or rhythm.

3. Muscular coördination, and equilibrium.

4. There is an increase in heat production, and consequently a rise of temperature. The muscle becomes acid in reaction, due to the development of sarcolactic acid; at the same time there is an increased consumption of oxygen, and more carbon dioxide is set free.

CHEMISTRY.

1. Hemoglobin is the coloring matter of the blood. It exists in the blood in two forms, as hemoglobin and as oxyhemoglobin. Chemically it is a protein; its molecule is very complex, and consists of the elements carbon, hydrogen, oxygen, nitrogen, iron, and sulphur. It is a crystalline solid, and is not diffusible. Hemoglobin is the means by which the oxygen is carried by the blood to the tissues. It readily enters into combination with other gases such as carbon monoxide, nitrogen dioxide, and hydrocyanic acid. It is soluble in water, insoluble in alcohol and ether.

Test. Mix some of the suspected liquid with a few drops of a saturated solution of sodium chloride, evaporate to dryness on a microscopic slide, add a drop or two of glacial acetic acid and gently warm; crystals or hemin or hematin will form on cooling, and may be seen under the microscope.

2. Oxygen is liberated and effervescence occurs. It acts as an antiseptic.

3. The phloroglucin-vanillin test:—The reagent is made by dissolving two grams of phloroglucin and one gram of vanillin in 100 cc. of alcohol. The test is made by taking a few drops of the filtered gastric contents and an equal quantity of the freshly-prepared reagent; these are then mixed in a porcelain dish, and evaporated over a water bath; in the presence of free hydrochloric acid a brilliant red color is produced, beginning at the upper border.

4. By using the four tests, as mentioned in the following table (compiled from Croftan):

	The Boiling Test	The Nitric Acid Test	The Potassium Ferrocyanide Test	The Biuret Reaction
Serum Albumin.	Positive.	Positive.	Positive.	Positive
Serum Globulin.	Positive	Positive	Positive. On the addition of acetic acid there is a precipitate which is redissolved on the addition of more acid.	Positive
Nucleo-Albumin	Negative	Positive	Positive. On the addition of acetic acid there is precipitate which does not redissolve on the addition of more acid	Positive
Albumoses	Negative	Positive. The precipitates formed in the cold disappear on heating, but re-appear on cooling.	Positive. The precipitates formed in the cold disappear on heating, but re-appear on cooling.	Positive
Peptones	Negative	Negative	Negative	Positive

5. On getting a positive result with Fehling's solution, a further examination should be made by the fermentation test. If fermentation occurs, it indicates the presence of sugar. The phenylhydrazine test may also be applied; it does not react with reducing agents other than sugar.

MATERIA MEDICA.

1. Bartholow classifies electricity among the agents used to excite the functional activity of the spinal cord and the sympathetic.

(*b*) Static or frictional, magnetism, galvanism, faradism.

2. *Five vegetable astringents*:—Hammamelis, dose of the fluid extract, ℥xxx. Gambir, dose, gr. xv. Kino, dose, gr. vijss. Hematoxylon, dose of the extract, gr. xv. Tannic acid, dose, gr. vijss.

Three mineral astringents:—Alum, dose, gr. vijss. Copper sulphate, dose, gr. 1/5. Silver nitrate, dose, gr. 1/5. Of the above silver nitrate is only applied locally as an astringent; all the others can be used internally or locally.

3. Phenol, creosote, and phenyl salicylate (salol).

4. *Hydrastis canadensis*: berberine and hydrastine, both alkaloids. *Veratrum viride*: jervine and veratrine, both alkaloids. *Humulus*: lupuline, an alkaloid.

5. ℞ Tincturæ belladonnæ ℥j
Extracti cannabis indicæ gr. jss
Glycerini ℥j
Tincturæ aurantii amari ℥ijss
Aquæ destillatæ q. s. ad ℥iv. Misce.
Signa:—Two teaspoonfuls every four hours.

The composition of ergot is indefinite; the chief constituents are:—Ergotine, ergotinine, ecboline, sphacelic acid, ergotinic acid, cornutine, tannic acid, and other substances. Most of these ingredients contract the blood vessels; the cornutine, in addition, is credited with the chief part in contracting the uterus.

DIAGNOSIS.

1. The stomach should be inflated; the diagnosis is then made by outlining the stomach. In both conditions the lower border of the stomach is depressed below the umbilicus. But in *Gastroptosis*, the upper border and pyloric end are also depressed, and the stomach assumes a vertical position; whereas in *Gastrectasis*, the upper border and pyloric end are but slightly depressed.

2. The following table is from Millard's work on *Bright's Disease*:

CHRONIC PARENCHYMATOUS NEPHRITIS.	CHRONIC INTERSTITIAL NEPHRITIS.
The urine is always albuminous.	Urine not constantly albuminous.
Urine usually scanty.	Urine usually abundant.
Dropsy and edema almost always occur.	Dropsy seldom or never present; sometimes slight edema.
Hypertrophy of the heart seldom exists.	Some hypertrophy of heart, with increased arterial tension, almost always present.
Specific gravity of urine usually higher than the normal. Urine darker and with less of a soapy appearance.	Urine generally of a light color and low specific gravity.
Uremic symptoms less frequent.	Uremic symptoms are met with in their most pronounced form, and in severe cases usually occur.
Epistaxis and cerebral hemorrhages rare.	Epistaxis and cerebral hemorrhages frequent.
Occurs most frequently before the age of forty.	Occurs most frequently after forty.
Blood corpuscles and connective tissue shreds more frequently found	Absent.
	Development more gradual, the health of patient often less impaired, and duration longer.
Casts more numerous and in greater variety; waxy, granular, fatty, and hyaline casts occurring.	Casts rare, the hyaline variety being most frequently met with.
Epithelia from the kidney and pus corpuscles more numerous.	Kidney epithelia and pus corpuscles scanty, and occasionally absent.
Urates and phosphates predominate; oxalates rare.	Oxalate of lime almost always occurs.
Albuminous retinitis rare.	Albuminous retinitis common.
Gangrenous erysipelas and phlegmonous swellings more common; also dyspepsia and anemia.	
Visceral complications not uncommon.	Visceral complications rare.
Atheroma of arteries rare.	Atheroma common.

3. In *multiple sclerosis* there will be found increased reflexes, a greater loss of muscular power, volitional tremor, nystagmus.

In *locomotor ataxia*, there are: lightning pains, loss of knee jerk, ataxia, but not much loss of muscular power, Argyll-Robertson pupil.

4. Pallor, indisposition to exertion, palpitation of heart, flabbiness of muscles, poor appetite, languor, edema, debility, hemic murmurs, water-hammer pulse, dyspepsia, diarrhea. The blood changes are:—great diminution in the number of red corpuscles, hemoglobin is relatively increased, the red cells vary considerably in size and shape, and there are present nucleated red corpuscles of all sizes and in varying numbers. The white corpuscles are either unchanged or slightly diminished in number.

THERAPEUTICS AND PRACTICE OF MEDICINE.

1. Tachycardia, enlargement of the thyroid gland, exophthalmos, and tremor are the cardinal symptoms. Other symptoms are:—pigmentation of the skin, edema and moisture of the skin, impaired nutrition, anemia, and mental irritability and depression.

Among the measures employed in its treatment are:—iron, digitalis, ergot, the bromides, rest in bed with application of ice bag over the heart or thyroid gland, electricity, thyroid or thymus extract, iodine, opium, section of the cervical sympathetic nerve, and partial thyroidectomy.

2. Chills, high fever, signs of a cavity or of general pyemia; the sputum is offensive and yellowish or greenish in color, and contains elastic fibers or fragments of lung tissue.

3. The first thing is to lower the body temperature. The patient should be put into a cold bath, rubbed with ice, and given a hypodermic of some active antipyretic; he should be wrapped in a wet sheet, and if necessary may receive ice water enemata. Further symptoms may be treated as they arise; for heart failure, digitalis and strychnine may be given hypodermatically; for convulsions, chloral or chloroform.

7. *Symptoms*:—colic, chiefly round the umbilicus; cramps in the flexor muscles, muscular paralysis (wrist drop); pain in some of the joints; blue line on the gums at the border of contact with the teeth; anemia; constipation; eclampsia and nervous symptoms may also be present.

Treatment:—The patient should be removed from the source of harm, personal cleanliness in every way must be enforced, a hypodermic of morphine (gr. ¼) may be given for the pain, then hot baths, Epsom salts, diuretics, electricity, iron, and strychnine are all useful.

8. *Symptoms* of belladonna poisoning:—In the first stage, that of delirium, there are dryness of the throat, thirst, difficulty of deglutition and spasms upon swallowing liquids, face at first pale, afterwards highly reddened, pulse extremely rapid, eyes prominent, brilliant, with widely-dilated pupils, complete paralysis of accommodation, disturbances of vision, attacks of giddiness and vertigo, with severe headache, followed by delirium, occasionally silent or muttering, but usually violent, noisy, and destructive, accompanied by the most fantastic delusions and hallucinations. Usually the urine is retained, and the body temperature is above the normal. The delirium gradually subsides, and the second stage, that of coma, is established, with slow, stertorous respiration, and gradually failing pulse, until death occurs from respiratory or cardiac paralysis, or sometimes in an attack of syncope during apparent amelioration. (Witthaus.)

Treatment:—The stomach should be washed out; pilocarpin may be given hypodermatically; morphine may be given cautiously during the period of violent excitement; cold applications to the head and artificial respiration are useful. There is no chemical antidote.

9. *Indications*:—To promote uterine contractions during third stage of labor; fibroids, menorrhagia, post-partum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headaches, laxity of sphincters of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

Contraindications:—In labor if the birth canal is not free, and the os uteri is not dilated.

HYGIENE.

1. (1) Malaria, (2) Trichinosis, and (3) Tapeworms.

(1) In the case of *Malaria*:—the destruction of all mosquitoes, or the prevention of inoculation.

(2) In the case of *Trichinosis*:—the meat (of the pig) should be thoroughly cooked; mere curing or smoking will not do. Further, there should be systematic inspection of the meat sold, and the animals should not be fed with the refuse of slaughter-houses.

(3) In the case of *Tapeworms*:—all meat should be thoroughly cooked, and vegetables should be thoroughly cleansed.

3. Diseases communicated by the *Stools*:—Typhoid fever, dysentery, cholera, intestinal tuberculosis. To prevent communication of these diseases, the stools should be received in vessels containing a disinfectant solution in greater quantity than the expected discharge. The whole should be thoroughly mixed and allowed to stand for at least one hour before final disposition.

Diseases communicated by the *Sputum*:—Pulmonary tuberculosis and pneumonia. To prevent communication of these diseases, the sputum should be received in vessels containing disinfectant solution, and kept covered when not in use. The contents of the vessel should be burnt, and the vessel washed with disinfectant solution. The patient should not wear either beard or mustache.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION		
Alabama*	W. H. Sanders, Montgomery	Montgomery	April	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	April	1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	April	9
California	Chas. L. Tisdale, Alameda	San Francisco	April	16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	9
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W. C. Woodward, Washington	Washington	April	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta / Augusta	April / May	30 / 2
Idaho	J. L. Conant, Jr., Genesee	Boise	April	2
Illinois	J. A. Egan, Springfield	Chicago	April	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	—
Kansas	T. E. Raines, Concordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St, New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Augusta	July	9
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	W. S. Fullerton, St. Paul	St. Paul	April	2
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	St. Louis / Kansas City	April	16
Montana*	Wm. C. Riddell, Helena	Helena	April	2
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May	6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C. F. Wheelock Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	May	21
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	June	—
Oregon*	B. E. Miller, Portland	Portland	May	8
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June	—
Rhode Island	G. T. Swarts, Providence	Providence	April	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	April	1
Vermont	W. Scott Nay, Underhill	Burlington	July	9
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Wheeling	April	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

California.—In order to obtain a duplicate certificate to practise medicine in this State, it will be necessary for physicians whose certificates were destroyed in the San Francisco fire to present to the Secretary of the Board an affidavit as to the loss of the original certificate. The applicant will also have to be identified. The fee for such certificate will be $1.00.

New York.—During the year ending July 31, 1906, the total number of candidates examined by all three boards was 1,035. Of those examined by the Regular Board: (1) 379 took the whole examination; of these 292 passed, and 87, or 22.9 per cent., were rejected. (2) 292 took the first half; of these 258 passed, and 4, or 1.5 per cent., were rejected. (3) 270 took the final half; of these 264 passed, and 12, or 4.3 per cent., were rejected. The rejections per topic for the academic year were as follows: Anatomy, 43; Physiology and Hygiene, 44; Chemistry, 27; Surgery, 41; Obstetrics, 46; Pathology and Diagnosis, 40; Therapeutics Practice and Materia Medica, 10; Average rejection per topic, 36. Honor men for the year: State Board, 0; Homeopathic Board, 3; Eclectic Board, 0.

Therapeutic Hints.

Flatulence.—

℞ Mag. carbonat.
Sacchar. alb. ..... āā 10.0
Bismuthi subsalicylat.
Salolis.
Fruct. cari. ..... āā 5.0
M. ft. pulv. Sig.: A teaspoonful after eating.

—Kantorowicz.

Lead and Opium Wash.—A simple and cheap method of prescribing this valuable lotion is as follows:

Tr. Opii
Liq. Plumbi Subacetat. ..... āā ℥ss

—*Wisconsin Medical Journal.*

M. Sig.: Add entire contents of bottle to one pint of water and apply locally.

Pyemia.—

℞ Syr. ferri hypophosphitis.
Liq. hydrogen peroxide. ..... 10 vol
Glycerinæ ..... āā 15.0
Aquæ ..... q.s. ad. 180.0
M. Sig.: Tablespoonful three times a day.

—Guiteras, *Medical Review of Reviews.*

Scarlet Fever.—Early in the disease Wiest begins to give the following:

℞ Tr. digitalis (fresh) ..... ℥ss
Liq. ammon. acetat. (fresh) ..... ℥iss
Spt. æther, nit. ..... ℥ii
Syr. tolu. ..... ℥ss
Aquæ cari. ..... ℥ss
M. Sig.: Teaspoonful every 3 hours.

For the itching Shollenberger uses an ointment having this composition:

℞ Menthol ..... gr. x
Ung. zinci oxidi. ..... ℥ss
Lanolini ..... q.s. ad. ℥ss
M. Sig.: Apply locally.

—*Denver Medical Times.*

Pruritus Ani.—Drueck says that when the pruritus is due to proctitis, hemorrhoids, fissure, ulceration, fistula, prolapse, or polypus, and the patient refuses to submit to surgical treatment, or in senile, debilitated, or hemorrhagic subjects, much relief may be given by the use of the following:

℞ Calomel ..... gr. 30
Menthol ..... gr. 10 to 20
Vaseline ..... ℥ i
Sign.—Apply after each bowel movement, bathing the surface carefully, and sopping it dry.

For eczema of the anus he employs:

℞ Picis liquidæ ..... ℥iv
Ung. belladonnæ ..... ℥ii
Ac. carbolici ..... ♏x
Adeps lanæ ..... ℥ii

Bathe the parts repeatedly in water as hot as can be borne, and in green soap, to remove the thickened scales, and to deplete the local circulation. In exaggerated cases, a solution of caustic potash, five grains to the ounce, may be used. A cloth may be used to sop the hot water on the parts, but do not allow any rubbing.

—*Chicago Medical Recorder.*

Chordee.—W. J. Robinson states that the following are useful prescriptions:

℞ Codeinæ phosph. ..... gr. 1-3
Heroini hydrochlor. ..... gr. 1-12
Camphoræ monobrom. ..... grs. 2
Lupulini optimi. ..... grs. 3
Ext. rhamni purshianæ. ..... grs. 2
M. Ft. caps. No. 1. Sig.: Take one capsule before retiring.

Sometimes suppositories prove the most efficient, and the following is an excellent combination:

℞ Codeinæ phosph. ..... gr. 1-2
Atropinæ sulph. ..... gr. 1-120
Antipyrinæ ..... gr. 5
Ol. theobromæ ..... gr. 15
M. Ft. suppos. No. 1. Dentur tales doses No. 12. Sig.: Insert one before going to bed; another one may be used during the night.

To relieve the actual attack, the patient should wrap a cloth or towel wrung out of ice water about the member, or put it in hot water, as hot as can be borne. If the desire to urinate is present at the same time with the chordee, the patient should urinate in the water. Swallowing pieces of ice has relieved many patients, but whether suggestion plays a part here or not is hard to determine.

—*American Journal of Clinical Medicine.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 16 and 23, 1907:

	Week of Mar. 16		Week of Mar. 23	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	435	209	410	169
Diphtheria	256	37	318	34
Measles	429	13	444	13
Scarlet Fever	365	25	375	19
Smallpox	—	—	3	—
Varicella	106	—	99	—
Typhoid Fever	55	4	101	17
Whooping Cough	45	9	61	12
Cerebrospinal Meningitis	21	16	21	18
Malarial Fever	...	...	...	...
Totals	1712	313	1832	282

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 22, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Mar. 2–9	1	..
Illinois, Chicago	Mar. 9–16	5	..
Indiana, Indianapolis	Feb. 24–Mar. 10.	9	..
Iowa, Davenport	Mar. 1–15	1	.
Kansas, Lawrence	Feb. 1–28	1	..
Topeka	Mar. 2–9	5	..
Louisiana, Shreveport	Feb. 23–Mar 2	1	..
Ohio, Cincinnati	Mar. 8–15	1	..
Cleveland	Mar. 8–15	1	.
Pennsylvania, Homestead	Feb. 28–Mar. 7	2	.
Tennessee, Nashville	Mar. 9–16	1	..
Wisconsin, Milwaukee	Mar 2–9	2	..

SMALLPOX—INSULAR

Philippine Islands, Manveles Quarantine	Jan 20–Feb 2	On S.S. *Pioneer*

SMALLPOX—FOREIGN.

Africa, Cape Town	Jan. 26–Feb. 2	1	..
Argentina, Buenos Aires	Jan. 12–26	12	3
Brazil, Bahia	Jan. 12–Feb. 10.	26	1
Para	Feb. 2–9.	..	1
Pernambuco	Jan. 15–31	..	60
Rio de Janeiro	Feb 2–9.	..	1
Canada, Digby County, N. S.	Jan. 6–13	36	3
Chile, Coquimbo	Feb. 6	25	2
China, Shanghai	Jan. 6–13	1	1
Columbia, Cartagena	Feb 24–Mar 3.	..	3
Ecuador, Guayaquil	Feb. 16–23	..	2
Egypt, Cairo	Feb. 18–25	3	1
France, Marseille	Feb. 29–Mar 6	..	Epidemic
Great Britain, Cardiff	Feb. 23–Mar. 2.	2	.
Hull	Feb 16–23	2	.
New Castle on Tyne	Feb. 16–23	1	..
India, Calcutta	Feb. 2–9	.	50
Italy, General	Feb. 1–28	7	..
Mexico, Aguas Calientes	Mar. 2–9	..	2
Netherlands, Rotterdam	Feb. 23–Mar 2	1	..
Russia, Odessa	Feb. 16–23	28	7
Siberia, Vladivostok	Jan. 21–28	1	.
Spain, Malaga	Feb. 16–23	..	1
Turkey, Constantinople	Feb. 17–Mar 3.	..	3

YELLOW FEVER—UNITED STATES.

Texas, Galveston	Mar. 17	1	1
		(From S. S *Basil* from Para	

YELLOW FEVER—FOREIGN.

Brazil, Para	Feb. 2–23	1	6
Rio de Janeiro	Feb 2–9	1	..
Ecuador, Guayaquil	Feb. 16–23	..	7

CHOLERA—INSULAR.

Philippine Islands, Provinces	Jan. 6–12	43	23

CHOLERA—FOREIGN

Ceylon, Colombo	Jan. 26—Feb. 2.	1	1
India, Calcutta	Feb. 2–9	..	105

PLAGUE.

Argentina, Buenos Aires	Jan. 12–26	3	1
Australia, Brisbane	Jan. 12–19	8	1
Brazil Bahia	Jan. 12–Feb. 16.	4	6
Para	Feb. 2–23	.	9
Chile, Antofagasta	Feb. 6	14	6
Santiago	Feb. 2.		Present
China, Niuchwang	Jan. 23–30	39	36
Egypt, Provinces—Beni Souef	Feb 15	1	1
Guerga	Feb 17–21	4	4
Kena	Feb. 17–21	4	4
Kouss	Feb. 21	1	1
Minieh	Feb. 19–21	4	4
India, General	Jan 26–Feb. 9	20,262	20,706
Calcutta	Feb 2–9.	.	21
Peru, Callao	Feb. 8–16	1	.
Chiclayo	Feb. 7	6	6
Ferrenafe	Feb. 7	7	7
Lima	Feb. 7.	6	4
Mollendo	Feb. 7	1	.
Pacasmayo	Feb. 7	2	1
Pueblo Nuevo	Feb 7	2	..
Trujillo	Feb 7	12	3

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Original Articles.

GASTROSCOPY.*

By CHEVALIER JACKSON, M.D.,

PITTSBURG, PA.

LARYNGOLOGIST AND RHINOLOGIST TO THE WESTERN PENNSYLVANIA HOSPITAL, THE EYE AND EAR HOSPITAL, AND THE MONTEFIORE HOSPITAL.

When, in these days of limited fields of work, a man feels it incumbent upon him to write upon the examination of an organ to which he has not devoted a lifetime of study, some apology is necessary.

During the course of his esophageal work, from time to time, the writer has looked into the stomach. He has found that an elongated model of his esophagoscope makes a very satisfactory gastroscope. The results obtained have been so brilliant that he feels it his duty to call the attention of those interested in the stomach to the feasibility of gastroscopy. The cases herewith reported were not examined with test meals and the other aids of the gastroenterologist, as every opportunity was immediately taken advantage of to test the possibilities of gastroscopy. Delay to get complete chemical and clinical data would have resulted in missing some examinations. It is not intended to compare the results of gastroscopy with those of other diagnostic and therapeutic aids. I am utterly incompetent by lack of training and inclination to examine a stomach case in any other way than gastroscopically, and it has been my purpose only to demonstrate the feasibility of this way and to call the attention of the gastroenterologist to it. It remains for him to decide whether he needs to see the organ he is treating.

The writer's training and instincts are rhinolaryngological, so that it is natural to look upon every disease from an anatomical viewpoint, and to feel that to treat any organ without seeing it is but groping in the dark. Yet reflection enables him to realize that the internist and the gastroenterologist of to-day wish to know the perversion of physiological function, as well as the anatomical basis of disease. A simple gastroscope that can be used in practically every case where needed, is offered modestly as an addition to the armamentarium of the physician and surgeon. The views are so clear and satisfactory that the writer believes that the end of the next decade will see the internist and the gastroenterologist passing the gastroscope as frequently as the gynecologist of to-day passes the cystoscope. The gastroenterologist will not see all of the ventricular mucosa, any more than the rhinologist sees all of the nasal mucosa.

History.—When I first obtained good endoscopic views of the stomach I thought it had never been attempted before. But a search of the literature brought to light several previous attempts.

The first recorded attempt to construct a gastroscope was by Mr. Leiter and Dr. Nitze, whose names are inseparably connected with the cystoscope. Both before and after this time attempts to construct flexible and jointed instruments containing optical apparatus had failed in the mechanical stage.

Trouvé, in 1873, perfected a polyscope, with which Collin of France demonstrated endoscopically the functions of the stomach of a bull, and with which Ledentu and Raynaud diagnosticated a cicatricial stricture of the esophagus near the cardia.

Mikulicz in 1881 started on the basis that a gastroscope must be rigid, but after repeated trials he came to the conclusion that a straight, rigid instrument could not be passed into the stomach on account of the physiological curve of the vertebral column, to accommodate his instrument to which he gave the instrument an angle of 150° at the junction of the ventral and middle thirds. This angle prevented a rotation of more than 180° within the stomach, so that two complete instruments were necessary with windows opening in opposite directions. To touch the gastric walls meant to fog the window and dim the image.

Mikulicz arrived at the conclusion that a straight instrument was absolutely impracticable; that it could be passed as far as the cardia, which he believed to be located at the eighth or ninth vertebra, where it encountered an insurpassable obstruction in the subjacent vertebra. His straight experimental staff never really reached the cardia at all. What he encountered was the constriction, anatomic and spasmodic, at the hiatus diaphragmatis and the subjacent esophageal curve.

Mikulicz' examinations were mostly on healthy persons, as he thought the normal was to be studied first, and he seemed to doubt the safety of examining the stomach in serious disease of this organ. With one exception he did not record the appearance of any lesion within the stomach, and his description of the normal is very meager and unillustrated.

After 1883 no account of the use of gastroscopy appears in literature for twelve years, and the procedure was evidently abandoned by its originator.

Rosenheim, in 1896, reported experiments with a gastroscope 12 mm. in diameter, 68 cm. in length. It was made up of three concentric tubes, the inner being a terrestrial telescope of 60°, with the addition of a prism below the objective, a different prism to be substituted to inspect different areas, the optic tube being withdrawn for the purpose.

External to the optic tube is the intermediate or illuminating tube in the walls of which four canals run; two for water circulation to cool the lamp (water at 40° C. to prevent condensation on the glass surfaces being required); a third canal for conducting wires; and a fourth canal for the purpose of inflating the stomach with air.

In addition to the straight gastroscope, Rosenheim states that in some cases the spiral twist of the lower esophagus required an instrument bent at an angle of 160° at a point 7 cm. from its distal extremity. He also used a straight rigid staff of the

*Read by invitation before the New York Academy of Medicine, Section on Laryngology, January 23, 1907

size of the gastroscope to ascertain if it were possible to pass his gastroscope in the particular case, and if passable to measure the distance that the gastroscope will have to be introduced. He also used a straight sound to overcome the reflex excitability in difficult cases. This straight sound could be introduced in only about 70 per cent. of his cases. He found that various bends and curves were necessary, and in some instances he used a corkscrew-like twist, throwing the longitudinal axes of parts of the instrument above and below the bend out of the same plane. A very significant fact is that after the beak of the instrument entered the stomach the straight part followed readily. His whole trouble in introduction was that his instrument was not designed to be passed by sight. He used cocaine anesthesia, applied with an esophageal syringe.

As to results, Rosenheim states that gastroscopy is impossible in tumor of the stomach, and that it is contraindicated in ulcer.

Rewidzof in 1899 reported results with a modified Rosenheim gastroscope which he passed through a previously introduced flexible rubber tube.

None of these early workers has left us any drawing of what he saw, and the written descriptions are hopelessly meager. The procedure has been entirely abandoned. The cause for the failure and abandonment of gastroscopy may be summed up in two words: Impractical instruments.

At the door of the Nitze cystoscope must be laid the blame of the practical failure of gastroscopy up until the present day. The attempt to adapt the cystoscopic principles to the totally different conditions in the stomach resulted in the misdirection of the earnest, able, scientific efforts of Mikulicz, Rosenheim, and Rewidzof. The instruments were difficult of introduction. The optic apparatus absorbed light and yielded a feeble image, which soon disappeared altogether from soiling of the window every time it touched the mucosa. For the same reason the apparatus could not be greased for introduction. The optic apparatus, furthermore, prevented the passage of the instruments by sight, it prevented the wiping away of secretions and the probing of suspected areas, without which little or nothing can be learned. The stomach had to be empty, which it never is. All failed to recognize the mistake of trying to see a large field in a dilated stomach. The field must be traversed in the collapsed state of the stomach, fold by fold. These things are not said in criticism, for, while the work of these pioneers was of no help to me, as mine was done before I learned of their labors, yet they have rendered great aid in determining that cystoscopic methods are not adapted to gastroscopic work. This would certainly have been tried by others, and much time and thought consumed by some one. Mikulicz himself recognized the complexity of his apparatus. He said: "There remains no doubt but that the instruments, as well as the method, furnish ample room for improvement and simplification." The simplification I think has now been reached, though of course there is still ample room for improvement.

The steps in the development of gastroscopy are these:

Mikulicz determined one point, namely, that a gastroscope must be rigid, but he gave it a bend. Rosenheim went a step farther, and said it must not only be rigid, but should be straight, though he failed at times to introduce it without a bend. Now, I think, we are ready to add four more dicta:

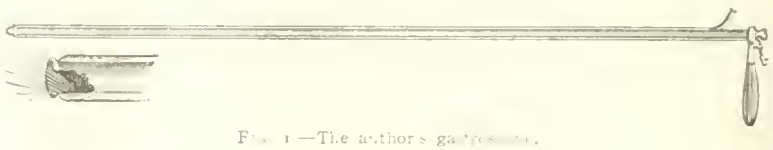

Fig. 1.—The author's gastroscope.

1. Optic apparatus must be abandoned.
2. The tube must be passed by sight.
3. The stomach must be examined in a collapsed state, to permit of mopping, palpation with the instrument, probing, and combined endoscopy and external palpation.
4. General anesthesia is indispensable to prevent retching, during which the diaphragm clamps the tube, rendering exploration impossible.

In a recent article[11, 12] I described my gastroscope

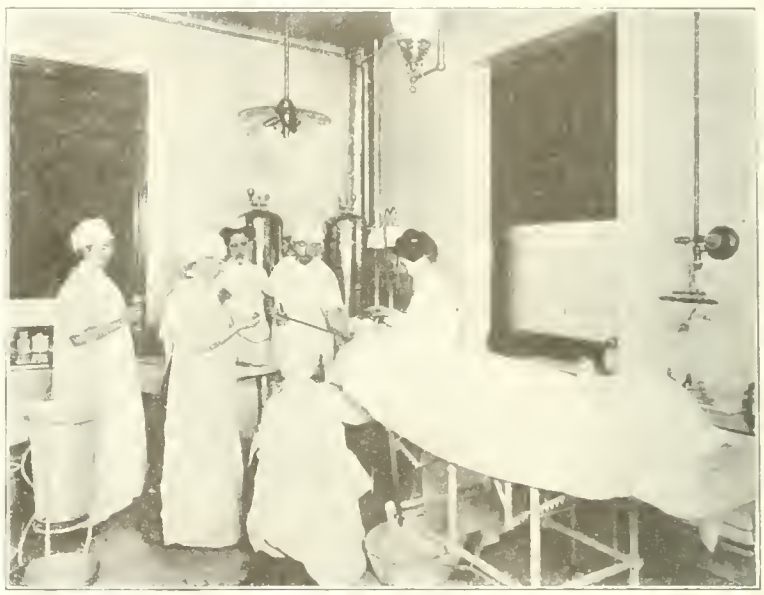

Fig. 2.—Positions of assistants, nurses, operator and patient during the introduction of the gastroscope.

and gave the technique of its use, together with a report of six cases in which I had obtained positive results from gastroscopy. I described the normal gastroscopic appearances.

The stomach is examined in the collapsed state, that is, after a twelve-hour fast. Fig. 3 gives a fair conception of one of the thousands of forms in which the stomach folds present themselves before the end of the gastroscope during the examination. There is one point upon which I did not lay sufficient stress, and that is the importance of proper gagging.

I have had more trouble in getting an assistant who can manage the gag and the patient's head than in any other part of the technique. The mouth must be gagged to the extreme limit; it must be held so, and the gag must never be allowed to slip. If it does, the tube will be damaged and its introduction interfered with.

The second assistant kneels or sits (Fig. 2) with the right arm around the patient's neck, his right hand holding the gag, which is tightened if the jaws separate wider, and his left hand controls the patient's head. He yields the head to the slightest

movement of the tube by the operator. The shoulders of the patient are at the edge of the table, and the head and neck are suspended in the air under the control of the second assistant with the gag.

The gag should always be inserted in the left side of the patient's mouth, not farther back than the canine teeth. For this I have found the Ferguson gag best, as it has sufficient spread to be used on the lateral incisors. If placed farther back, any gag is apt to slip; yet many gags have not spread enough to be used forward.

Fig. 3.—Gastroscopic view. Normal stomach. Collapsed state. Case VII.

Dangers.—In my former paper I discussed the possibility of harm from gastroscopy, but a few words may here be added on the subject. In careful hands there are no dangers other than those of ether anesthesia.

In general, it may be stated that the stomach is a very much less sensitive organ than the esophagus; not only less sensitive in the strict meaning of sensation, but in the matter of efferent impulses for the production of reflexes, and of congestion and inflammatory reactions to local irritations.

As the real question of importance is as to shock incident to the passing of a rigid instrument through the entire length of the esophagus (which, *a priori*, would seem the only question of importance, as the stomach is quite insensitive), a number of sphygmomanometric observations upon my cases were made. The following is an analysis by Dr. John W. Boyce of the charts made by himself, Dr. Helen F. Upham, and Dr. Joseph H. Barach:

"A notable fall of blood pressure has been noted in some instances of operative interferences with the esophagus, and observations have been made with some care to ascertain if there is anything analogous during the passage of the gastroscope.

Fig. 4.—Pylorus Case IX.

"The charts in the Margaret S. and Sarah McG. cases show absolutely no change that can be attributed to this manipulation of the esophagus. In the case of Henry H. a very slight (10 mm.) fall occurred while the tube was passing down the esophagus. This may have been accidental. The chart shows a slow rise to the original level while the tube was *in situ* and the inspection being made.

"In a fourth case, that of Henry A., however, the pressure fell steadily from the time the tube was inserted, and rose again when it was withdrawn, and fell a second time while the tube was in the stomach, and the mass being manipulated to bring it within the field of vision. Each time the fall aggregated 40 mm. or more, carrying the pressure down from between 120 and 130 (which seemed to be the normal for this case while under anesthesia) to below 90. Gastroscopy is apt to be done under very shallow anesthesia, and the pressure curve is particularly likely to be distorted by accidental circumstances, but in the four cases observed the readings were fairly uniform, and it seemed safe to say that there is ordinarily no appreciable disturbance of the circulation, but that in an occasional case the characteristic esophageal fall will occur from the passage of a rigid instrument of this length. In these cases, however, the pressure does not remain at the low point, but starts to rise at once, and reaches the original level while gastroscopic search is in progress."

Fig. 5.—Pylorus Case IX.

Gastroscopy certainly is not as dangerous as passing a sound or tube, for all diseased spots are seen and pressure upon them avoided. Thus, in malignant disease of the cervical esophagus, the natural constriction at the introitus is increased, and carelessness might force a stomach tube through, but with the rigid gastroscope passed by sight the growth at once is discovered. As I have stated, I start the tube with my finger, and rely upon a previous laryngoscopic examination to exclude disease of the introitus, and in two suspicious cases I found disease of the upper esophagus with the laryngeal speculum. Dysphagia with regurgitation is usual in disease of the upper esophagus; so that in dysphagia with regurgitation we may safely conclude that the disease is far enough within the esophagus to allow the tube to be started by the sense of touch without reaching the diseased tissue.

Fig. 6.—Ulcer of stomach. Case X.

Mikulicz doubted the safety of examining cases of suspected malignancy, and doubtless he was correct, with his instrument with its bend which had to be swung with necessarily imperfect control, and, most important of all, without seeing what the end was doing. With a perfectly controllable straight instrument unobscured and unweighted with a telescopic optic apparatus, the touch is gentle, certain, and under full control.

Suspicious spots can be seen and pressure upon them avoided. Disease of the abdominal esophagus, which makes a more or less sharp turn (relative to the advancing tube), would be particularly dangerous with an instrument passed blindly.

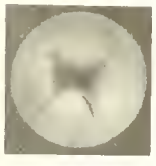

Fig. 7.—Cardiospasm. Case XI.

As to the danger of taking a specimen, I have done so in two cases without any ill result. They were both cases associated with fungation. I do not believe this to be fraught with any danger, because in the five malignant cases that I have examined there was no hemorrhage from contact of the tube or from wiping with the little gauze sponges. Yet, because a single accident might prevent or delay the adoption of what promises to be so useful a procedure, I should hesitate to remove a specimen from the edge of any flat ulceration, as there might be some risk of perforation.

The foregoing statement of dangers is based upon the utmost gentleness of manipulation under the relaxation of deep anesthesia; the passage of the gastroscope by sight; the withdrawal of it within the esophagus, should retching supervene, and upon the strict observance of all the minor details already alluded to.

I herewith report eight additional cases in which positive results have been obtained.

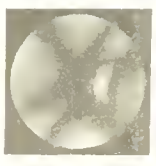

Fig. 8.—Ulcer of stomach. Case XI.

Case VII.—*Stomach lesion negatived by gastroscopy; Cardiospasm.* Miss Sarah McG., age 19, sent to me by Dr. Ewing W. Day. Patient complained of difficulty in "getting things down," often requiring a pint of water to wash down a small mor[illegible] of food. Occasional nausea an[illegible] vomiting, also regurgitation. Lost twenty pounds in weight.

Assisted by Dr. Ellen J. Patterson, with Dr. Helen F. Upham administering the ether, and with Dr. Joseph H. Barach at the sphygmomanometer, I passed the gastroscope. The patient being fully relaxed, the gastroscope slid readily down into the

stomach without resistance. The esophagus was perfectly normal. The gastric mucosa was of the most beautiful delicate pink color. Fold after fold was explored (Fig. 3) but nothing abnormal was found. Here and there a fold was drained of its fluid, which, to the naked eye, seemed normal in consistency and of a pale olive color as it ran from the tube.

Fig. 9.—Gastr. Luetic. Case XI

The tube was withdrawn to the bifurcation level, and reinserted as the patient began to come out of the anesthesia. The cardia opened and closed spasmodically.

We had here an anatomically normal esophagus and stomach, and an esophageal neurosis. The case was referred to Dr. J. A. Lichty, who reported, after tests, a functionally normal stomach. Under his skilful care the neuropathic basis was so far benefited that the symptoms entirely disappeared.

Case VIII.—*Gastric Syphilis.* Michael V., age 28, admitted to the Western Pennsylvania Hospital in the service of Dr. John W. Boyce. History of syphilis and of alcoholism. Complained of epigastric pain, worse after eating, anorexia and constipation of one or two months' duration. Vomited three times during preceding week, the vomitus containing "coffee grounds" flakes. A small mass was palpable in the epigastric region.

With the assistance of Dr. Ellen J. Patterson, Dr. J. J. Schoenig, and Dr. R. A. Brundage, I passed the gastroscope with some difficulty, owing to a defective mouth gag and an incomplete anesthesia. When the tube entered the stomach a bleeding granular mass was found somewhere near the cardia. Owing to continued bleeding and to defective aspirating and swabbing apparatus at that time at hand, I was unable to locate the mass or to get a satisfactory view of it. The mucosa seemed reddened, but even of this I could not be certain. While the bleeding was enough with my then imperfect apparatus to obscure the view, it was of no moment, the amount of blood being not over a few drams. Dr. Boyce made a diagnosis of gastric syphilis and put the patient upon specific treatment, under which he made an entire and complete recovery, the mass disappearing entirely.

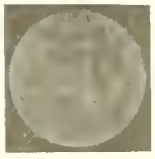

Fig. 10.—Carcinoma near pylorus. Case XIII.

Case IX.—*Gastroptosis, neurasthenia, esophagismus ("globus hystericus"); Inspection of the normal pylorus.* Margaret S., age 33, was brought by Dr. A. A. Dranga to me for esophagoscopy and gastroscopy on account of difficulty in swallowing, distress after eating. Patient was able to take food in very small morsels, finely masticated. The patient was a neurasthenic, and feared cancer, of which her mother had died.

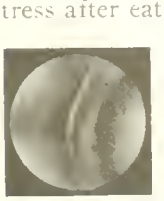

Fig. 11.—Near pylorus. Infiltration (to left). Case XIII

Dr. Dranga anesthetized the patient with chloroform, and with the assistance of Drs. Patterson, Upham, and L. L. Schwartz, with Dr. Boyce at the sphygmomanometer, I passed the gastroscope, which went into the stomach without meeting the slightest obstruction. The esophagus was absolutely normal.

The gastric mucosa was very pale, of the most delicate pink tint, and of the smoothest appearance. Considerable quantities of chloroform vapor were forced out into my eye by the respiratory movements of the stomach, so that a good deal of chloroform must have been present in the stomach, either from swallowing or by elimination, yet the gastric mucosa retained its pale tint.

The gastroscope passed on down until the distal end was 71 cm. from the upper teeth. At this distance the pylorus was reached. The pylorus was for a moment funnel-shaped, with a rounded central opening surrounded by folds parallel with the axis of the tube. The depths beyond could not be seen at first. Gradually, by a movement which was so slow, and so blended with the respiratory movement that it seemed a part thereof, the rounded opening changed to a slit (Fig. 4). This slit gradually became wider in the center, formed an oval, beyond which the duodenal folds were visible, then became surrounded by a rosette of folds at right angles to the axis of the tube. Suddenly the duodenal folds rolled in toward the tube (Fig. 5) and a small quantity of dark-looking fluid was exuded. The patient was now partially out of anesthesia and began to vomit, and the gastroscope was withdrawn within the esophagus. After deep anesthesia was again produced, and the pylorus was approached, it was found hidden behind a series of folds at right angles to the tube.

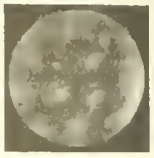

Fig. 12.—Carcinoma of pylorus Left edge of tumor.

There were now only respiratory movements, possibly because of the depth of the anesthesia. A half-hour longer, making a total of about an hour, was consumed in exploring fold after fold of the stomach. Because of the gastroptosis, this stomach could be explored over almost its entire mucosal surface.

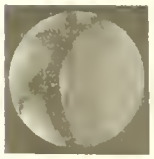

Fig. 13.—Carcinoma of pylorus. Infiltration under normal but unwrinkled mucosa. Right of picture. Case XIV.

Drs. Dranga, Patterson, Boyce, and Schwartz each examined the stomach for a few moments, and commented on the clear views obtained. After the patient began to regain consciousness the gastroscope was again introduced as far as the cardia, but was interfered with and clasped by the spasmodic contractions of the esophagus at every level.

Remarks.—This is the second case in which I succeeded in seeing the pylorus, and it was utterly unlike the first, which was seen only for a few moments, and was surrounded by annular mucosal folds. It will require, probably, hundreds of observations to determine what is the average appearance of the pylorus. The vertical position of the stomach greatly facilitated examination, which was so thoroughly made that I felt justified in assuring the patient that she had no disease of the stomach, and that the spasm of the esophagus was the cause of her symptoms. Practically all of the interior of the stomach was explored. Under Dr. Dranga's skilful care these symptoms are rapidly subsiding.

Sphygmomanometric charts of the four foregoing cases, and also of Case XIV., are analyzed under "Dangers."

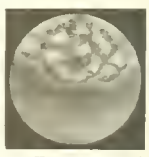

Fig. 14.—Another view of Case XIV.

Case X.—*Gastric ulcer in a patient complaining of a foreign body.* Mrs. Matirt O., age 26, sent by Dr. M. H. Moss of Homestead. Patient complained of pain on swallowing, later becoming constant, and attributed to a chicken bone swallowed four days previously. A radiograph by Dr. R. H. Boggs negatived a foreign body, but the patient insisted there was something there, pointing to the epigastrium. Gastroscopy, assisted by Drs. Clement Jones,

Ellen J. Patterson, J. M. Hamilton, and M. H. Moss, Dr. H. F. Upham giving ether. A small ulcer was found above the cardia and another on the posterior wall of the stomach (Fig. 6). The ventricular ulcer was seen by Drs. Jones, Hamilton, and Moss. An explanation of the foreign body history in this case was suggested by Dr. Clement Jones, namely, that attention was first called to the epigastric sensations by the swallowing of a very large bolus of food. Under Dr. Moss' studious care the patient is steadily improving.

Case XI.—*Peptic ulcer of the stomach and esophagus, cicatrix on gastric mucosa, ulcer of abdominal esophagus, cardiospasm, esophagismus, chronic gastritis.* Referred to me for gastroscopy by Dr. Milton I. Goldsmith. Henry H., age 59, family history and personal specific history negative, uses alcohol regularly, formerly excessively. Vomits everything he eats except raw eggs, and very small, well-chewed morsels of dry bread. Retains a small portion of milk swallowed, most of it being regurgitated. Duration six months. Symptoms attributed by patient to the drinking of large quantities of ice water. Under ether administered by Dr. Helen F. Upham, and with the assistance of Drs. Ellen J. Patterson and Milton I. Goldsmith, with Dr. Barach at the sphygmomanometer, I introduced the gastroscope. When the hiatus was passed, an ulcer directly ahead of the tube was noticed on the right wall of the esophagus. It was oval, surrounded by an inflammatory areola, though the edges were not infiltrated.

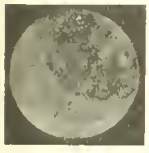

Fig. 15.— Another view of Case XIV.

In endeavoring carefully to pass the ulcer, it was noticed that as soon as the tube mouth touched the ulcer there was an immediate sudden spasmodic closure of the esophagus just below, at the cardia (Fig. 7). The patient had come partially out of anesthesia. To test the matter the tube was twice withdrawn above the ulcer and reintroduced, and each time the same cardiospasmodic phenomenon occurred. Upon pushing the ether to deep anesthesia the spasm disappeared completely and the gastroscope slid easily into the stomach. An ulcer about 1 cm. in diameter was found upon the posterior wall, to the right, in the region of the greater curvature (Fig. 8). This was plainly seen by Dr. Goldsmith and Dr. Patterson. The mucosa, deep pink in color, was covered with thick, tenacious mucus, with patches of adherent secretion that looked like an exudate in a number of locations.

Upon the greater curvature with the tube mouth pressed flatly upon the mucosa, a white, roughly quadrangular area, surrounded by a slightly pigmented (?) area of irregular outline (Fig. 9). The entire area was stiff enough to tilt and shift as one piece when moved by the tube.

Remarks.—The spot just referred to I took to be a scar. The spasmodic closure of the lower end of the esophagus, when the ulcer was touched, was, in my opinion, an esophagismus similar to sphincteric spasm in anal ulcer, though of course we do see cardiospasm and esophagismus where no ulceration exists. Again, it is possible that the ulceration may have been secondary. The ulcerations I deemed benign, because one had healed, and because they were multiple, with healthy, intervening mucosa. The gastroscope decided beyond doubt that the dysphagia and regurgitation were due to a spasmodic, not an anatomical stenosis, and that there were precancerous conditions warranting gastroenterostomy. This is a case of the kind in which the gastroscope can save the patient's life by furnishing an exact knowledge of the lesions present, thus giving the physician, or perhaps still more the surgeon, a chance to cure ere it is too late. These remarks must be qualified by the reservation that I have no knowledge of gastric medicine or surgery.

Attention should be called to the danger in this case of passing a tube blindly, and not by sight. The normal curve to the left of the abdominal esophagus presented the ulcer precisely where the point of the tube would strike it, the danger being increased by the spasm below and the absence of anesthesia. Under anesthesia, and by guiding the tube past the ulcer, with the aid of sight, rendered the procedure safe. Sphygmomanometric readings taken by Dr. Joseph H. Barach in this case are analyzed under "Dangers."

Case XII.—*Carcinoma of the cardia diagnosticated gastroscopically.* Referred by Dr. J. M. Jackson. Mrs. A. L., age 60. Family history negative. Three weeks before had noticed, for the first, pain back of sternum on swallowing, gradually increasing, and associated for two weeks with increasing difficulty in getting food down. Now only liquids can be swallowed. Some vomiting complained of, which may really have been regurgitation. It contained no blood, fresh or old. Had been under the care of a noted physician, who had cured the trouble completely, but it had recurred. Patient claimed she had lost no weight. Ether being administered by Dr. J. M. Jackson, with the assistance of Dr. Patterson and Dr. Boyce, I passed the gastroscope. The entire cardia was found filled with a fungating cauliflower-like growth, which extended up the esophagus to a point 42 cm. from the upper teeth. A slight infiltration, with narrowing, was present in the esophageal wall just above this at 38 cm., but it was not ulcerated. The fungating portion was seen plainly through the gastroscope by Drs. J. M. Jackson, Patterson, and Boyce. A large specimen was removed from near the cardia. No bleeding followed. The specimen was reported by Dr. Joseph H. Barach as squamous-celled epithelioma.

Remarks.—This case is interesting for the following points: The history of only three weeks' duration; the history of apparent cure; a large extent of disease with a history of no emaciation; the absence of signs of blood in the vomitus.

Of course, I am aware that these points would not necessarily have misled a careful diagnostician; yet they were certainly unusual. The absence of hemorrhage after the taking of so large a specimen is worthy of note.

Case XIII.—*Carcinoma of the pylorus, with ectasia, diagnosticated gastroscopically.* Gastroscopized at the request of Dr. E. S. Montgomery, who gave me the following notes of the case, from which matters irrelevant to the stomach are omitted: "Mrs. W. E. D., age 26. Complained of sharp pains through back and right side, at first intermittent, later constant. Also had deep-seated pain and tenderness one inch to the right of the median line and one and one-half inches below costal region. A small mass could be felt at this point. Family history negative."

At the Passavant Hospital, Dr. Montgomery anchored the right kidney and asked me to pass the gastroscope during the same anesthesia prior to his operation. With the assistance of Dr. Patterson, I explored gastroscopically, Dr. E. S. Montgomery looking through the tube from time to time.

The gastric mucosa was pale, of whitish pink color. Upon approaching the pylorus there suddenly came into view a dark, purplish, nodular sur-

face (Fig. 10). Beyond this mass the mucosa was of normal color, but under it hard infiltration could be felt (Fig. 11) on the left. The pyloric opening appeared somewhat triangular behind folds, one of which (Fig. 11, slightly to right of center) had a dark slit parallel with the ridge (vertical curve). Whether this was an ulcer or not I could not be certain. It was not infiltrated, and I could not turn the fold to look into the depth of the slit. Through the triangular pyloric opening poured about two ounces of cloudy, whey-like fluid, in which floated thickly, dark-brownish flakes about the size and color of coffee grounds.

The pylorus in this case was reached at 72 cm., but this was not its usual location. The whole pyloric end was quite movable, and was displaced downward into the right iliac fossa (as indicated by paralleling the tube externally with its obturator). The greater curvature was encountered when the tube reached 60 cm. The examination was not prolonged, because of the operation to follow.

Two specimens taken were reported upon negatively. Notwithstanding this, and also the age (26) of the patient, I pronounced the growth malignant on the strength of the gastroscopic findings alone.

Case XIV.—*Carcinoma of the pylorus, diagnosticated gastroscopically.* Referred to me for gastroscopy by Dr. L. S. Walton, who has given me the relevant portion of his history as follows: "Henry A., age 46; family history unknown; personal history negative; moderate drinker. Catarrhal jaundice twelve years ago; asthma for past six years." Three months ago first noticed mass in umbilical region, coincident with development of acid eructations, occasional sharp pains in upper abdomen, nausea, and vomiting. These symptoms gradually increased in severity, the vomiting occurring daily, usually about an hour after eating, the vomitus being occasionally of a brown color. Mass increased in size. Slight loss of weight and strength. Appetite remained good for meats and all his accustomed foods. Mass roughly measuring 3 inches in width by about 4 inches in height in right epigastric and umbilical regions. Percussion flatly tympanitic over mass, which is movable, and is depressed three-quarters of an inch on deep inspiration. No indications of cachexia.

At the Eye and Ear Hospital ether was given by Dr. Walton, and a gastroscopic examination was made by Dr. Clement Jones and myself. Sphygmomanometric readings by Dr. Barach. After exploring the anterior and posterior walls and greater curvature as far toward the pylorus as possible, Dr. Jones, with his right hand, grasped the stomach end of the gastroscope through the abdominal wall, while with his left hand he moved the tumor mass over in front of the tube.

Observing through the gastroscope, I saw a portion of the tumor surface of dark red color, spotted with brownish discolorations (Fig. 12). In one portion the normal, but unwrinkled mucosa, underlaid with a hard mass (Fig. 13) showed part of the tumor to be outside of the stomach wall. It seemed to occupy about two-thirds of the periphery of the pyloric third, extending over at one point to the middle third. Fig. 14 shows one point at which a zone of dilated capillaries was visible, and Fig. 15 an overhanging, dark, mulberry-like fungating nodule. There was not the slightest hemorrhage.

Owing to unavoidable circumstances, this patient was gastroscopized three hours after eating stewed chicken and drinking a glass of whiskey. A large portion of this food was in the stomach. Several pieces of the chicken tissues were removed with forceps. Some of these were as large as a peanut kernel. These were in the left third of the stomach. When the pyloric third was approached the fluid contents poured out in a steady stream, over a pint in total quantity.

What influence the posture and the anesthetic had on this distribution I do not know. This case was afterward skilfully operated upon by Dr. James McClelland, who found the location and character of the growth exactly as demonstrated by the gastroscope.

Conclusions.—1. History. The attempts made in the past to examine the stomach gastroscopically were abandoned because no practical instrument was devised.

2. *Usefulness.* Gastroscopy is not simply a feat. It has a field of usefulness that will increase as our skill and knowledge increases. Gastroscopy, in my opinion, is useful for the detection and removal of foreign bodies, the diagnosis of many pathological conditions, as inflammation, ulceration, scars, neoplasms, dilated vessels, and the treatment of at least one of these conditions, namely, benign ulcer. When the gastroscope shall have gained its deserved recognition, malignant disease of the stomach will be diagnosticated in many instances sufficiently early to give the abdominal surgeon a fair chance. Better still, a positive diagnosis of precancerous conditions will be made sufficiently early to enable him to save lives that are now being lost through reluctance of the patient to submit to an exploratory celiotomy. Gastroscopy is not offered as a substitute for an exploratory operation in every instance, but only in those cases in which the patient declines to submit, or in which the surgeon or the physician considers a simple procedure almost free from risk preferable to operative exploration.

Gastroscopy is the only method known to-day that yields ocular information as to the condition of the gastric mucosa. Other methods give information only by inference from the disturbance of function. Thus gastroscopy becomes an auxiliary.

3. *Results.*—With the gastroscope I have made a diagnosis of chronic gastritis in two cases; gastroptosis in two cases; malignant disease of the cardia in two cases, and of the pylorus in three cases; in two of these cases a specimen was taken. I have made diagnosis of peptic ulcer in five cases, one of which was cured by direct applications. In one case negative results of value were obtained. I have removed one foreign body from the stomach, being a forceps jaw lost therein by myself. In one case the gastroscopic findings enabled a diagnosis of gastric syphilis.

4. *Limitations.* Negative results from gastroscopy are of limited value, because we cannot be certain that no lesion exists in the unexplorable area. But with greater perfection and skill this unexplorable area will be very much diminished.

5. *Anesthesia* by ether is preferable. Chloroform is unsafe alone, though it may be added as needed for relaxation. Cocaine, though an adequate analgesic, does not stop the retching which will interrupt so constantly.

6. *The explorable area,* with a stomach of the classic shape and position is the middle third. More than a third of the greater curvature is readily seen, likewise of the anterior and posterior walls at their inferior portions, the lateral extent of the field diminishing upward toward the esophageal orifice. The fundus and the pyloric ends can be brought within range of the gastroscope by the external assistance of an expert abdominal manipulator, the tube being withdrawn within the esophagus until

the new field is in place. In vertical and gastroptotic stomachs, the lesser curvature and the pyloric third are readily explored with little or no external manipulation, and in some instances the pylorus can be seen.

8. *Dangers.*—In a patient with a normal esophagus and stomach, the only danger is that of ether anesthesia. An ulcer of the esophagus or stomach constitutes an exceedingly slight risk, unless the ulcer bed be so thin that it would perforate within a few days by erosion or by the normal spontaneous movements of the stomach. In chronic inflammatory states of the stomach no risks are incurred. In malignant disease a specimen may be taken with little risk in fungating conditions, but in flat ulcerations suspected of malignancy, the biting out of the edge of the ulcer, though very easy of accomplishment, is unjustifiable. The danger of hemorrhage in gastroscopy is *nil* in the normal stomach; in the diseased stomach it exists only in cases which are about to bleed, anyway, and none such were encountered in this series. There was no bleeding following the taking of a specimen in two instances.

The foregoing statement of dangers is based upon gentle manipulations, and the observance of certain rules, the most important of which is the immediate withdrawal of the gastroscope within the esophagus should retching supervene, waiting for the readvent of deep anesthesia before again pushing the tube downward.

9. Any physician can learn to examine the stomach with the gastroscope.

10. As to the future of gastroscopy: Will every physician have a gastroscope? No. No more than every physician has an ophthalmoscope.

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Sterilization of Catgut.—Stich speaks highly of catgut prepared according to the following method. The catgut is wound on glass plates and is then immersed for a quarter to one-half hour in the dark in a 1 per cent. alcoholic ammoniacal solution of silver nitrate, is then washed in alcohol, and is exposed to the sunlight in a sterile container. The silver salt which has penetrated to the interior of the strand of catgut is decomposed by the light, and the material may then be preserved for use in a mixture of absolute alcohol and 10 per cent. of glycerin. Tests showed that catgut prepared in this way was perfectly sterile and was stronger then the raw material.—*Zentralblatt für Chirurgie.*

HARMFUL INVOLUTION OF THE APPENDIX.*

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My effort to catch this subject in the screw thread of professional interest two years ago did not succeed, because of the title of the published article, "Normal Involution of the Appendix." No one seems to be much interested in anything normal associated with the appendix.

Senn and Ribbert first called attention to the fact that the appendix vermiformis normally undergoes an involution process, with replacement of the lymphoid, mucous, and submucous coats by connective tissues. They attached no clinical significance to a condition which sends many thousands of patients to the doctor every year. A study of the subject brought out the fact that nerve filaments persist longer than other structures in a disappearing appendix. Contraction of the hyperplastic connective tissue irritates these nerve filaments in the appendix

FIG. 1.—Symmetrical Involution

just as it does in any sort of scar tissue elsewhere in the body. The observation pressed a button that suddenly turned on the light in a dark part of the abdomen.

Irritation of persisting nerve filaments in the involuting appendix gives us a cleanly diagnosticable class of cases that go the rounds of the profession with intestinal dyspepsia. Very often these patients go from physician to physician, without having the part of Hamlet observed in the play. In other cases the appendix takes the form of a question mark, and the patient goes from surgeon to surgeon. Like Marguerite with the petals the question runs: "He will operate; he will not operate; he will operate; he will not operate."

Whether the appendix is eventually removed or not will depend upon the personality of the last speaker in the case. Patients do not go to bed with their involuting appendices. The process is an irritative one, and is not an infective one. Further than that the involution process seems actually to guard patients against infective processes in the appendix, although these patients are quite as apt as any others to ask to have the appendix looked after. Many a surgeon has operated in these cases,

*A paper read before the meeting of the Southern Surgical and Gynecological Association, December 13, 1906.

and has removed what I termed as a normal appendix. It went into the waste basket instead of to the pathologist. The surgeon regretted that he had made a mistake in diagnosis, but the patient gained forty pounds in weight, and paid his bill. That does not satisfy a conscientious surgeon, but it sets him at thinking. The pathologist can give him an object lesson. He can show that the inner coats of the appendix are undergoing replacement

Fig. 2.—Nodular involution.

by connective tissue; that nerve filaments persist abundantly, and that the nerve filaments are surrounded by such groups of new cells that the irritation feature stands out in colors upon the map.

Normal involution of the appendix may begin in the early years of life, but most of the patients whom we see with this condition are past twenty-five years of age.

Connective tissue replacement of the appendix may, and usually does, progress evenly from the distal extremity.

Fig. 1 shows an appendix from which all normal structures, excepting peritoneum, nerve filaments, and capillaries, had disappeared. The lumen was obliterated wholly in this case. The patient had suffered from "intestinal dyspepsia" for about ten years. She was immediately cured on removal of the appendix.

Fig. 2 shows an appendix of a rather rare type, in which involution was progressing in the form of nodes. The bulging parts in the cut represent internodes of mucosa and lymphoid tissue, while the constricted parts represent nodes of connective tissue replacement of such structures. No lumen was left patent at the nodes. This patient had suffered for some years with intestinal dyspepsia, and with rather more than ordinary discomfort in the appendix region. He was cured at once by removal of the appendix.

In most of the cases we find the proximal portion of the appendix still patent and carrying a thin layer of mucosa, with involutionary changes most marked toward the distal extremity.

Fig. 3 shows a cross section of the appendix of Fig. 1. The circular line of cleavage between former tissue planes differentiates the appendix that is undergoing an involution process from the scarred appendix which is found after an infective appendicitis.

The symptoms of normal involution of the appendix begin gradually, and are usually given the dignity of the diagnostic entity of "intestinal dyspepsia." The appendix is sometimes included as a possible causative factor, but is usually left out.

What are the symptoms of normal involution of the appendix? They may be divided into two groups.

First, the group of the endless chain of symptoms running out of the hawse hole of autointoxication.

Next, four links of the chain which suffice to hold us short up to the diagnosis. These are the four links: (1) Intestinal dyspepsia; (2) a sensation of discomfort in the appendix region; (3) an appendix that feels narrow and hard on palpation; (4) hyperesthesia of the right lumbar plexus of nerves.

Now let us elaborate a bit.

(1) What are the characteristics of intestinal dyspepsia of involution appendix origin? Persistent distention of the cecum and ascending colon with gas. Irritation of the entrapped nerve filaments of the appendix irritates the intimate ganglia of the bowel wall (Auerbach's and Meissner's plexuses) and apparently causes the greatest degree of disturbance in that part of the bowel which is nearest to the original point of irritation.

(2) The sensation of discomfort in the appendix region is characteristic. The patient has a tendency to press upon the abdomen at that point with his

Fig. 3.—Transverse section of the appendix, showing replacement of the inner coats by connective tissue.

hand, or to lean against a table occasionally. The sensation may pass away for a few hours, or even for a few days at a time, but it is soon back again, and it lasts for years. Formerly I told patients that their discomfort was caused by the presence of gas in the cecum and ascending colon. I was wrong about that. Now when I hear other physicians tell patients the same thing I know that they are as wrong as I used to be.

(3) The appendix that is undergoing involution changes feels harder on palpation than a normal one. So does an Edebohls' appendix ("Congestion caused by the pressure of a loose kidney upon the superior mesenteric vein"). So also does a scar appendix. All three appendices cause symptom No. 4 (hyperesthesia of right lumbar plexus).

How are we to separate the three types of appendix?

The scar appendix goes with a history of previous infective invasion. Edebohls' appendix feels plump on palpation—the plumpness of interstitial exudation. It is often tender on pressure, and a loose right kidney is found with it.

The appendix which I describe feels narrow and hard on palpation—the hardness of hyperplastic connective tissue. It has no history of infective invasion, and there are times when it is not at all tender on pressure. Further, the scar appendix may be the seat of acute or chronic infective invasion at any time if lymphoid tissue and mucosa remain. Edebohls' appendix may be the seat of acute or chronic infection at any time, although it usually gets up protection. The appendix which I describe is not at any time the seat of acute or chronic infection, so far as I am able to learn.

(4) In the scar appendix, in Edebohls' appendix, and in the appendix which I describe, there is one constant diagnostic sign in hyperesthesia of the right lumbar nerve plexus. Press upon the abdomen at a point about one inch to the right and to the left of the navel, carrying the finger points well down toward each side of the spinal column. This will make pressure upon the right and left lumbar plexuses. The patient will tell the rest of the story.

From what other causes are we to differentiate the intestinal dyspepsia that goes with involution of the appendix?*

(*a*) From scar appendix and from Edebohls' appendix, by the features already described; (*b*) from bile-tract adhesions, "gall-spider cases," by the predominance of gastric dyspepsia, and by tenderness and muscle protection of the gall-bladder region; (*c*) from eyestrain cases, by the predominance of gastric dyspepsia in the latter, and by having the possible eyestrain factor worked out by an ophthalmologist who reports upon muscular imbalance rather than upon "the sight;" (*d*) from visceral ptoses, by the ptoses in evidence.

It is not necessary to go into further details, because bile-tract adhesions, eyestrain, visceral ptoses, and appendices undergoing involution cause such a large proportion of all dyspepsias that one who is in the habit of eliminating these causes in a diagnostic way will have his own methods for following up other dyspepsias.

What are we to say to patients who come for advice about appendices that are undergoing harmful involution? My own custom is to tell them that it is not necessary to have the appendix removed, so far as securing safety is concerned. It is merely a matter of expediency. Before I understood the subject I sometimes told patients that the appendices which were always growling might better be removed in order to avert possible explosions in the future. This advice was given upon a wrong basis. Now I tell the patients that if their physicians can keep them comfortable and maintain a good general health standard there is no need for operation—even though the operation is rather unimportant as surgical operations go. The patients leave the office relieved of their apprehensions, but a good many of them will turn up again in about a year and say that they are tired of making it a business to keep well. They have too many other things to do. They get along pretty well under medical treatment, but they weary of keeping it up. Friends get after them and persuade them to obtain a remnant lot of advice, good, bad, and indifferent.

In my first published contribution to the subject of the appendix that is undergoing normal involution changes, reasons were given for dissuading physicians from adopting the nomenclature which had been adopted by some of my assistants and by some of the physicians who for convenience' sake and for brevity had given this type of appendix my name. The nomenclature went wrong and got to stand for normal appendices. That will not do at all. I have never at any time, in speaking or in writing, advocated removal of the normal appendix, even when it appears in the field conveniently during the course of some other operation. My dictum has previously been, leave the appendix alone until it is infected and then lose no time in having it inspected.

Of late I have had to make a change, and now remove uninfected appendices that are undergoing normal involution changes, provided that the patients and their physicians are agreed upon making the request. It is a different attitude from the one that the surgeon is bound to take, on moral grounds, when a case of infective appendicitis comes under his care and responsibility.

It is a pity that the nomenclature for the appendix that is undergoing involution changes went wrong in two instances: when the title of normal involution of the appendix failed to engage professional interest, and when such an appendix called by my name got to stand for a normal appendix. Mr. Cleveland has said that in social and in political economics nothing is more dangerous than phrases. In medical economics nothing is more dangerous than nomenclature. The term "wood alcohol" has caused deaths and blindness because few people are scared by wood, and fewer still are afraid of alcohol. The term "gonorrheal rheumatism" has led to giving patients antirheumatic treatment when that sort of treatment was exactly what they could not bear. Increasing the natural physiological resistance of the patients would have been found to be the keynote to successful treatment of the cases if the word "septicemia" had appeared in place of "rheumatism." The appellation of "catarrhal appendicitis" has caused endless deaths and disaster, because it was the sand in which so many advisors hid their heads when gangrene and perforation of the appendix were impending. I have operated in very many cases of appendicitis that had been diagnosticated as "catarrhal," and have seen only one or two that could properly and safely have been classified under that title.

Let us get right on the nomenclature of normal involution of the appendix, and if it is called by any more brief term, let us not under any circumstances have it stand for the normal appendix. The subject is as important as any other subject with which the physician has to deal regularly in his daily routine of work, for there are few cases of any one sort which one will see more often than cases in which the appendix is undergoing harmful involution changes, and causing intestinal dyspepsia.

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*Blake described, in the *Annals of Surgery* for September, 1905, similar symptoms, caused by faulty mesenteric attachment of the appendix, and some years ago I ascribed such symptoms to "torsion of the appendix." At that time the appendices had not been examined microscopically, and they may have been appendices undergoing involution changes.

THE CAUSE AND CURE OF CANCER:

AN HYPOTHESIS AND A PRACTICAL SUGGESTION BASED THEREON.

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In the light of the hypothesis which I wish to submit, it would seem that a new line of procedure in dealing with cancer is susceptible of definition, which it is barely possible may be found to involve a measure of efficacy, if such practical application be thought worth while.

Our ignorance of the real etiology of cancer being so great, and our knowledge practically confined to studies of its ravages, one is certainly at liberty to speculate, so long as one's intellectual excursions into unknown seas are not chartless, reason and common sense minding the helm. Moreover, the disease is becoming more prevalent, challenging more and more our much boasted medical science to prove its abilty to cope with the fell scourge. In 1900 a few less than 33,000 died in the United States alone, appealing to medicine in vain. In England the death-rate from cancer is about 902 per million. In Germany, in the twenty years ending in 1898, the death-rate from cancer doubled.

Here I wish to say that some of the physiology in this paper may not seem orthodox; in fact, to some it may sound esoteric rather than scientific. But let us for once, in this matter of which we know little or nothing, follow Socrates' advice, concede our ignorance, put aside for a little while the authority of the schools, and begin all over again—divorce ourselves from mere tradition and prejudice, as Spencer did when he wrote the Synthetic Philosophy. It is not alone the scheme of spiritual salvation which may be served by thus becoming as little children—in science also this has served its purposes.

If Cohnheim could assume, hypothetically, an aberrant embryonal cell, which no one has ever demonstrated, and which, in the nature of things, is inadmissible of demonstration, then the writer feels that he can, no less properly, break new ground in the predication of principles.

Before proceeding directly to the subject proper, let us for a moment consider the present attitude of the profession toward this problem. The theory of parasitism is still somewhat to the fore, although the Harvard Commission discredits it and the Imperial Cancer Research Fund rejects all known theories and advances no new one. Those which have chiefly engrossed the attention of the profession have been Hansemann's theory of asymmetric cell division (karyokinesis); the parasitic theory of Podvyssotski and others, in which have figured the coccidium, the psorosperm, Hoffman's parasite, and the gregarina; the theory of Adamkiewicz, which affirmed that the cancer cells were themselves the parasites, merely resembling epithelial cells, and producing cancroin, which caused the cachexia; and the theory of Klebs, which alleged a fructification of epithelial cells by leucocytes. All are familiar with the theory of Beard, recently advanced.*

Here the writer would say that it is his belief that parasites may be concerned in the etiology of cancer in so far as they may constitute causes of local irritation, but he regards the feverish search of investigators for a tangible, specific cause, of parasitic nature, as futile. This subject of parasitism will be touched upon again. We shall now take up our hypothesis.

If we may conceive of the carcinomatous process as a manifestation of perverted *growth*, in other words, of perverted physiological energy (the cancer tissue, from a broad viewpoint, being not in itself histologically foreign to the organism), then may we not, without concerning ourselves too intimately with the rationale of such perversion (which in the nature of things is hardly possible of exact and scientific formulation, anyway) seek to utilize this perverted energy in vicarious channels; that is to say, divert it to sane physiological uses? We do not know what electricity is, yet we can harness it for practical purposes.

At that degenerative period of life which is so closely related to the occurrence of cancer, when cessation of the sexual functions and atrophy of the sexual organs supervene, may there not be a quota of that dynamic element that we shall call, for want of a more definitive term, physiological energy, which finds itself at a loss, as it were, for lawful occupation in the economy? What more "natural" than that, being at liberty, so to speak, it should expend its force in ways biological but mischievous. As Nature abhors a vacuum, so she abhors unused energies.

As youth is the developmental, constructive period of life, so age is the disintegrative period—disintegrative as regards the "vital forces" not less than the somatic fabric. This is a trite saying, but a truth which will bear restatement in this connection.

We are accustomed to think, and there is a basis of fact for the belief, that the races other than the white are physically inferior to the Caucasian type. The negro is certainly so, the yellow man somewhat less so. The Eskimo is a diminutive, fat, short-lived animal. The people of Burmah, Persia, Borneo, and India are certainly not characterized by surplus energy. In brief, may we not find here a partial light thrown upon the less frequent occurrence of cancer among these peoples because of a lesser sum-total of energy, which is consequently less liable to suffer mischievous diversions in some individuals at certain biological epochs, by reason perhaps of external irritations in the form of trauma, or internal influences in the form of excessive meat eating? Here even the possible presence and potential arrangement of the embryonic cell, which Senn postulates, becomes less operative, because less charged with a biological impulse both excessive and perverted and pregnant with mischievous possibilities.

Coley's occasional results in the treatment of the cancer group may depend essentially upon the cytophagous reaction which ensues after the injection of the toxins used, and which must involve the diversion and engagement of considerable energy. But the effect is ordinarily too evanescent. The setting up of an actual erysipelas when possible, or of a number of consecutive attacks of erysipelas, has been more efficacious because of the prolonged and persistent demand on the forces concerned in a very active phagocytosis and in local repair. Coley's work takes us to the very threshold of the secret and gives us a peep through the mist which veils the noumena of carcinoma and sarcoma.

Again, in the influence of oöphorectomy over mammary growths may we not find another guiding thought? May not the physiological utilization of that "body force," which operates when called upon as the inciting cause of the process of repair in a laparotomy wound and in the pelvic tissues which have been divided, account in a vicarious sense for the phenomena of retrogression in, or disappearance of, the growth?

Senger and Mohr have reported cases in which incomplete removal has been followed by cure. Linduer, Hahn, Kroenlein, Alsberg, Baer, and Steudel

*MEDICAL RECORD, February 2, 1907.

have reported cures of gastric cancer following simple gastroenterostomy. It would not seem that such results—stupendous when we consider the malignant nature of cancer—are explainable on the mere ground of removal of irritation and relief of hyperemia.

Might not analogous and perhaps curative results be obtained by the removal *from time to time* of certain epithelial structures (*e.g.* skin, as in grafting operation), as well as extirpation of the growth itself (a *sine qua non*), thus affording vicarious avenues for the operation of forces which otherwise will expend themselves in other quarters with disastrous results? The establishment of setons and issues would hardly be consonant with modern surgical principles.

From the foregoing it will be seen that our hypothesis takes account both of Cohnheim's theory and, in a sense, of parasitism. For the etiology of a benign growth we postulate Cohnheim's theory, the type of growth being determined by what type of embryonic cell is operative, plus perhaps trauma, inducing a *locus minoris resistentiæ*. Here, again, we may conceive, theoretically, of parasites furnishing the source of irritation no less than in the case of malignant growths—an incidental factor in both instances. We may also conceive of a misplaced embryonic cell as constituting *per se* a competent source of irritation, without introducing assumptions of additional factors in traumatism, due to cytolergy of some sort not necessarily related to traumatism in the conventional sense.

For the etiology of malignant growths we must postulate a further factor—perverted energy. We must also postulate a selective affinity of this perverted energy for epithelial tissues, they constituting the media for the appearance of cancer in tangible form for the reason that they are most exposed to cytolytic damage and most wanting in resistance because of their high state of differentiation.

Castration is said to have no hastening influence on the time of the occurrence of the disease. This may be due to the mutilation involved, operating in like manner to oöphorectomy.

Cancer has been known to undergo spontaneous disappearance. Here we may invoke the probable occurrence of some readjustment of the economy's energy. Some infection, say of la grippe, erysipelas, or malaria—which Dahlgetty thinks may account in some way for the relative immunity of the women of Hindoostan—may account for the phenomenon. Phagocytosis incidental to the breaking down of involved tissue may, if intense, occasionally suffice, though a local phagocytosis would not be as efficacious as a general cytophagous participation, as in erysipelas. It is essentially a question of adequate vicarious utilization of perverted energy.

Two things are commonly put forward in support of the parasitic theory of cancer. First is the tendency of cancer to form colonies or foci, and second, the tendency to lymphatic dissemination. We may regard these as simply two degrees of parasitic metastasis from the parasitic point of view, but it is possible, in the light of our hypothesis, to view them from a totally different standpoint. These metastases may be only apparently parasitic. Autoinoculations, which we have successfully produced, are essentially primary growths. So also some of these apparent metastases may really be primary in nature, just as much so as the original growth. After the original growth has led to lowered vitality and malnutrition, recognized factors in inducing that which our postulates included as a *locus minor resistentiæ*, we can see how such autoinoculations, impossible in the normal subject, become possible in the diseased. Whereas originally only one embryonic cell may have played its part in Nature's laboratory, now we are introducing many. All the postulates are satisfied and there is no need of invoking the agency of parasites. These living cells of the embryonal type, vicariously endowed with a potentiality for life and growth, are, under the special conditions, invested with powers not inferior to those of any parasite. These transposed or transplanted cells still exhibit the phenomenon of lawless growth, not because of any inherent faculty or the influence of a specific germ, but by reason of the repeated conditions already postulated. Here we must assume a surplus in the organism of perverted energy.

It is altogether likely that what we know as colonies and metastases are usually due to lymphatic dissemination, not of parasites, but of cancer cells alone. They may also be primary in some instances. It has been noted by many observers that there is a lesser tendency to metastasis in the cases occurring early in life. This is probably because all the factors are relatively less operative. Young and healthy individuals cannot be inoculated simply because the fundamental factor is wanting.

If cancer is an infectious disease, why is it that the negro, more susceptible to tuberculosis than the white man, is vastly less susceptible to cancer? The explanation lies deeper than the bacteriological domain.

Another argument against the swallowing whole of the theory of parasitism is the relative fewness of such parasites as have been found when compared to the number of cancer cells. But, of course, nobody now believes that the parasites aforesaid have any specific relation to cancer.

We have also to consider the metamorphosis of benign into malignant growths. In this case the tumor merely plays the part of a local irritation, the epochal occurrence in the organism of perverted energy furnishing the essential factor.

Here we may call attention to the fact that, after the menopause, the degenerating, atrophying female sexual organs themselves constitute, in a sense, foreign bodies, and are therefore especially liable to attack, provided a histological basis is present in the form of an errant embryonic cell of the epithelial or connective-tissue type, latent, but capable of being charged with the requisite potentiality, and awaiting only the other factors in the malignant equation.*

We know from sad experience that radical extirpation is not usually enough. Something is lacking. What this is we have attempted to analyze. Mere extirpation of the growth does not extirpate the fundamental factor. The operation exercises a salutary effect temporarily, but the cancer recurs in or near the scar when the process of repair is complete, or shortly subsequent thereto. We must in some way continue to harness the force concerned until such time as it shall cease to operate. The occasional successes of surgery depend upon the degree of potentiality of the force concerned, and, if we may so say, its "quantity." Degrees of malignancy are thereby determined.

Etiologically, cancer is of intangible, dynamic nature, which explains the baffling of investigators. They are all looking for something tangible. The tangible things they find are all secondary.

The part played by heredity is a relatively un-

*In the *Journal of the American Medical Association* of February 16, 1907 (p. 625), there is an interesting query as to the possible influence of office treatments in exciting cancerous growth. We "irritate the uterus every day or every few days for a month or a year with chemicals and foreign substances."

[illegible] probably signifies merely a transmission [illegible] resisting powers, only one factor in pathogenesis.

Cancer in the very young must also be reckoned with. About 1 per cent. of 26,574 cases collected by Bürger, De la Camp, Borst, Glaser, and Lubarsch were in persons under 30 years of age. Hofmann, Muth, Malibert, Leopold, Beigel, Eckhardt, Gurlt, Czerny, Billroth, Port, Küstner, Andouard, Brückner, Pierre, Adam, Kelly, and McBurney have reported instances in persons ranging in age from 30 down to 13 years. In 15,134 autopsies after death from cancer collected by Bürger, none of the subjects was under 15. Congenital cancer has been described, and instances have been reported in those under the age of 13, concerning which the author has no statistics immediately available. Suffice it to say that the occurrence of cancer in very early life is occasionally observed.

The maximum incidence, in all the vertebrates, coincides with the decline of reproductive activity. It is altogether likely, therefore, that its occurrence in the young is due to sexual anomalies, the nature of which we can only conjecture, but which determine maladjustments of energy.

With respect to the alleged infectiousness of cancer, we may conceive of such being possible without invalidating our hypothesis. We do not have to assume a specific parasite. It can, of course, be infectious only to those satisfying all the postulates.

Our hypotheses ought to be not merely satisfying from the scientific standpoint; they ought also to point the way to practical possibilities. "The art of healing as practised by Hippocrates and Sydenham was founded upon the nature of things and on the limits of human ability." We must to-day approach the baffling problem of cancer with our science no less than our art similarly founded upon these things.

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OBSERVATIONS ON THE DIAGNOSTIC AND PROGNOSTIC VALUE OF THE EOSINOPHILES IN THE CIRCULATING BLOOD;

TOGETHER WITH A CASE OF RECTAL INFECTION BY SCHISTOSOMA HEMATOBIUM.

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Among the various forms of leucocytes, the eosinophiles have always been regarded with a marked degree of interest, and at present are claiming more and more attention by reason of their diagnostic and prognostic worth. Rindfleisch[1] was the first to describe them as "Kornchenzellen," but it remained for Ehrlich[2] to designate them as "eosinophile Zellen." Their practical value as a means of diagnosis has been proven, especially in three groups of diseases, viz., certain diseases of the skin, the acute infectious diseases, and some of the animal parasitic affections, particularly those of the gastrointestinal tract. Neusser[3] was the first to call attention to their increase in certain skin diseases. Turk[4] pointed out their importance in the acute infectious diseases, Rieder[5] first emphasized their absence in typhoid fever, while Brown[6] and Thayer[7] were the first to observe their enormous increase in trichinosis.

The object of this paper is to direct attention to the diagnostic and prognostic worth of the eosinophiles in some parasitic and infectious diseases and to emphasize their prognostic value in typhoid fever. The cases which follow occurred in the medical division of the German Hospital, service of Dr. I. Adler.

Case I.—Male, age forty-two years, German, book agent traveling in Long Island. The family and previous history bear no relation to the present condition of the patient. Two weeks previous to admission he began to lose his appetite, feel tired, and have pain in his legs, arms, and back. This general malaise gradually increased in severity, and, feeling very ill, he left Long Island and returned to New York. The week previous to admission he had headache, vertigo, slight dyspnea, two attacks of epistaxis, and a few chilly sensations. The pains in his limbs increased in severity, so much so that walking, dressing, and, in fact, any exertion, was painful. He consulted two physicians, both of whom diagnosed typhoid fever. The night before admission to the hospital he had a slight chill, followed by fever and sweating. He had no cough. His bowels were constipated.

The physical examination showed the patient to be well developed and fairly well nourished. His mental condition was clear. The face was flushed, very slightly cyanotic, and the expression apathetic. The tongue was dry with a central coating of thick brown fur, and there was a marked tremor on protruding it. Except for the base of the left lung behind, where there was a slight dullness with harsh breathing, also a few moist râles, the lungs were normal. The pulmonic second sound was slightly accentuated; otherwise the heart was normal. The abdomen was flat and slightly rigid; there was no localized tenderness, mass, or tympanites. The skin of the abdomen showed about six maculopapular, rose-colored spots. The liver extended in the midclavicular line from the sixth rib to just below the costal margin, and its edge could be felt as smooth, round, and firm. The spleen was just palpable on deep inspiration. The extremities were held in a rigid, extended position and showed on their flexor aspects a few maculopapular spots. There was no edema of the eyelids or extremities. The axillary and inguinal glands were not enlarged. Pulse 132, temperature 104.6° F., respiration 32.

The patient was put under typhoid precautions because of the history, temperature, enlarged spleen, rose-colored spots, and general appearance. The next day a full laboratory examination was made, with the following results: Hemoglobin, 60 per cent.; red blood cells, 3,424,000; white blood cells, 15,300. Differential leucocyte count (500 cells): Polynuclears, 49.4 per cent.; lymphocytes, 5.6; large mononuclears, 5.2; eosinophiles, 39.8; basophiles, 0.0.

The examination for plasmodia was negative, also the Gruber-Widal reaction for typhoid and paratyphoid bacilli. The feces were examined for blood by the aloin test, but with negative result. No parasites were seen. The urine was acid, amber, clear; specific gravity 1022; no albumin nor sugar. The diazo reaction was positive. The differential leucocyte count of 39.8 per cent. eosinophiles in 15,300 leucocytes at once suggested trichinosis and the exclusion of typhoid fever. Careful inquiry into the patient's history now revealed the fact that five weeks before admission he had partaken of canned pork-tenderloin, which he described as being only partially smoked. The second day the patient also complained of severe pain in the deltoids, glutei, and extensors of the thigh. Sections

from these muscles showed *Trichina spiralis* in large numbers. Two days later the patient for the first time presented slight edema around the ankles; at no time was there any facial or other edema.

The patient was in the hospital for seven weeks, and during the first two weeks the temperature, general condition, and eosinophilia fluctuated synchronously. Each rise in temperature and increase of muscular pain was accompanied by a corresponding increase in the eosinophiles, which at one time reached 48½ per cent. The diazo reaction remained positive for two weeks. Repeated examinations of the blood by the Gruber-Widal test for typhoid and paratyphoid and of the feces with the Conradi-Drigalski media were negative.

No attempt was made to treat the trichinosis, except by good nursing and rectal irrigations of thymol 1-10,000, and a little stimulation with whiskey and strychnine. Recovery was very slow, the patient gaining his strength so slowly that when he left the hospital he was just able to walk without aid; on the day of discharge from the hospital he still had thirteen per cent. of eosinophiles. The patient has just recently (1906) reported his complete cure and the total disappearance of muscular symptoms.

In this case the general appearance, history, spleen, skin, and diazo reaction all suggested typhoid fever, the study of the blood alone leading to the correct diagnosis. In December, 1905, and January, 1906, there occurred in the German Hospital eight cases of trichinosis in which the diagnosis was suggested by the eosinophilia. These cases will be reported later.

Peculiar interest attaches to our next case:

Case II.—Male, thirty-seven years old, German, manufacturer, admitted December, 1904. For the past ten years the patient had lived in various parts of South America, chiefly in Brazil. Seven years ago while there he contracted typhoid fever, which kept him in the hospital for two months; one month later while recuperating in a small inland town he had an attack of acute gastroenteritis with general abdominal pain and diarrhea. He improved except for the diarrhea, which, with an occasional intermission of one to two months, had persisted up to the day of admission. The patient had five to seven defecations a day, preceded by slight colicky pains; he described the stools as being very soft, but not fluid, containing at times blood and mucus. During the last two months the diarrhea and pain had increased and he had suffered a considerable loss in weight and strength.

The physical examination showed the patient to be poorly nourished, anemic, and emaciated. The lungs and heart were normal. The abdomen was soft and there was neither mass, tympanites, nor tenderness. The liver extended in the midclavicular line from the fifth rib to four cm. below the costal margin, the edge being felt as firm, round, and smooth. The spleen was not enlarged or palpable. The colon appeared distinctly thickened and could be traced throughout its entire extent. A digital examination of the rectum showed nothing abnormal. The urine contained a trace of albumin and a moderate number of hyaline casts.

Blood Examination: Hemoglobin, 62 per cent.; red blood cells, 4,448,000; white blood cells, 5,300. Differential leucocyte count (500 cells): Polynuclears, 55 per cent.; lymphocytes, 16.2; large mononuclears, 2.8; eosinophiles, 25.0; basophiles, 1.0.

The low leucocyte count and the history, together with the absence of muscular symptoms, edema, and fever, tended to exclude trichinosis. The diarrhea which had persisted for years, the bloody character of the stools, and the increased eosinophilia all pointed strongly to a parasitic infection of some part of the intestinal tract. This was corroborated by a careful examination of the feces. The feces were a light brown, alkaline, semifluid, homogeneous mass, odor not abnormally offensive. Macroscopically there were blood-stained mucus and minute clots of pure blood. The microscope showed blood, mucus, epithelial and pus cells, triple phosphate crystals, bile pigment, and the usual enormous number of bacteria. The most important result of the examination of the feces was the discovery of two varieties of nematodes—*Strongyloides intestinalis* and *Tricocephalus trichiurus*, and one variety of trematode, *Bilharzia hæmatobia*, or *Schistosoma hæmatobium*, which were abundantly present in every stool that was examined. Adult specimens of *Strongyloides intestinalis* were not seen, neither were the eggs seen, but an abundance of rhabditiform larvæ were observed in every stool. They measured approximately 65 by 35 microns and were actively motile for hours after being passed.

Infection by the *Strongyloides intestinalis* is very common in Cochin China, where it produces the disease known as "Cochin China diarrhea." Infections have been observed in the United States. Thayer[8] reported the first three cases in 1901, and since then others[9] have described five additional cases. In the discussion following the reading of papers on the subject, physicians from the lower Southern States reported having seen a number of cases, so that it is very probable that the disease is more widespread than is generally believed.

The second variety of nematode found was the rather common *Tricocephalus trichiurus*, or *Tricocephalus dispar*. Only the eggs were seen with their characteristic bipolar, light-yellow projections.

The most interesting of this trio of parasites was the rather rare trematode *Bilharzia hæmatobia*, or *Schistosoma hæmatobium*, for the recognition of which I am indebted to Dr. Charles Wardell Stiles, Chief of the Division of Zoology of the United States Public Health and Marine Hospital Service. While investigating the diseases of Egypt, Bilharz[10] discovered the schistosoma in the urine of persons suffering from hematuria. Since then its presence has been shown to be almost universal in Africa. In the Transvaal it is so common an infection that no Boer boy is thought healthy unless he passes bloody urine (Brock[11]). Cases are being reported in increasing number from South America, and it has recently been observed in Porto Rico and the Philippines. It is also prevalent in Japan, where Tovama and Tsuchiya[12] report cases.

The infection is now considered to take place in either of two ways. Sonsino[13] claims that the infection occurs through the gastrointestinal tract by means of infected food or water, while Brock[11] considers that the mode of entrance is through the skin while bathing in infected streams. This he bases on the fact that the hundreds of cases seen by him in the Transvaal were nearly all in boys of from ten to twenty-one years, which is the bathing period of the Boer boy. The adult worm finds its way into a small vein of the portal system, becomes encysted there, and lays its eggs; these burst the wall of the vessel and so escape into the neighboring tissues and vessels. The organs most frequently involved are the bladder, ureters, pelvis of the kid-

ney, seminal vesicles, mesenteric glands, and rectum. They have been found in the liver, kidney, and prostate by Kartulis[14] and in the lungs by Mackie[15] and others, and even in the left ventricle by Greisinger.[16] The usual site of rupture is in the bladder. When the encysted worm ruptures hemorrhage occurs and when this takes place into the bladder hematuria results.

The pathological results are induration, ulceration, and polypoid vegetations. It is only in the rectum, however, that the vegetative and ulcerative changes take place. The only symptoms which seem to be constantly produced are diarrhea and pain. In our case the eggs were found in every stool examined. They were quite typical, being 0.16 mm. long and 0.06 mm. wide; the spine of the egg was placed laterally in our case, instead of terminally, which seems to be the rule in rectal infections. The cause of this difference in the location of the spine is not at present known, but the trend of thought seems to be toward the opinion that there are two different species. A proctoscopic examination revealed many small ulcers, but no polypoid vegetations were seen.

The disease is rare in the United States, only seven cases having been reported. The first case was seen by Booth[17] in 1882, the second by Curtis[18] in 1896, the third by Porter[19] in 1897. Porter's case was referred to by Brooks[20] and Sondern.[21] The fourth case was reported by Walker[22] in 1900 and again observed by the Raffertys[23] in 1904. The fifth case was seen by Pool[24] in 1903, the sixth case by O'Neil[25] in 1904, and the seventh case by Anders and Callahan[26] in 1905. Smith[27] reports seven cases occurring among Boers who came to this country for exhibition purposes after the Boer war. All these were urinary infections, while ours, I believe, is the first case of rectal infection reported in the United States.

In connection with the hypoleucocytosis, almost constantly observed in typhoid fever, is the extraordinary diminution of the eosinophiles, and in the great majority of cases their disappearance, which usually occurs in the very beginning of the infection. Reider[28] in ten consecutive cases could not find a single eosinophile in a thousand cells, while one mild infection showed 0.3 per cent. of eosinophiles. Jez,[29] Turk,[30] Zappert,[31] and others have since confirmed this observation. This is true to such an extent that in a doubtful case the diagnosis may almost be made by the presence or absence of the eosinophiles. In fact, Nägeli,[32] in view of his experience in an epidemic of typhoid fever, excludes typhoid in every case in which the characteristic absence or diminution of the eosinophiles is not demonstrable. The cause of this disappearance, according to Metchnikoff, is the inhibitory action of the typhoid toxin on the bone marrow. From all this it would seem probable that the behavior of the eosinophiles in typhoid fever would afford valuable clues as to the course of the disease. In accordance with this view 500-cell, differential leucocyte counts have been made daily in all cases of typhoid fever at the German Hospital; in all, over forty cases have been observed both in the public and private wards. Cases which retained from 0.2 per cent. of eosinophiles ran a very mild course; in the moderate and severe cases every eosinophile disappeared absolutely. In the moderate cases the eosinophiles began to reappear at the beginning of the fourth week, at first only in small numbers, from 0.2 to 0.5 per cent.; subsequently there occurs what has been called an eosinophile crisis, when they increase in number from these small percentages to from two to five per cent. within twenty-four hours. When this eosinophilia sets in and remains more or less constant, convalescence is well advanced and relapse is highly improbable. We have, however, never seen one occur under these conditions. If no eosinophilia occurs when the patient is apparently well on the way to recovery, or if having been observed the eosinophiles again disappear, it may be taken as a reliable sign that the pathological process is still active and a relapse almost certain, even though the temperature and all other conditions have apparently been normal for many days. The importance of this fact for prognosis and general management is obvious. It is our observation that until a patient has eosinophiles in his blood his condition is such that he cannot be discharged from the hospital, and we have also learned that to discharge a patient without an eosinophilia is dangerous. One patient this fall (1905) was discharged at her own request. Although her temperature and general condition had been normal for fourteen days, she had no eosinophiles; in three days she was back with a severe relapse. Another patient, who at the end of the fourth week had an eosinophile count of 2½ per cent., suddenly lost this, began to run an elevated temperature, and was afterwards proven at autopsy to have had a fresh infection resulting in a colotyphoid with tremendous hemorrhages. In all the fatal cases the lost eosinophiles were never recovered. One patient during convalescence had an eosinophilia of 3.4 per cent.; he then had a relapse, but twenty-four hours before the onset of the fever the eosinophiles disappeared. Two patients, after their temperature had been normal for two weeks, did not recover their strength, although tonics, food, fresh air, and sunshine were tried. Finally, after having been ill for nine weeks, the eosinophiles and strength returned simultaneously.

In conclusion, a few remarks based upon the foregoing observations might be made:

1. It is of importance not only to count the leucocytes, but to make a careful differential count and to repeat it frequently throughout the course of the disease, until in fact the patient is dismissed.

2. The entire disappearance or very marked diminution of the eosinophiles, together with a distinct leukopenia, goes far to establish the diagnosis of typhoid fever in doubtful cases.

3. A normal or increased percentage of eosinophiles, other things being equal, speaks against typhoid. This holds good, of course, only for the febrile course of the disease.

4. In cases of undoubted typhoid, the presence of eosinophiles, even in small numbers, during the first week is a favorable sign and speaks for a probable mild type.

5. No typhoid fever patient should be considered cured or dismissed from observation before he has regained permanently, at least, a normal percentage of eosinophiles.

For the suggestions leading to this paper and the help in preparing it I wish to thank Dr. I. Adler.

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A REPORT OF FOUR LUETIC CASES UNASSOCIATED WITH OBSERVABLE SECONDARY MANIFESTATIONS.

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THE following histories are from cases treated in private practice, the patients having sufficient intelligence to appreciate the character of the disease in question as well as the necessity for a positive diagnosis. They aided me in every possible way in my observations, and I never had any reason to doubt their veracity.

CASE I.—Mr. A., twenty-two years of age, single, employed as a clerk in a large wholesale house. First came under observation September, 1902, presenting a small nonindurated ulcer lying in the sulcus on left side of frenum. It was impossible to estimate the incubation period because of frequent intercourse. The ulcer had been present three days and no treatment of any kind had been applied previous to the first visit. Although a diagnosis of chancroidal or herpetic ulceration was made, the possibility of syphilitic infection was explained, expectant treatment advised, and the patient placed under observation, making three visits to the office each week for a period of three months. The ulcer, which became slightly indurated, persisted for three weeks when it healed without leaving a cicatrix, although the induration remained for a week or more. He also had a mild bilateral inguinal adenitis which entirely disappeared four weeks after the ulcer healed. Six weeks after the first consultation, enlargement of the axillary and cervical glands was observed, but when the patient stated that he was subject to mild attacks of adenitis, no importance was attached to the discovery. Throughout the entire three months he remained in excellent general health, had no fever, no eruption, alopecia, throat or mouth symptoms, nor, in fact, any manifestation of secondary syphilis, and was therefore told that although the danger could possibly extend over another month he could discontinue his office visits.

On May 10, 1906, he again consulted me regarding a livid red infiltrated nonpruritic circinate patch covered with a few tenacious epidermic flakes on the palm of the left hand at the base of the thumb. The chain of glands along the radial side of the flexor surface of the forearm were the seat of gummatous degeneration, and the overlying epidermis was stained a deep copper color. The pharyngofaucial and nasal mucous membranes were extensively infiltrated. The patient also complained of severe headaches and rheumatic pains. This state of affairs had existed for about three months, the symptoms gradually increasing in severity. Six grains of the salicylate of mercury were given in divided doses by means of deep muscular injections, one grain being administered each week. As a result of this treatment the lesions promptly disappeared. Although having been advised to report again in two weeks for further treatment he has thus far failed to follow instructions. This patient absolutely denies any primary, secondary, or tertiary manifestations excepting those above mentioned. In this case one must consider the possibility of the secondary eruption occurring after the ninety-day limit and being so mild as to escape his attention in spite of the fact that he had been warned of its possible occurrence. It is also possible that primary and secondary lesions existed before or after my first series of observations, and either escaped his attention or were wrongly diagnosed. Finally he may have for some unknown reason given false answers to questions relative to his history.

CASE II.—Mr. H.,* twenty-two years of age, waiter by occupation, unmarried and presenting a history of several attacks of herpes progenitalis. On October 26, 1903, three days after sexual intercourse, he developed a group of herpetiform vesicles situated in the sulcus one-half inch from the frenum, which soon ulcerated and uniting developed a discharging ulcer about one-half inch in diameter involving the frenum and glans. Several small ulcers formed on the glans and mucous surface of the prepuce. Cleanliness was difficult in this case because of the excessive purulent discharge and a somewhat redundant foreskin. Beginning on December 23, the lesions were sparked for five minutes every second day with the current derived from the

*The history of this patient was given in an article entitled "The Treatment of Chancroidal, Herpetic, and Varicose Ulcerations by the High-Frequency Spark." Published in the *Journal of Cutaneous Diseases*, December, 1905.

secondary coil of the Piffard hyperstatic transformer, a static machine being employed as the generator. After seventeen days of such treatment the sores had entirely healed. On November 24, 1906, he presented a scaly papular syphilide on the palmar surface of the left hand, a circinate papular syphilide on the dorsal surface of both hands, and two circinate papular slightly eroded patches on the glans penis. On the left shin there was a large hypertrophied papule covered with psoriatic scales. On the outer aspect of the right foreleg there were several infiltrated patches of the papulosquamous type. These lesions had existed about six or eight weeks, but responded at once to mixed treatment. At the present writing nothing remains but the characteristic pigmentation. This patient positively declares that he never had any cutaneous lesions with which I am not acquainted, excepting an occasional attack of herpes, which were never severe enough to merit attention. He was married in the fall of 1904, and so far as can be determined his wife has never developed any signs of the disease. Inasmuch as the patient was only under personal observation for a period of seventeen days, coupled with the fact that no direct attention was given to the possibility of syphilitic infection, mild secondary manifestations could readily have been overlooked.

Case III.—Mrs. W., twenty years of age and married about one year. The first consultation was on August 8, 1904, at which time she presented a large ulcer on the right labium majora with a smaller one on the left side. Both labia were edematous and indurated. The ulcers had been present about two or three weeks. Both chains of inguinal glands were involved, but there was no adenitis elsewhere at the time, nor did any develop subsequently. A careful inspection of the entire body failed to demonstrate any other lesions of the skin or mucous membranes, excepting a very slight sore throat which only lasted three days. She was quite certain that no other eruption had existed prior to her first visit. The possible nature of the disease was explained to both the patient and her husband, who positively denied any syphilitic history, and they promised to note any suspicious symptoms. The ulcers had entirely healed by August 22, and up to September 15 not a single secondary manifestation had been observed. On this date, however, the patient gave birth to a male child of about seven and one-half or eight months' gestation. The child, which only lived a few minutes, was poorly nourished and although not having definite lesions, presented the general features of a syphilitic infant. The placenta also showed signs of degeneration. One year later another premature labor occurred at about the seventh month. This time, according to the statement of the girl's brother, the infant was covered with sores, poorly nourished and lived but a few hours. In the interval of time elapsing between the two confinements there had been no other manifestations of the disease nor had antisyphilitic treatment been administered. In September, 1906, an apparently healthy, full term child was born. The husband failed to contract the disease and they both consider my fears groundless, but it will be of no little interest to watch for future developments in this interesting family. The fact that the husband failed to become infected naturally suggests the possible source of the patient's inoculation. In this connection I recall a young woman who was married in June, 1902, and who developed a genital chancre in July of the same year, which was followed in six weeks by secondary symptoms. Her husband positively denied having had the disease, nor could I discover any manifestations of the same upon his body. Although failing to take any special prophylactic measures, he has to this time failed to contract the disease.

Case IV.—Mr. J., twenty-seven years of age, single, employed as a bookkeeper in a publishing house. This patient developed a severe attack of gonorrhea on January 17, 1903, nine days after cohabitation. Thirteen days later he developed a slightly indurated penile ulcer, which persisted for three months, leaving a cicatrix after healing. His gonorrhea, which was complicated with prostatic involvement, necessitated daily treatments for a period of four months, during which time I made daily examinations of his entire body for the secondary eruption which was certainly expected. The inguinal glands were involved, but at no time was any general adenitis, alopecia, sore throat, nor any manifestations of the suspected disease observed. Yet this patient on March 12, 1906, presented unmistakable signs of neglected syphilis. There was an ulcerating lesion of the left shin, accompanied with characteristic pigmentary changes, which had begun, according to the patient's observation, some weeks previously as a bruise, the result of an injury. The ulcer failed to improve under local applications, but promptly responded to mixed treatment. He states positively that he never had cutaneous lesions other than those recorded above.

The other histories may be defective, but surely if this patient had secondary symptoms they must indeed have been slight. Whenever a patient consults me regarding a possible primary lesion of syphilis I have always depended upon the development of the secondaries for a positive diagnosis and always supposed myself safe in so doing. I can distinctly recall many cases of young men having suspicious sores several years ago who subsequently failed to develop secondaries and who were told they need not worry longer.

In all probability the diagnosis of chancroid or ulcerated herpes in these cases was correct. For their sake at least it is to be hoped so. I specifically recall one young gentleman who contracted a sore having an incubation period of two weeks from a young woman who at the time was under treatment for secondary syphilis. This patient was placed under strict observation. The sore required several weeks to heal. At one time there appeared to be a slight macular eruption on the thorax under the arms, at the same time he became anemic and developed acne pustules upon the back. A consultation was held with an eminent syphilographer, who decided against specific infection. Under tonic treatment the patient soon regained his usual good health and has retained the same to the present writing.

Now the following question naturally arises: Upon what features can a safe diagnosis of early syphilis be made, and when should constitutional treatment be instituted? This question has been discussed in text books, in papers and at society meetings, yet the opinion of the medical profession remains divided. Fournier,[1] who is of the same opinion as Ricord,[2] starts constitutional treatment as soon as the primary lesion presents the features of the syphilitic chancre. By so doing he believes an ultimate cure is more likely to be effected. At the same time he advises extreme caution and whenever the slightest doubt exists he awaits the appearance of the secondaries. Van Buren and Keyes,[3] Lydston,[4] Wild,[5] and in fact the major-

ity of writers concur in this opinion. Dumesnil,[6] Taylor,[7] and others, on the other hand, owing to the fact that nonsyphilitic sores may simulate the typical chancre and *vice versa*, consider the difficulties of a diagnosis in this stage so great as to make the giving of mercury unjustifiable, no matter how plainly marked the case may be. The only advantage in employing constitutional treatment in the primary stage is in the possible prevention of severe secondary symptoms and to attack the disease before it becomes deeply seated. Now as a matter of fact the secondaries will appear as a rule whether mercury has been given or not. The fact that they sometimes do not occur when mercury has been given is certainly a poor criterion inasmuch as they may fail to appear in cases which have not been so treated. Regarding the effect of early treatment upon the remote course of the disease there is no good reason to believe that this method has any advantage, at any rate the evidence is as strong one way as it is the other. If energetic treatment be given immediately upon the appearance of the secondaries these symptoms will usually be very mild indeed. We must also consider the moral effect of the secondary manifestations. If during the primary period of the disease the patient receives proper instruction and is told that the diagnosis rests upon the appearance of secondary symptoms, he will naturally be impressed with the nature of the disease when these symptoms develop. On the other hand, if early treatment has been given and the secondaries fail to follow, the patient will, after a few months, unless he has unlimited confidence in his physician, doubt the diagnosis and become indifferent to the treatment. It not infrequently happens that this feeling of doubt is also shared by the physician.

A positive diagnosis can of course be made when the secondaries develop and appropriate treatment immediately begun. But when the secondaries do not follow a suspicious sore, can one without awaiting further evidence positively say that syphilis does not exist? All authors with whose writings I am familiar, although admitting that the secondary symptoms may be so mild as to be overlooked or ignored by the patient, believe they always do occur and can always be demonstrated by careful observation. It is no uncommon occurrence, especially in dispensary practice, to have patients present tertiary lesions and have no knowledge of primary or secondary symptoms. This happens most frequently in women, who often have a uterine chancre and who very often overlook the subsequent inguinal adenitis and superficial eruptions. Again the eruptions of the secondary period may be modified by being associated with other skin affections, and the true character of the disease not recognized.

The first three cases mentioned in this paper may or may not have had secondary symptoms. The fourth case did not develop them unless they appeared after one hundred and twenty days. It is of course possible that this patient may have had a neglected infection prior to my observations. Considering that the case is truly represented, it is probable that such cases are of rare occurrence, and as a rule it is safe to base a diagnosis upon the appearance or nonappearance of the secondary manifestations. It should, however, be borne in mind that these symptoms may not only be mild but entirely absent. In this connection the organism of Shaudinn and Hoffmann should receive consideration. Although the majority of investigators feel certain that this organism is the etiological factor of syphilis, there are many dissenters, and until absolute proof is forthcoming one may not be entirely exempt from criticism if the diagnosis be based upon the finding of the *Spirochæta pallida* alone. So far as I am aware, all patients having a sore in which these organisms were found have later developed secondaries, while on the other hand cases in which the pallida could not be demonstrated failed to develop secondary manifestations. I[8] reported several such cases last spring. W. B. Trimble,[9] at the ninety-seventh regular meeting of the New York Society of Dermatology and Genitourinary Diseases, reported the case of a man thirty-four years of age, presenting a lesion of the upper lip having all the features of an initial sclerosis. This patient was seen by several eminent dermatologists, who unhesitatingly made a diagnosis of chancre. A careful search for the *Spirochæta pallida* resulted negatively. This patient was under observation for four or five months, at which time the ulcer, although reduced in size, was still present, but secondary lesions had failed to develop. It is safe to state that in all probability there would be considerable difference of opinion regarding the advisability of starting mecurial treatment in this case. Dr. Trimble preferred to keep this patient under prolonged observation rather than make a positive diagnosis upon the evidence as presented. Many physicians will agree, while others will disagree with this method. I am still in accord with such procedure in spite of experience with cases as recorded in the beginning of this article. Regarding the association of the *Spirochæta pallida* with the primary and secondary lesions of syphilis, it must be remembered that they often can not be found after the process of repair sets in. They are also difficult to demonstrate upon the surface of such lesions. The search should therefore be made as early as possible and in every case it is advisable to obtain a specimen after a fairly deep curettage. In doubtful cases the chancre may be excised and microscopical sections studied. The diagnostic serum devised by Wassermann, Neisser and Bruck[10] may be employed if the necessary material is at hand.

Conclusion.—The physician must recognize and assume the responsibility of a positive diagnosis of syphilis before advising the recognized course of constitutional treatment. He may consider the features of a given case sufficient to make a diagnosis in the primary period, but the establishment of a diagnosis in this period is attended with considerable difficulty and inasmuch as the early use of mercury may modify the secondary symptoms to such an extent as to produce an hiatus in the patient's history, one certainly assumes a tremendous responsibility by this method. Although one can not absolutely depend upon the development of secondary symptoms in every case, it is undoubtedly a very rare occurrence for them to be overlooked by a physician who expects to see them appear. It would seem preferable, therefore, to accept this slight chance of ignoring a case rather than risk the possibility of condemning many, or even one innocent patient, to a life of mental misery and unnecessarily giving him several years of antisyphilitic treatment. A careful search for the *Spirochæta pallida* should be made in the primary and secondary lesions of every case, for if they are demonstrated one will add considerable strength to the diagnosis. The time is probably not far distant when a diagnosis of chancre can be based upon a diagnostic serum or by the microscopical examination of a smear preparation and the constitutional

treatment at once instituted. It is not beyond reasonable expectation to anticipate the development of an antitoxic serum, doing away with the time-honored mercury.

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AN EARLY CASE OF FORMAL OPERATION FOR THE SEPARATION OF JOINED TWINS (XIPHOPAGUS).

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SURGEON UNITED STATES ARMY, FORT D. A. RUSSELL, WYOMING, ON DETACHED SERVICE WITH THE ARMY OF CUBAN PACIFICATION AT SANTIAGO DE CUBA, CUBA.

The case here reported is of great interest for two reasons. First, the illustration is an unusually good one of an extensive keloid growth. Second, the extreme interest of the history the patient gives. This patient is now in the General Hospital at Santiago de Cuba, where I saw him while making an inspection of the institution. On questioning him as to the length of time during which he suffered from keloid and the origin of the growth, the following curious history was developed. The man is very intelligent, and gives the story with abundant details. Some of these details I have been able to verify by old residents of the city. Personally I am satisfied that the history as given is substantially correct. It is well worth a place in surgical history. Venerado Rivero; negro; age 66 years. In the spring of 1840 the African village in which his mother lived was captured by slave traders and those of the unfortunate negroes who were not slain were driven to the coast as slaves over one of those routes drenched with the blood and tears of the myriad victims of this hideous traffic. He has never heard or known the name or exact location of this village further than that it was in the Congo River District. In the summer of the same year these people were herded aboard a slaver for export to America. He does not know the name of the ship, neither does he know her nationality.

While in midocean his mother fell in labor and suffered nine days without being delivered. On the eighth day of her trial the slaver (or "negrero," as he calls it) was pursued and captured by a Spanish corvette, *La Numancia*. On the following day the wretched woman's condition was discovered. The Naval surgeon on board *La Numancia* immediately performed a Cesarean section and removed a xiphopagus monster. Both were well formed males, and both were living. The mother died that same day. On the day of their birth the surgeon of the corvette separated the two children. Venerado is now living at the age of sixty-six years. His brother survived the operation three days. One of the slave women took charge of him and raised him. The party was landed in Cuba; worked for a time as contract laborers or peons, and then became free. This party is well known in Cuba as the first *emancipados*. Venerado's history was perfectly well known among them, and he has remembered all of the details as given him by his foster mother and others of the human cargo of the "negrero." They have even been able to preserve the name of the surgeon: José Brito y Boin.

The keloid began in the scar over the sternum, marking the location of the fusion with his mate. When he was eight years old, in 1848, it had grown to such proportions that an operation for its removal was made in Havana. The keloid reappeared in this location, but never grew to be very thick; but he remembers that at that time he had very small lesions at the locations of the present keloidal masses which have slowly increased with his years until they have developed into the condition as shown in the picture. He does not remember that he had any other injuries or scars at these points.

The large mass over the right temple and parietal region was removed a few years ago, but the tumor speedily grew again. The white patches under the jaw mark points of breaking down and ulceration which began about a year ago. The gross appearance at these points strongly suggests a malignant transformation of the keloid.

Certainly this case is at least as interesting as the famous and well-advertised Radica and Doodica operation, and the percentage of success was the same. Think of the different circumstances under which these operations were done! The one in a perfectly appointed amphitheatre, with the ready press to carry the news over the world. The other on the deck or in the hold of a pestilential slave ship. Remember, too, please, that in this earlier case there was no anesthesia, no asepsis or antisepsis, and that it was sixty-six years ago! I make my homage to the shade of José Brito y Boin. He was evidently a good deal of a surgeon, as well as a good deal of a man.

MEDICAL RECORD.

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THE CURABILITY OF PARANOIA.

PARANOIA has long stood as a bête noir of psychiatry. Krafft-Ebing in his fourth edition (1890) gave out as a dictum that he had never seen a patient suffering from paranoia recover. His definition, however, almost precluded the possibility of any other standpoint, and as his writings obtained a wide vogue we find the same standpoint reflected among many English and American writers, most of whom have slavishly followed Krafft-Ebing. Within the past fifteen years, however, it has been becoming evident that paranoia, in the sense in which Krafft-Ebing used the word, is not one disease, but a number, and newer investigations have thrown into high relief the fact that one is compelled to adopt Wernicke's comprehensive even if less definite term of the paranoid states, if one is to avoid the discomfort of finding one's incurable paranoiacs turn out to be curable something else. This has happened to almost all practising alienists, especially those imbued with Krafft-Ebing's ideas, although asylum physicians, who are less liable to have acute and mild paranoid conditions come before them, are less often called upon to revise their opinions.

Modern French authors—notably Anglade, in Ballet's Traité de Pathologie mentale—have attempted a comparative study of the terms used to define the paranoid states with a marked degree of satisfaction. The most marked group of these states constitutes the systematized delusional or primary paranoias, under which heading one finds the acute simple and hallucinatory forms, as well as the chronic systematized delusional ones. In the former, the prognosis, if we follow Mendel, may be cure, cure with remissions, episodic and recurrent attacks, and chronic forms. It is not certain that the recurrent cases are not referable to Kraepelin's manic depressive group, although Ziehen and his followers maintain the occurrence of a periodic paranoia with a good prognosis. As for the chronic systematized forms, the prognosis is bad. It should not be overlooked, however, that Bartels, Freyberg, Ilberg, and a number of other observers have described recoveries with fair or complete insight even in this group, and that both Wernicke and Kraepelin admit the curability of this form at times.

The old delusional manias and melancholias of our American asylums are grouped by Anglade with the secondary paranoias. These are of frequent occurrence in other psychoses following infectious diseases, and are particularly frequent in many intoxications, notably alcoholic. In this latter form delusions of jealousy, as well as persecutory delusions, are extremely common. Delusions of persecution in morphinists and cocainists are not unknown. The great group of the paranoid dements is to be classed here. The prognosis in this group is in general good, depending on the nature of the primary affection. Even the paranoid dements sometimes gain insight.

A third group of Anglade's is perhaps the most interesting from the medicolegal point of view. Here are the many half fools, half geniuses of the world—the long-haired reformers, the unsuccessful but never-daunted inventors, the erotics, and perhaps many of the perverts. Those suffering from phobias, obsessions, fixed ideas, etc., all meet in this common ground of defectives of a mild grade. Those in whom the stamp of persecutory delusions comes out with any degree of force are the subjects of the rudimentary or abortive paranoias of Morselli, Westphal, and others, or of the isolated monomanias, a term which has done so much to cloud the real nature of the defects of judgment in these individuals. In many of these the prognosis is good, especially if neurasthenic overtaxation is responsible for the efflorescence of the psychotic state.

Thus it may be seen from this short review that "die paranoische Frage," as our German friends call it, is not by any means a simple matter. With Wernicke at one side laying much emphasis on the different paranoid states, and Kraepelin on the other storing away the same patients in one or other pigeon holes of his category, until few real "paranoias" in his restricted sense remain, one has ample ground for much disputation.

THE COURSE OF LYMPHATIC INFECTIONS.

SOME years ago Weleminsky reported a series of experiments he had made on guinea-pigs in order to determine the lymphatic channels traversed by infectious agents entering the body through different portals. For this purpose he infected about 1,000 animals in different parts of the body with tubercle bacilli and then killed them at definite intervals. The result was that no matter what the site of the original infection had been, whether subcutaneous, under the chin, at the angle of the jaw, in the axilla, or in the groin, intraperitoneally, or even directly in the intestine by enema, in every case first the local lymph glands, then those lying along the route to the bronchial glands, and finally the bronchial glands themselves were invaded by the infectious process. Not until the bronchial glands had become involved did the blood stream become contaminated, that is to say, the lungs were always attacked after the bronchial glands. Weleminsky, therefore, regarded the bronchial glands as a center for the entire lymphatic system, a lymph heart, so to speak, toward which infectious streams from the periphery converge and from which infections of the blood take place.

These conclusions have recently been assailed by Beitzke on the ground that the bronchial glands might also be infected from above through inhalation or through the animal's swallowing tubercle bacilli set free through the rupture of the abscesses

formed in consequence of the subcutaneous inoculation. He also asserts that the possibility that tubercle bacilli may gain access to the bronchial glands from the blood stream has not been sufficiently considered by Weleminsky. The latter author in the *Berliner klinische Wochenschrift*, March 11, 1907, publishes a rebuttal of these criticisms, and offers further evidence confirmatory of his original standpoint. To discuss his statements in detail would require too much space, but, while there is undoubtedly much to be said on both sides, there appears to be good reason to believe that in future the bronchial glands must be accorded even greater importance in the mechanism of pulmonary infection than has hitherto been the case.

EXPERIMENTAL ARTERIOSCLEROSIS.

Hand in hand with the increasing realization of the importance clinically of the changes in blood pressure and other accompaniments of arteriosclerosis, have gone the attempts to obtain a deeper insight into the nature of the lesions of the vessel walls by endeavoring to counterfeit them experimentally. A considerable literature on the subject has already accumulated, and it seems settled that at least two substances, nicotine and adrenalin, when injected into the vessels of rabbits during considerable periods of time, in a large proportion of the cases occasion changes in the aorta which simulate the lesions of human arteriosclerosis more or less closely. Sceptics are not lacking, however, and not very long ago so good a judge of such matters as Kaiserling expressed the view that the experimenters in this field had not yet proved their point, and that an attitude of reserve in regard to their results was still advisable. He called attention especially to the fact that sufficient consideration had not been given to the condition of the blood vessels in untreated rabbits, and suggested that some one should investigate this matter in, say, a thousand animals, in order that satisfactory control statistics might be made available.

While such an attitude is perhaps unduly conservative, it is certain that some of the earlier communications on the subject were published before the results had been checked up with the necessary care. For example, Koranyi, who was one of the first to report that the adrenalin lesions could be diminished or prevented by the simultaneous injection of iodides, has recently (*Deutsche medizinische Wochenschrift*, January 31, 1907) admitted that he was mistaken in his conclusions. The iodine preparation he used has an oily base, and control experiments made by injecting oil of sesame without iodine showed that it was the oil and not the iodine that had been the effective agent. Biland even believes that the simultaneous injection of potassium iodide together with the adrenalin intensifies the damage wrought by the latter, so that the attractive supposition that an explanation had been offered of the manner in which potassium iodide exerts its beneficent action in certain cases of vascular disorder appears untenable.

Lately, Loeb and Fleischer (*Deutsche medizinische Wochenschrift*, March 7, 1907) have reported on an extensive series of experiments undertaken in order to investigate this question. They express the opinion that it is not possible by means of injections of iodine preparations to prevent the development of the adrenalin lesions in the rabbit's aorta, and state that they were not able to observe any beneficial results from the procedure. On the contrary, when large amounts of the iodides were used the effect appeared to be distinctly injurious, and the adrenalin lesions were increased in intensity instead of being diminished. Injections of small or of relatively large amounts of potassium sulphocyanate did not intensify the action of the adrenalin, and there seems a possibility that this substance may tend to prevent it. The authors consider, however, that their experiments are not conclusive as yet, and that further observations on larger series of animals are necessary before a definite statement is justifiable.

THE DIAGNOSIS OF BONE TUMORS BY AN EXAMINATION OF THE BLOOD.

Attention has been called during recent years to the peculiar picture presented by the blood in the presence of malignant metastatic deposits in the marrow of the long bones. This closely resembles a severe pernicious anemia and myelocytes are present in large numbers. The condition is believed to be due to the encroachment upon the normal boundaries of the cavity by the growth. It has been claimed that this particular blood picture, which can be definitely distinguished from an essential pernicious anemia as well as from the various leukemias, may serve as a means of diagnosis even when the original neoplasm cannot be located with certainty. The validity of this claim is apparently demonstrated in three cases reported by Schleip in the *Zeitschrift für klinische Medizin*, Vol. 59, Nos. 2 and 3, in all of which the blood changes referred to were present and at autopsy a more or less extensive infiltration of a malignant character was found to be distributed throughout the marrow of certain of the long bones.

These cases are of considerable interest from the diagnostic standpoint. In the first there was present a primary carcinoma of the stomach which gave rise to practically no symptoms, but to a number of metastatic bone deposits. The only symptom referable to the latter was a transitory pain over the tibiæ. An examination of the blood showed nucleated red cells, numerous myelocytes, and certain abnormal cell forms which were found post mortem to be identical with the cells of the metastases in the bones. In the second case the patient was the subject of a profound anemia and presented the general characteristics of Hodgkin's disease, and the suspicion of a malignant neoplasm partially confirmed by the blood picture was fully demonstrated later by the finding of a primary carcinoma of the vermiform appendix with numerous metastatic growths in the bones. In the third case the writer found certain cells which were more than half as numerous as the leucocytes. The increase in these cells was accompanied by an absolute as well as a relative decrease in the number of normal lymphocytes. These abnormal cells were at first regarded as bone-marrow cells, as initial stages of

the myelocytes, but a more careful examination showed that they were entirely different in character, and the autopsy disclosed a diffuse sarcomatous infiltration of the marrow of most of the bones together with an involvement of the lymphatic glands.

These findings are of particular interest, as a knowledge of the fact that the blood picture may afford some clue to the correct diagnosis in obscure instances of malignant disease may aid in confirming a suspicion as to the true nature of the case which could not otherwise be supported.

The Benzidin Test.

The value of Adler's benzidin test for blood has already been attested by numerous observers. Indeed, the most serious drawback that has been alleged against it is that of being too delicate, and Schumm has even expressed the opinion that owing to this excessive sensitiveness it is not suitable for ordinary use in testing feces. Schlesinger and Holst (*Münchener medizinische Wochenschrift*, March 5, 1907), however, describe a method by means of which they consider that all the advantages of the reagent are retained, and it is made available for routine use. The patient should refrain from meat for three, or better four, days and from the mixed stool of a single evacuation a portion the size of a pea is shaken up with a small quantity of water in a test tube, and the mixture boiled for a few minutes. A few drops of this fluid are added to the reagent in another test tube, and, if blood is present, a green or blue color, depending on the amount of blood, will appear. The reagent consists of a freshly prepared, saturated alcoholic solution of benzidin acidulated with glacial acetic acid. To one-half c.c. of this two to three c.c. of 3 per cent. peroxide of hydrogen solution is added. That the test performed in this way is not misleadingly delicate is shown by the fact that in a series of one hundred and fifty stools from patients supposed to have gastrointestinal ulceration or carcinoma, negative results were obtained in about one-third of the tests. The authors also recommend it highly for the purpose of detecting minimal amounts of blood in urine, and suggest the following mode of procedure. To ten c.c. of urine in a test tube one-half to one c.c. of acetic acid is added, and, after shaking, one-third of the volume of sulphuric ether is added. The whole is well shaken, and the ether extract is caused to separate completely by dropping in five or ten drops of absolute alcohol. This clear ether extract is then tested with the benzidin reagent in the manner indicated above. It was found that, performed in this way, the benzidin test was twenty times as delicate as Heller's test, and five times as delicate as the guaiac and aloin tests.

The Diagnosis of Helminthiasis.

It is often a very difficult matter to diagnose the presence of intestinal worms because they frequently lead to symptoms which are not likely to be attributed to this cause. An examination of the stools is not always reliable, for the organisms may be extruded at irregular intervals, and even frequent attempts may lead to negative results. In the belief that intestinal worms, similar to other parasitic organisms, excrete a toxin which circulates through the body of the host, it is suggested by Jefimow (*Klinisch-therapeutische Wochenschrift*, 1907, No. 2) that the diagnosis in suspected cases be aided by an examination of the urine. The test for the presence of a toxin is made by boiling a small quantity of the latter and then adding a few drops of fluid nitrate of mercury. If there are no intestinal parasites present the urine, it is claimed, becomes milky and a white precipitate is finally thrown down, otherwise it turns a gray or black color. From a large number of observations it has been found that the latter reaction is always constant when intestinal parasites are present, although there are several sources of error which must be guarded against. For two days previous to the test the patient must not be given any medicine, as there are a number of drugs which give rise to a similar urine reaction. This is particularly true of sodium bicarbonate as well as all other alkalies, of substances containing lead and sulphur, and of certain salts of iron. The salicylates, morphine, carbolic acid, zinc and copper salts, quinine, and antipyrin fail to give rise to either a gray or a black discoloration. The presence of albumin, sugar, or indican in no wise influences the test, although pus may. A positive result does not give any clue as to the variety of parasite present, although it is claimed that the reaction is much less marked with round than with flat worms. It is also stated that a microscopical examination will afford more detailed information as to the specific infection present. If a few drops of the suspected urine are evaporated on a glass slide, the finding of numerous small granular crystals is claimed by Jefimow to point to the presence of tapeworms, while a similar deposit of cruciform crystals denotes infection with the nematodes.

Pseudostenosis of the Mitral Valve.

The differentiation of the physical signs associated with organic heart disease and those of purely functional disturbances, constitutes one of the most difficult problems in cardiac pathology. A well marked presystolic murmur is often found in young individuals, and this in the presence of dyspnea on exertion and cardiac palpitation is accepted as evidence of mitral stenosis. Later examination may fail, however, to confirm this fact and the apparently well marked murmur is no longer present. In such cases we usually find symptoms of chlorosis present and the functional disturbances of the heart are of little clinical importance, their practical interest merely residing in the possibility of confusion with those produced by organic cardiac lesions. Two factors are associated in the production of these functional murmurs—the condition of the blood and the slowing of the blood stream, particularly during the presystolic phase. There may also be present some change in the manner of the auricular contractions under the influence of the increased irritability of the cardiovascular apparatus. The differential diagnosis between true mitral stenosis and the functional pseudomitral stenosis must be based entirely on the palpatory and auscultatory signs. Bard, writing in *La Semaine Médicale*, No. 30, 1906, divides the physical phenomena of mitral stenosis into two categories—those due to the passage of the blood through a narrowed ostium and those dependent upon a rigidity of the valves. The tremor on palpation and the sounds heard on auscultation may be included in the former, but neither is sufficiently characteristic of either type to permit it to be used as a basis for a differential diagnosis. A phenomenon of the second type is the short, sharp

vibration which closely follows the tremor already referred to. This sign is considered by Bard to be quite characteristic of organic mitral stenosis and is absent in the false form. In a case of pseudostenosis it is not possible moreover to determine by palpation whether this fremitus is systolic or presystolic, and it is only by auscultation that we become aware of the presystolic character of the sound, which is also much softer and weaker than the fremitus evident to the hand.

The Action of Saline Infusions in Bacterial Toxemia.

The good results attained in the treatment of toxemias of bacterial origin by the infusion of physiological salt solution has been ascribed to the excretion of the diluted toxins following an increase in heart action and blood pressure and the resultant diuresis. In other words, the process may be described as a lavage of the blood. This view of the question is contradicted, however, by Berend and Deutsch (*Centralblatt für die Grenzgebiete der Medizin und Chirurgie*, Vol. IX., No. 19), who have made a series of experiments on animals poisoned by bacterial toxins of various kinds and found that the "lavage" either with or without venesection is practically without effect, as a rapid union between the cells and the toxins always takes place which it is impossible to break up by the method mentioned. The favorable effects of saline infusions which have been a matter of clinical record must therefore be ascribed to a stimulation of the cardiac function and the increased blood pressure rather than to a diluent action, according to the observations of these writers. An exception is granted, however, in uremic conditions where the affinity between the cells and the toxins is less marked, and here the infusion combined with venesection is more truly a washing out of the system through the blood channels.

The Present Status of Ethyl Chloride as an Anesthetic.

An interesting discussion on the value of ethyl chloride was recently held before the Society of Anesthetists—as reported in the *Lancet* for March 16. Dr. Mennell stated his reasons for having practically discontinued the use of this anesthetic, his action being based upon a number of cases at St. Thomas' Hospital. He showed that ethyl chloride increased the coagulability of the blood, and that in consequence of this pulmonary embolism occurred after the use of the ethyl chloride-ether sequence more frequently than when ether was preceded by nitrous oxide. In the discussion that followed exception was taken to the alleged danger of embolism. Dr. Llewellyn Powell had seen instances of undoubted embolism, but not as yet in connection with the use of ethyl chloride. Dr. J. F. W. Silk was accustomed to employ ethyl chloride in large doses with free air dilution, the object being merely to obtain a degree of insensibility sufficient to allow for the introduction of such an anesthetic as the A. C. E. mixture. Other speakers testified to the value of ethyl chloride before ether in muscular and in alcoholic individuals. Some were unable to corroborate Dr. Mennell's conclusions as to the detrimental after-effects from ethyl chloride, and they thought that very likely some of the ill-effects described were due to the ease with which ether was used to excess in immediate sequence to ethyl chloride.

The Tuberculous Opsonic Index.

Drs. Stewart and Ritchie described at a recent meeting of the Edinburgh Medicochirurgical Society a method by which they thought tuberculosis could be discovered in the very earliest stage (*British Medical Journal*, March 16). This method consisted in the injection of a minute dose of tuberculin R, and observations of the tuberculo-opsonic index of the blood before and after inoculation. The tuberculo-opsonic index alone might give very fallacious results, as in a large number of undoubted tuberculous cases it might lie within a normal limit. When 1/500 of a milligram of tuberculin R was injected into nontuberculous subjects the opsonic index rose, but when administered to tuberculous patients it fell. If this "negative phase" appeared after inoculation of any person, the diagnosis of tuberculous disease was, in their opinion, established. Their investigations were based on a total of sixty-two cases of tuberculous disease of various forms and on thirteen nontuberculous persons.

News of the Week.

The Evil Consequences of Bossism and Oppression in Medical Organizations.—Dr. Joseph D. Bryant, now president-elect of the American Medical Association, said, in his presidential address before the Medical Society of the State of New York: "If, on our part, a spirit of fraternal oppression of any kind should develop as the outcome of organized strength, then indeed will the day of consolidation become one of mourning for the loss in fraternal fellowship and in professional station, instead, as it ought, a day of rejoicing because of the great opportunity for general good, thus brought into existence." These truths should reach a wider audience than the comparatively few who were privileged to listen to Dr. Bryant's eloquent and thought-inspiring address.

American Anti-Tuberculosis League.—This society will hold its next meeting at Atlantic City, N. J., on June 1 to 4, 1907, under the presidency of Dr. George Brown of Atlanta, Ga. The headquarters of the League will be at the Hotel Holmhurst. The chairman of the Reception Committee is Dr. Edward Guion of Atlantic City, to whom communications from those desiring further information may be addressed. The League, as announced in the notice of meeting, has been organized for the prevention of consumption: to educate the people that this is a preventable disease; to secure State aid for poor consumptives: to establish hospitals in every State in the Union. Its membership is not limited to physicians, but is open to all men of whatever calling to whom these objects appeal.

The State's Ice Supply.—Commissioner Porter of the State Board of Health, in a communication incorporated in the March issue of the bulletin of the department, states that a bill will be introduced in the Legislature designed to give the department effective powers of supervision over the business of harvesting and distributing natural ice. The Commissioner says that the department now has no authority and no funds for this purpose. The general subject of infection through ice is also discussed, and attention is called to the fact that the danger from ice that has been kept in storage for any length of time is comparatively remote. It has been found in general that bacteria are reduced in number about 50 per cent. after exposure to freezing temperatures

for a period of one hour, 90 per cent. after twenty-four hours, and practically 100 per cent. after exposure from two to three weeks. The few that are not killed after exposure for, say one month, have become so attenuated as to be unable to produce disease. On the other hand, however, Dr. Porter speaks of the real dangers of infection due to handling and distributing, to surface pollution due to the pernicious practice of flooding ice to get a thicker crop, to rains and melting snow washing pollution from side slopes on to ice already formed, and finally to the dangers of artificial ice when this has been manufactured from contaminated water and delivered to consumers before the natural process of purification has had an opportunity to become effective.

Antivivisection in This State.—A bill has been introduced in the Assembly at Albany providing for the restriction of research by means of experiments on living animals. The bill does not seek to abolish vivisection altogether, but is designed to confine experimentation of this sort to certain qualified persons. The bill provides that experiments on living animals shall be attempted only under the authority of the faculty of a college or university incorporated under New York laws or under the authority of the State Commissioner of Health, or a City Board of Health. The place where the experiment is conducted must be registered with the State Health Commissioner, who shall license the holder to pursue animal experimentation. Before and during the experiment the animal must be completely under an anesthetic. If pain is likely when the effect of the anesthetic has ceased, the animal must be killed immediately. It is further provided that the experiment must be for the advancement of knowledge useful for saving or prolonging life or alleviating suffering.

Eye-glasses for School Children.—The Board of Education is considering the advisability of providing spectacles for those of the pupils in the city's public schools who require them. According to a report made by the Committee on Elementary Schools, about 36,000 children in the schools, or about 6 per cent. of the total number, are suffering from visual defects that demand correction if the scholars are to profit to the full by the opportunities for study given them. The committee submitted four resolutions intended to cope with the problem. The first of these suggested that the Board of Estimate be requested to appropriate $30,000 for the purpose of fitting up centers for the examination of children whose sight is defective and to provide eye-glasses made to prescription. The second resolution provided that the Department of Health be requested to furnish thirty expert oculists to examine the eyes of all the pupils of the public schools who are referred to them by the medical examiners in the schools. The third authorized the Committee on Elementary Schools to invite five prominent oculists to advise the committee as to the equipment of the examination centers. The fourth authorized the Committee on Supplies to secure bids for the equipment of the examination centers and for the supply of eye-glasses, in the event of the Board of Estimate granting the appropriation asked. It is estimated that all the spectacles necessary could be purchased for about $6,000.

Spectacle Swindler.—A large number of mothers in Queens and Nassau counties have been swindled out of from $2 to $5 by a young man who impersonated a Board of Health inspector and stated that he had been sent to examine the children's eyes. He prescribed glasses, and said that these must be provided before the child could be allowed to continue at school. He then offered spectacles which he said would correct the fault, and is said to have effected a large number of sales.

Shellfish from Polluted Waters.—A report has been made by Dr. B. R. Richards of the bacteriological laboratory of the Boston Health Department showing that most of the shellfish taken from New England waters, at least, is likely to be contaminated with sewage organisms. Clams collected along the coast from Digby, N. S., to the shoulder of Cape Cod, were tested for sewage organisms, and only those dug at Yarmouth, Mass., were found to be free from infection. Oysters, most of them brought from Cape Cod, made a better showing, and in most of the samples the evidence of contamination was insignificant. Maine lobsters were found in a satisfactory state, except those that had come by land and had been packed and handled carelessly. It is stated in the report that it is a question whether shellfish taken from sewage polluted waters are safe articles of food, even if all infectious organisms have been killed by cooking.

Lectures on Public Health Topics.—The Fordham University Medical School announces a series of lectures on Tuesday afternoons in April at 4 P.M. on "Public Health Problems and Hygiene" under the auspices of the New York City Department of Health. These lectures are to be illustrated by lantern slides showing conditions and their amelioration in New York. Members of the medical profession are invited to attend. The first lecture will be given on April 9 by Dr. Thomas Darlington, Commissioner of Health of New York City, on "The City's Health." Dr. John S. Billings, Jr., Chief of the Division of Communicable Diseases, will lecture on April 16 on "The City and Tuberculosis," and on April 23 on "The City and Typhoid Fever and Other Communicable Diseases." Dr. John J. Cronin of the New York Department of Health will lecture on April 30 on "The City and School Health."

Anti-Cocaine Bill Passed.—The Assembly at Albany on March 28 unanimously passed the Smith bill, intended to restrict the use of cocaine. The bill, which was opposed by the patent medicine interests, provides that cocaine shall not be sold except on a physician's prescription, to be filled but once. Another bill has been introduced by Assemblyman Smith, which prohibits the sale and manufacture of cigarettes in this State.

New Medical Organization.—A meeting of about fifty physicians interested in insurance examinations was held in Boston last week to discuss the organization of a society composed of workers in this field. Addresses were made by Drs. E. M. Green, Charles D. Cutting, and Francis Donoghue. A committee was appointed to draft a constitution and by-laws and to nominate officers.

Tuberculous Cows in New Jersey.—It is the opinion of some of those conversant with the conditions, that in the neighborhood of 40 per cent. of the milch cows in the State of New Jersey are tuberculous. In order to encourage farmers to have their stock inspected, the State Commission on Tuberculosis in Animals is paying full value for animals killed. Recently twenty cows out of a herd of forty were found tuberculous and were condemned, the owner receiving full compensation.

Civil Service Examinations.—The State Civil Service Commission will hold examinations April 27, 1907, for the following medical posi-

tions among others. Health Officer, Town of Scio, Allegany County; Medical Superintendent, State Hospital for Tuberculosis. The last day for filing applications for these positions is April 20. Full information and application forms may be obtained by addressing the Chief Examiner of the Commission at Albany.

Society of Sanitary and Moral Prophylaxis.—A regular meeting of this Society will be held at the Academy of Medicine, Thursday, April 11, at 8:30 P.M. The following papers will be read: (1) "How and to What Effective Extent Can the Health Authorities Aid in the Prophylaxis of Venereal Diseases," by M. L. Coplin of Philadelphia; (2) "Professional Secrecy and the Obligatory Notification of Venereal Diseases," by Wm. A. Punington; (3) "The Medical Secret and the Safeguarding of Marriage from Venereal Infection," by Edward L. Keyes and Egbert H. Grandin.

For a New State Hospital.—As the State's lease of Ward's Island expires in five years, the State Lunacy Commission is making arrangements for the disposal of the 4,000 odd insane patients now quartered there. It is the plan of the commission to have the State purchase a site of large size suitable for the construction of a hospital of the colony type. It is desired to find such a site within easy access of the city, both by rail and by water. The commission has drafted a bill for passage by the Legislature at the present session to provide for a small appropriation for the expense of finding a suitable site.

Commission on Problems of Nutrition.—Under the auspices of the University of Illinois, a commission was organized at a conference held in this city last week for the purpose of conducting experiments on the effect on the consumer of the preservatives in common use in food stuffs, especially meats. The work will be done under the direction of Prof. H. S. Grindley of the department of physiological chemistry of the university, and with him on the commission are R. H. Chittenden, Professor of Physiological Chemistry of Yale; J. J. Abel, Professor of Pharmacology of Johns Hopkins University, and A. P. Mathews, Professor of Physiological Chemistry of the University of Chicago. The expense of the investigations is to be borne in part by the university and in part by some of the beef packing houses of Chicago.

Chicago Ambulance Surgeons.—Under the supervision of the Chicago Health Department, 915 calls were responded to during the first four weeks of the service by the ambulance surgeons; 577 ill and injured were removed to hospitals, 296 individuals received first aid, and of this number 99 were taken to their homes; 67 patients with contagious diseases were removed to the county and other hospitals; 40 miscellaneous cases, including 5 insane and destitute persons, were cared for, and 915 individual reports were received and filed by the Medical Inspector. Thus far the ambulance service has given excellent satisfaction.

Scarlet Fever in Chicago.—In reply to circulars of inquiry sent to physicians reporting terminated cases of scarlet fever, answers were received from nearly three hundred, reporting four hundred and ninety-nine cases, of which seventy-one were denominated atypical scarlet fever. There were also reported at the County Hospital during January thirty-seven cases of scarlet fever terminated, in February seventy-one, and in March ninety-three, making a total of seven hundred cases reported in full in answer to the circular inquiry. The ages of the patients varied from four months to fifty-seven years. The forty-four deaths occurred at the ages of one year to forty years. Four hundred and twenty-five of the cases were mild. Of the atypical cases, most of them were so described on account of the mildness of the symptoms; others because they lacked one or more of the classical symptoms. In very few cases, not over twenty reported by physicians, no peeling was observed. The County Hospital records mention that symptom in a few instances only. Four had had scarlet fever before. As to the complications, albuminuria, adenitis, otitis, and arthritis were most prominent in the order named. Eighteen cases had diphtheria at the same time, six had measles, fourteen varicella, and two pertussis. Seven had pneumonia, four endocarditis, one pericarditis, and three purulent conjunctivitis.

Automobile Rides for Hospital Patients.—Largely through the efforts of Magistrate Crane and Mr. W. E. D. Stokes, several automobile dealers and owners have made arrangements with various hospitals to send their cars once a week to take convalescent patients for an airing.

Red Cross Congress.—Miss Mabel T. Boardman and Surgeon-General O'Reilley of the Army have been designated as delegates to the International Red Cross Congress, to open in London on June 10. Four other delegates remain to be appointed by the State Department.

A New Journal.—Under the title of *The Proctologist*, the first number of a new journal to be devoted to the surgery of the rectum appears in St. Louis. It is a quarterly, and is edited and published by Dr. Rollin H. Barnes.

Rebellious Farmers.—At a meeting of about 300 farmers of Rhode Island and Massachusetts held in Swansea last week, it was decided to protest against the proposed application of the tuberculin test to the herds in the neighborhood of Fall River. This action was the result of the announcement of the Fall River Health Board, acting on a suggestion of the State Board of Health, that it would be desirable to have the dairy herds of that section properly inspected.

Infectious Disease Among Dogs.—In Chester, Pa., a large number of dogs have been discovered suffering from an infectious disease alleged to be diphtheria. To prevent its spread, all the animals attacked are being killed, and notices have been sent to all owners of dogs to report any evidences of sickness in their live stock.

A Royal Consumptive.—According to the cable despatches, King Alfonso of Spain is suffering from tuberculosis and the Spanish court is very uneasy regarding his condition.

Meningitis at Harvard.—The death of a member of the sophomore class at Harvard is reported after an illness of four days from cerebrospinal meningitis.

Williamsburg Hospital.—At the annual competitive examination for internes in the Williamsburg Hospital held last week, the first place was won by Miss Mary Crawford, a student in the Cornell University Medical School. She will be the first woman to hold such a position in a Brooklyn hospital.

Montana State Board of Health.—The new Montana State Board of Health, created under an act of the Legislature replacing the old board, at its organization meeting in Helena on March 15 elected

as *President* Dr. William J. Treacy of Helena, and *Secretary* Dr. E. D. Tuttle of Billings.

Greenwich (Conn.) Medical Society.—At the annual meeting of this organization officers were elected as follows: *President*, Dr. L. P. Jones; *Vice-President*, Dr. Frank Terry Brooks; *Secretary and Treasurer*, Dr. J. A. Clarke.

Northwest Arkansas Medical Association.—At the meeting of this society held in Ft. Smith on March 20 the following were elected as officers: *President*, Dr. W. N. Yates of Fayetteville; *Vice-President*, Dr. J. J. Smith of Van Buren; *Secretary*, Dr. J. A. Foltz of Ft. Smith; *Treasurer*, Dr. O. M. Bourland of Van Buren. Fayetteville was selected for the next annual meeting.

Western Massachusetts Homeopathic Medical Society.—The following were elected as officers at the annual meeting of this organization held in Springfield on March 20: *President*, Dr. H. C. Cheney of Palmer; *First Vice-President*, Dr. E. W. Capen of Munson; *Second Vice-President*, Dr. S. A. Lewis; *Secretary and Treasurer*, Dr. James B. Comins.

Memphis and Shelby County (Tenn.) Medical Society.—At the annual meeting of this society held in Memphis, officers were elected as follows: *President*, Dr. Alexander Erskine of Memphis; *Vice-President*, Dr. George Livermore; *Secretary*, Dr. J. W. Price, reelected.

Florida Medical Association.—The thirty-fourth annual meeting of this society will be held at Tampa, April 17, 18, and 19, 1907, under the presidency of Dr. John McDiarmid of Deland. The Secretary is Dr. J. D. Fernandez of Jacksonville.

Augusta Medical College.—In order to celebrate the seventy-fifth anniversary of this institution, arrangements are being made for a reunion of as many of its alumni as possible at the approaching commencement.

Bequests to Hospitals.—By the will of the late Dr. J. E. Lothrop of Dover, N. H., the following bequests are made, payable on the death of the testator's wife: To the Dover Children's Home, the Dover public library, and the Wentworth Hospital, $1,000 each, and to the Wentworth Home for the Aged, $500.

Dr. Reginald M. Rowls has been appointed Assistant Surgeon to the Woman's Hospital in this city.

Bequests to Hebrew Institutions.—By the will of the late Adolphus Price the sum of $500 is left to each of the following institutions: The Hebrew Benevolent and Orphan Asylum Society, the Montefiore Home for Chronic Invalids, the Hebrew Technical Institute, the Home for Aged and Infirm Hebrews, the Hebrew Sheltering Guardian Society, the United Hebrew Charities Association, the Mount Sinai Hospital, and the Children's Aid Society.

Notable Deaths.—From Holyoke, Mass., is reported the death of the oldest woman in the city, from mumps at the age of ninety-five years. A resident of Mechanicsville, Conn., said to be the heaviest man in New England, died last week at the age of forty-three years. He weighed 450 pounds, and until six months ago worked as a weaver. He died suddenly while in a Turkish bath.

Obituary Notes.—Dr. Otto Albert Weigand of Jersey City died on March 24 of tuberculosis at the age of thirty-eight years. He was graduated from Columbia University fourteen years ago.

Dr. Pemberton Dudley of Philadelphia died on March 25, at the age of seventy years, as the result of injuries received some months ago in a trolley car accident. He had been for many years dean of the Hahnemann Medical College.

Dr. George Warren Bartow of Three Bridges, N. J., died on March 28, at the age of sixty-three years. He was a member of Company A, Fifteenth Regiment, New Jersey Volunteers, and was wounded at the battle of Petersburg. At the close of the war he studied medicine, and received his degree from the College of Physicians and Surgeons in this city. He had practised in Three Bridges for thirty-four years.

Dr. Charles E. McAdams of Wichita, Kan., died suddenly of heart disease in Kansas City on March 19. He was one of the first settlers in Wichita, and had been a prominent figure in the development of the city.

Dr. E. W. Slayton of Northfield, Vt., died of cerebral hemorrhage on March 20, at the age of sixty-four years. He was born in Calais, and received his early education in Hardwick and Montpelier, receiving his medical degree from the University of Vermont. He began to practise in Albany in 1866, but two years later removed to Warren, where he spent the greater part of his life. He had occupied many official positions, and in 1898 was elected to the State Senate.

Dr. Charles R. Brown of Lynn, Mass., died suddenly of heart failure on March 21, at the age of seventy-one years. He was born in Gorham, Me., but had resided in Lynn for about thirty-five years. He was a graduate of Bowdoin College and of the Hahnemann Medical School of Philadelphia.

Dr. A. J. Willard, a former superintendent and resident physician of the Mary Fletcher Hospital, Burlington, Vt., and founder of the Mary Fletcher Hospital Training School for Nurses, is dead in his home in Swanton.

Dr. J. W. McConnell of Cornelia, Ga., died on March 20 of pneumonia, at the age of forty-four years.

Dr. Robert C. Arnett of Monticello, S. C., died on March 18 of nephritis. He was a member of the Sixth South Carolina Infantry, and was a well-known practitioner of Fairfield County.

Dr. Clement Overton Fountaine of Crystal Hill, Va., died on March 16 of heart disease at Gladys, Campbell County. He was graduated from the Medical College of Virginia in 1900. Both his father and grandfather had been well-known physicians of Buckingham County.

Dr. Albert Fox of Waterbury, Conn., died on March 20, at the age of eighty-one years. He was born in East Hartford, Conn., and had practised in Pawling, N. Y., and in Danbury, Conn. In 1900 he removed to Waterbury, where he had since resided.

Dr. Frances Van Cleve Fuller of Brooklyn died on March 27, at the age of fifty-seven years. She was born in Newark, and was graduated from the Woman's Medical College of New York in 1884. She was one of the first women to be admitted to membership in the Kings County Medical Society, and had practised in Brooklyn for over twenty years. Dr. Fuller was the treasurer of the Woman's Auxiliary of the State Militia forces in Brooklyn during the Spanish war.

Dr. Robert Farries of this city died on March 31, at the age of forty-two years. He was born in Dumfries, Scotland, but came to this country while a young man, and studied medicine at the University of Michigan and at the Long Island Medical Col-

lege, being graduated from the latter institution with the class of 1865.

Dr. LAWRENCE F. PERRY, one of the resident physicians in the Philadelphia Hospital, died of septicemia in that institution on March 28, at the age of twenty-five years. He was born in Ripon, W. Va., and was graduated from Jefferson Medical College in the class of 1905. He had served for fourteen of the eighteen months of his term.

Dr. SAMUEL CLARKE died at Philadelphia on March 28. He was graduated from Jefferson Medical College in the class of 1869.

Dr. SAMUEL D. BICKEL died at Atlantic City, N. J., on March 27. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1895.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

KALA-AZAR—CEREBELLAR TUMORS—MEMBRANOUS DYSMENORRHEA—URINE FIBROMATA—HOSPITALS—CEREBROSPINAL FEVER; THE ORGANISM—OBITUARY.

LONDON, March 15, 1907.

PROFESSOR LEONARD ROGERS devoted his third Milroy lecture to the life history of the kala-azar parasite, the mode of infection and prophylaxis. As a rule the infection is largely a house one, and on this fact he based prophylactic measures which were very successful even before the discovery of the parasite. The organism was found independently by more than one observer and the difficulties of differentiating it explains why the disease was long confounded with other chronic fevers of malarial kind. The discovery of the new parasite, the lecturer said, has done more toward clearing up Indian fevers than anything since Laveran's description of the parasites of malaria. The organism can now be found in practically every part of the body, but is more numerous in the spleen, bone-marrow, and liver. When Dr. Rogers discovered the flagellate form suggestions as to its extracorporeal stages were forthcoming. It was thought at first to be very rare in the peripheral blood, but Donovan, Christophers, and James found it in leucocytes. Others reported the parasites in the red corpuscles, but this has been questioned, it being considered that they were only on the surfaces of the red disks. It is at any rate now clear that they are present in the circulating blood in large numbers, in most advanced cases, and could enter the stomach of any bloodsucking insect which might serve as the host for future development, and this the lecturer's work has traced. The organism differs from all flagellates previously known. The cultivation must be carried on with strict attention to temperature limitations, sterility, anaërobic conditions. On considering various facts in connection with his experiments Dr. Rogers suspected that the bedbug was the carrier of the infection. In investigating these in plague patients he had previously found the contents of the stomach sterile—an unexpected result. He then tested the reaction of the fluid after sucking human blood and found it distinctly acid, showing the secretion of the organ could neutralize the alkalinity of the blood. This led him to try the effect of neutralizing or faintly acidifying his medium with a drop or two of a sterile citric acid solution, when he was rewarded with an abundant and complete development of active flagellated forms. The significance of this is obvious. The next step was to feed the bugs with infected human blood, and in this Dr. Rogers was met with fresh difficulty, the insects refusing the food in this form. He then mixed human blood from the spleen with fluid from the stomachs of the insects and succeeded in developing at suitable temperature fully flagellated forms. It then only remained to find these forms in the insects after feeding on kala-azar patients. This begun, he had to discontinue on account of his eyes, but his work was followed up by his official successor, Dr. Patton, I.M.S., who soon after wrote to him: "I have got the complete cycle of the parasite up to completely developed flagellates; there is no shadow of doubt that the bedbug transmits the disease." Something yet remains to be done to ascertain in what form the parasite is again inoculated into the human body, for the long time during which infection clings to houses suggests it may be transmitted through the progeny of the first-affected insects as in the piroplasma of dogs and cattle. Hence the lecturer said the ovaries and ovary glands should be carefully examined in fed insects for further stages of the parasite. Nevertheless, our knowledge of the organism now suffices to make the facts valuable for prophylaxis. In regard to this the lecturer described some efforts to destroy insects which had been tried with more or less success previous to the discovery of flagellates in the stomachs of bedbugs, and he concluded by emphasizing the fact that the advances he had described in our knowledge of the most terrible of all tropical diseases is a pleasing instance of increased interest in these affections leading to combined work in different places by medical men of British nationality.

In his concluding Lettsomian lecture Dr. Beevor dealt with tumors affecting the cerebellum. He said the majority of extracerebellar tumors were found in the anterior part of the posterior fossa between the cerebellum and pons close to the petrous bone. Occasionally they grew more posteriorly, compressing the lateral lobe. In both extra- and intracerebellar growths severe headache and vomiting were present. Optic neuritis was earlier in intra- than extra-tumors. Vertigo or giddiness appeared in both and the patient thought objects were revolving in the direction away from the side of his lesion. In extra-cases compression of the auditory and facial nerves was common and gave rise to symptoms. This compression did not occur in intra-cases. In the limbs paresis was associated with absent knee jerk in locomotor ataxia; in cerebellar tumor it might be combined with increase of that reflex. A healthy person executing a movement against resistance which was suddenly removed could prevent the movement being carried on by bringing into action the antagonizing muscles, but this power appeared to be lost in cerebellar tumors. Also when the patient closed his eyes the ataxy was increased, showing its origin to be central, not peripheral as in locomotor ataxia. The peculiar staggering gait was likened to a landsman trying to walk on a rolling sea, but there was a tendency to go to one side more than the other. It was difficult to say which way he would fall; he tended to deviate to the side of the lesion and so might walk in a circle; but he was conscious of this and tried to counteract it by bringing forward the shoulder of the same side. Another test was to make the patient stand on one leg and then on the other; he would be more unsteady on the same side as the lesion. That was the walk of both forms. In extracerebellar tumors the knee jerk was not altered; in intracerebellar it might be diminished on the same side, but this was very uncertain. As to the diagnosis from cerebral tumors, there was to be considered absence of mental symptoms, sphincter troubles, and epileptiform attacks. A reeling gait associated with deviation—say to the left—with weakness of movements of the eyes to the left and paresis of left limbs without alteration of reflexes, would be in favor of intracerebellar growth in the left lateral lobe. Deafness and left facial paralysis, with weakened eye and limb movements of left side, and weakness and rigidity of the right limbs with increased knee jerk and extensor plantar reflex indicated an extracerebellar tumor on the left side.

Membranous dysmenorrhea was discussed at the Gynecological Society last month. Dr. S. J. Aarons showed specimens from four cases. In none of the casts was there a cavity, though one of them showed a small opening suggestive of closure by pressure. His treatment was curettage followed by the application of nitric acid.

Dr. M. Moullin thought curettage useless and no treatment of much value. The cases he had seen were nearly all in sterile women. He had sometimes seen a second membrane passed within four days of the first, showing the rapidity with which it may be formed.

Dr. Heywood Smith could hardly imagine a dysmenorrheal membrane not to be an open sac.

Dr. Giles was interested at finding some of these casts solid, contrary to the usual teaching. As they were formed by exudation in the uterine cavity it was not very surprising that such exudation should sometimes appear solid. If the cavity was distended the exudation might solidify before the surfaces came together and so a cavity result.

Dr. Macnaughton Jones did not think treatment of these cases so hopeless as some seemed to do. He had cured some by applications of pure carbolic acid and thought curettage also did good. Arsenic internally he considered valuable.

Mr. Spanton, president, said one always had the idea the passage of these casts was part of a vicious circle.

The meeting afterwards considered the question of operations for fibroma. Dr. Dauber showed a specimen of fibroma of the ovary removed from a patient of 77. It had been fixed in the pelvis, causing complete extrusion of the uterus. He said this case proved that aged patients bore abdominal operations well. He had operated lately at ages 70 to 80 and recovery was in each case rapid and complete, as the case of the specimen shown also was.

Dr. Macnaughton Jones agreed to this and said he had a letter from a lady of 83 from whom he removed the uterus at 74.

Mr. Furneaux Jordan said a fibroid however small should always be removed if it gave rise to symptoms.

Mr. Bowreman Jessett was for operation for all fibroids. Many patients could be saved trouble and risk by early removal.

The president, Mr. Spanton, would be sorry for the society to lay down the dictum that every small fibroid should be removed.

Dr. Dauber advocated removal of every fibroid.

Dr. M. Jones protested against operations when no symptoms were produced. The greatest operators did not operate unless symptoms arose to justify them.

The fear of an epidemic of cerebrospinal fever still prevails among the public to a certain extent, but there is no sign of panic and the statements of the Medical Officers of Health are for the most part reassuring. Some of the newspapers are heedless of the effects of their statements, though for the most part they are discouraging alarm. Professor Osler has suffered an interview in which he said that both from the history of the disease and from the course of the present local outbreaks it is not likely to become a serious epidemic. It is, he added, a singularly localized disease, rarely spreading to any extent even from one city where it may be prevalent to another in the vicinity. This he illustrated by the New York outbreak of 1905-6 which was not transmitted to other cities, nor was that of Boston. So he thought an epidemic in London very unlikely, but that the Local Government Board was making a wise provision in having the disease compulsorily notified and thoroughly investigated.

Some of the papers have further published extracts from Dr. Osler's "Practice of Medicine" on the disease, with an elaborate account of the distinctions the learned professor has attained.

Prof. White has shown organisms from the Dublin cases to the Academy of Medicine. He made direct cultivations from spinal fluid obtained by lumbar puncture. From these he grew pure cultures of a diplococcus in tetrad form. He continued inoculation to the fifth generation. From animal inoculations he had only negative results. The diplococcus resembled that described by Weichselbaum, but differed in having a capsule and forming short chains. He felt sure the organism was a distinct entity. It might possibly be a modified pneumococcus. In a former outbreak he had only obtained pneumococci from a large number of cases. Prof. McWeeney also told the Academy that he had grown from fluid obtained by lumbar puncture the only organism present, a gram staining diplococcus tending to form tetrads, but which was not the same as that described by Prof. White.

On Wednesday there was an influential meeting at Lord Brassey's house in Park Lane to plead for the immediate needs of the East London Children's Hospital. It had been arranged to hold a bazaar in June, but that has been postponed because the Sunday fund collection is then made and will not give a grant to an institution appealing at the same time. Adeline, Duchess of Bedford, made an eloquent speech, contrasting the smiles of the children of the rich and those of the poor; said children's hospitals ought to be thank offerings and memorials, every cot and every object in such hospitals a gift or thank offering; they were often memorials of dead children but should oftener be thank offerings for the living. Sir William Evans-Gordon said the hospital not only provided relief and cure but instructed mothers how to take care of the children, and so tried to check infantile mortality.

The annual meeting of the Royal Sea-Bathing Hospital was held on Wednesday. The Earl of Derby (president) spoke of the splendid work it had done and pleaded for £15,000 to provide extension which was needed to meet the demands on the charity.

The death has occurred of Dr. Arthur Ernest Sansom, Consulting Physician to the London Hospital, at the age of sixty-eight. Educated at King's College, he graduated at the University of London, M.B., 1859; M.D., 1866. He was elected assistant physician to the London Hospital in May, 1874, became full physician in May, 1800, and on resigning in 1902 was made consulting physician. In 1878 he was elected a Fellow of the Royal College of Physicians. Dr. Sansom took an active part in the teaching at the London Hospital College and was much esteemed by his colleagues. He had served as examiner at the two Royal Colleges, as well as to the University of Durham and to his own University. He had also been president of the Medical Society, and among other appointments was consultant to the N. E. Children's Hospital and the Royal Hospital for Diseases of the Chest. He was the author of three works on heart diseases, including his Lettsomian lectures and of many contributions to the journals and societies on thoracic diseases, anesthetics, antiseptics, and points in clinical medicine. He contributed to *Allbutt's System* and the *Twentieth Century Practice*. He was largely instrumental in introducing the use of the sulphocarbolates.

Many of your traveled readers may remember Dr. Herbert, late Physician to the Herbert Hospital, Paris, who died on the 8th inst. He was an Oxford man where he took his M.A. and then entered as a student in Paris where he took M.D. and where he was during the siege. He was an officer of the Legion of Honor.

Dr. William Henry Pearse died on the 7th inst. at Plymouth where he had practised for over thirty years. He had previously been surgeon in the Government Emigration Service and wrote a work on "Health in Calcutta and British Emigrant Ships," 1866. He was M.D., Edin., 1851, and M.R.C.P., Edin., 1882. He contributed a number of articles on consumption and other practical papers to periodicals, chiefly to the *Medical Press* and *Circular*. All Plymouth mourns the loss of her deeply regretted and esteemed physician.

Dr. Surgeon-General J. K. Carr, M.D., retired, died on the 4th inst. in his eighty-seventh year, having been in the Medical Service of the Army from 1846 to 1875.

ACUTE PERFORATIVE PERITONITIS.

To the Editor of the Medical Record:

Sir:—In Dr. Brownson's answer, published in the Medical Record of February 16, to my criticism appearing in your issue of January 12, 1907, exception is taken to my fear that the readers of your journal might suffer by the acceptance of his misjudged conclusions, on the ground that your readers are competent to decide for themselves. I can hardly agree to that regarding all your readers unless both sides of the question are presented, and dependence on their good judgment under these circumstances is my reason for presenting the other side. Conclusions that the experienced surgeon lays down are accepted by the general practitioner for his guidance. He is the first attendant of these cases, and woe to many of them if the surgeon's assistance is called in too late by reason of said "misjudged conclusions." The doctor, in speaking of my criticism of his ideas as to the hopelessness of general peritonitis cases, first misuses quotation marks and submits an argument that at first sight seems to have some relation to the subject, but on second look proves to be entirely irrelevant. The point under consideration was operation in general peritonitis, the argument against it applies to appendicitis and not to general peritonitis. Everyone so long in practice knows what the mortality was six or eight years ago in operations for peritonitis and how loth surgeons were then to operate in this condition.

Another point, and an important one, that I spoke of in my letter was that "perforation and peritoneal infection with a temperature of 105° or 106° and pulse of 140 or 160 is a rare combination and does not represent the condition in the really bad cases." This the doctor answers by a second abuse of quotation marks, this time by omitting them, and making words that I quoted from him, and so indicated by the proper marks, look as if they were my own.

There is no practical distinction, so far as conditions indicative of operation are concerned, between peritonitis caused by the bursting of an abscess, which Dr. Brownson lays so much stress on as being the class of cases he refers to, and perforation of the appendix in the absence of surrounding protective adhesions. The fact that so much stress is laid on this particular cause, "the bursting of an abscess," suggests that one of the reasons the doctor encounters this condition so frequently may be due to what he terms "the more modern scientific treatment of to-day," which he advocates and supposedly follows in usual acute appendicitis cases. He does not operate during the "intermediary period when there is fever and distention of the abdomen." This would correspond to the period when most of the acute and really urgent cases come under the surgeon's observation. Delay in operation under these circumstances would permit the development of the usual proportion of abscesses and so supply abundant material where it is possible for the "bursting of an abscess" to occur.

The doctor wants to know why, if I advocate operation in general peritonitis because nothing is lost thereby, I do not on this principle operate on all cases of tuberculosis of the lungs, etc. He omits to remark that I gave the reason and that I distinctly stated that "the fact is that to-day a fair proportion of these patients are saved by operating on them." I have no sympathy with those who blind themselves to their duty behind the cloak of "every failure tends to discourage surgery and discourage those who

could not [illegible] with safety and benefit." I cannot see the justification for refusal of his chance of life, be it ever so small, to any individual because someone else might [illegible] operation on that account. That I am not alone in this stand I was pleased to see on reading Dr. Douglas' article on this subject in the MEDICAL RECORD of February 23, 1907, p. 304, where, among other remarks directly to the point, he says: "Suffice it to say that in private work his (the surgeon's) highest obligation is to his individual patient, regardless of how it may react either upon him, you, or the community." That strikes me as sensible.

One more statement made by Dr. Brownson I want to correct. He says "the technique of removal of the appendix adds to the risk of the operation and is of no practical benefit, since the process that forms the abscess removes the portion of the appendix that is diseased." That the remains of a gangrenous appendix may be removed by natural means is a possibility, as pointed out and explained in a previous article by me (*New York State Journal of Medicine*, August, 1906), but such disposition is decidedly exceptional. If not removed the appendix remains to cause recurrence of trouble in the future. This must be evident to anyone doing extensive work in this line and familiar with conditions encountered, and my personal experience with the few cases where I failed to remove the appendix, as well as with some cases of others where the appendix was not removed, bears out the conclusion. To give instances would take too much space here, but they are at the disposal of anyone who may ask for them.

Dr. Brownson quotes from "a well known and experienced surgeon," and from "one of the greatest authorities on appendicitis," but does not give their names that we might judge of the value of their sayings. The last quotation is very apt, and in its ambiguity could be applied to any side of any question. "It is only a question of time when all will be forced to accept this theory, as facts will overcome prejudice and tradition."

A. E. ISAACS, M.D.

240 EAST BROADWAY, NEW YORK.

Progress of Medical Science.

New York Medical Journal, March 23, 1907.

Aural Affections in Relation to Mental Disturbances.—W. S. Bryant divides aural affections with reference to mental disturbances into the following classes: (1) Cases of aural derangement which bear no relationship whatever to mental disturbances; (2) cases of aural disease causing mental irritation and leading to psychical affections, usually colored by the ear symptoms; (3) disturbances of the ear which act as causes of general exhaustion and hasten the psychic symptoms; (4) diseases of the ear which progress to loss of hearing, destroying the connection with the outside world, and thus upsetting the mental equilibrium; (5) hallucinations of hearing, which are a result of the combination of an ear affection with a psychopathic condition and which are caused by the subjective sensation of a disturbed organ of hearing falling upon deranged higher centers; and (6) affections of the ear which are secondary to the mental disturbance. He discusses these various classes and arrives at the following conclusions: (1) Insanity is usually accompanied by aural disease. In the majority of the insane the two affections are naturally dependent. (2) Hallucinations of hearing arise from tinnitus through the misinterpretation of aural stimuli under psychopathic conditions. (3) Cessation of the tinnitus can be expected to relieve the auditory hallucinations.

Pasteurization; Advantages and Disadvantages to the Consumer.—R. G. Freeman points out the distinction between efficient pasteurization and the ordinary commercial process. The home process, in which the milk, after sealing in nursing bottles, is kept at 168° F. for half an hour and then rapidly cooled, the bottles being kept sealed and used for only a twenty-four hours' supply, he strongly commends. Such milk is much safer than our cleanest raw milk. Concerning milk depot pasteurization, he notes the varying conditions in different localities, and thinks that success is more likely to follow the distribution in New York City of modified milk efficiently pasteurized in milking bottles by the supplying milk depots than by a similar distribution of raw milk. He condemns commercial pasteurization as interfering with the crusade for clean milk by making dirty milk more marketable. It gives the public a false sense of security, the public buys it, supposing it a fairly sterile milk, freed from pathogenic bacteria, while the milk in question is a highly contaminated product, which continues to deteriorate much faster than raw milk, even if kept moderately cold. The author summarizes his views as follows: There are two distinct processes known as pasteurization. (1) Efficient pasteurization in nursing bottles intended to protect the consumer of the milk from bacteria and producing a food with few bacteria, and no living pathogenic bacteria we fear in milk. (2) Commercial pasteurization intended to make marketable dirty milk which could not otherwise be kept sweet until consumed, but which usually contains, on reaching the consumer, a large number of living bacteria, including possibly pathogenic bacteria and the tubercle bacillus if it is present in the milk. Efficient pasteurization has been most valuable as used in homes and milk depots. Commercial pasteurization should be tolerated only as a temporary means of modifying the dangers of dirty milk.

The Use of Ammonia in Counteracting the Fumes of Formaldehyde.—E. V. Wilcox found that commercial formaldehyde mixed with aqua ammoniæ undergoes a rather rapid reaction, causing the development of heat and the formation of a crystalline body appearing on evaporation. This body is hexamethylenamine $(CH_2)_6N_4$, which is practically odorless. Further experiments showed that the fumes of formaldehyde could be completely neutralized by ammonia fumes and vice versa. The experiment was repeated on a large scale under the ordinary conditions of disinfecting a room. Formaldehyde was employed, and as soon as the room had been sufficiently aired to allow men to work in it, ammonia was sprinkled around and the room closed again. The odor of the original disinfectant was destroyed in half an hour. In the experiment made, two quarts of methyl alcohol were consumed in a room of 1,500 cubic feet capacity in a formaldehyde generator, and, in addition, three pounds of commercial formaldehyde were exposed on the sheets. Three pints of ammonia water were then used. The method does not seem to interfere with the effectiveness of the fumigation.

Journal of the American Medical Association, March 30, 1907.

Lymphoid Changes in Infectious Diseases.—W. T. Councilman calls attention to the proliferative changes followed by necrosis taking place in the lymph nodes throughout the body in certain infectious diseases, but specially noticeable in certain regions. The necrosis occurs chiefly in the germinal centers, but there may also be destruction of small scattered lymphoid cells. The necrotic cells are taken up by phagocytes, which are greatly increased by proliferation of the endothelial cells of the sinuses. The new formation of cells does not, as normally, lead to increase in the small lymphoid cells. The new cell formation seems to start from cells of an indifferent character resembling those found in the germinal centers. Some of them seem simply to grow in size. Others are converted into plasma cells and some cannot be distinguished from myelocytes. Polynuclear leucocytes are not formed. These new cells enter into the blood, partly by means of the efferent lymphatics, partly by migrating into the vessels, and are found in blood-vessels of all tissues of the body, but they seem less adapted to the blood movement than the normal leucocytes. They are found in great numbers in the vessels of certain organs, such as the kidney, and they pass from the vessels by active ameboid motion into the interstitial tissues in such numbers as sometimes treble the weight of the organ. In the interstitial tissues the cells have a greater tendency to plasma cell differentiation than elsewhere, and foci may be found composed of typical plasma cells. The cells have marked power of proliferation and nuclear figures are abundant. In division, the cytoplasm becomes more granular and granules are cast off. Councilman has not been able to find a relation between these foci and injury or degeneration of the tissue. The interstitial foci are most frequently found in the kidney and next in the adrenals.

Meningism as Distinguished from Meningitis.—C. Jackson favors the use of the term meningism, introduced by French writers, to designate a syndrome with most of the earlier symptoms of meningitis, but without lesions of the meninges and of more favorable prognosis. Any of the symptoms of meningitis may occur, but the erethistic, rather than the depressive, predominate. The full development of pressure symptoms, paralysis or other indications of actual organic disease, will usually exclude meningism. He recognizes

as etiologic types the toxemic, the reflex, and the irritative; in all three there are [illegible] changes and in many cases direct action on the cortical cells. In the toxemic cases the nosotoxins in the blood act similarly to toxic drug doses on the cerebrum. The readiness with which the symptoms of meningism can be quieted by small doses of morphine is remarked on by Jackson as an important diagnostic point. These cases are distinct from Quincke's serous meningitis inasmuch as there is no serous involvement. Looking at the condition from the otologist's point of view, the irritative and toxemic cases, he says, when occurring in the course of middle-ear disease, are of the utmost importance as regards diagnosis, and often call for radical operation even if the mastoid is yet uninvolved.

The Radical Mastoid Operation.—F. Allport gives a detailed and very fully illustrated description of the radical mastoid operation, which, he says, is the acme of mastoid surgery, should only be undertaken by an operator of special experience, and is worthy of the continued study of the aural surgeon. He makes a long incision so as to expose a wide operative field and uses self-retaining retractors that check all soft tissue hemorrhage. Each stage of the operation is described in detail and special stress is laid on the proper after-packing of the cavities, for which he uses several pieces of gauze instead of a single one, as is done by some operators. The importance of the after-treatment is emphasized generally. He closes his paper with a quotation from Ballance against undue conservatism as regards this operation for the relief of intractable purulent otorrhea.

Spina Bifida.—H. Greenburg pleads for the more extended use of operative methods in the treatment of spina bifida, and reports a case, calling attention to certain points in the technique. He employed the muscle flap method of Bayer, improving on it, however, by utilizing the aponeurosis of the latissimus dorsi. A longitudinal incision of sufficient length to cover the defect was made over one side of the spinous processes above the cleft, thus freeing a section of the aponeurosis at its origin on that side. Another longer oblique downward incision was made from the upper point of the first, thus making a triangular flap of aponeurosis free at all points except the apex. Using this apex as a center, the whole flap is rotated downward until it covers the defect of the vertebra on that side. The same procedure is followed on the other side, and the borders of the flaps are united with chromicized catgut directly over the defect, giving a covering next to bone in strength and consistency. His patient, who had been getting steadily worse, began to improve and was nearly well in two months. The pressure on the cord, which had lasted for sixteen years, and had suspended the function of the cord, had not so impaired its tissue as to prevent a speedy alleviation of symptoms and restoration of function.

Arseniuretted Hydrogen Poisoning.—N. W. Jones gives the history of five cases of poisoning by arseniuretted hydrogen in workers with the cyanid process of gold extraction from low-grade ores, and also tabulates fifty-five other cases of poisoning from this gas collected in medical literature. Considering the very common presence of arsenic in the materials used in this process a rather frequent occurrence of such poisoning might be looked for, but these cases seem to be exceptional. It seems rather remarkable that so few cases of this poisoning from all sources are on record in view of the numerous possible sources in the arts and manufactures. Jones discusses the pathology, symptomatology, and treatment, and reviews the literature in regard to the effects on the system. The poison acts differently from the other salts of arsenic. The blood and kidneys are principally involved, the hemoglobin and red cells being attacked, and the kidneys undergoing an intense degenerative process mainly involving the convoluted tubules, and the glomeruli least. The three characteristic symptoms are pain in the region of the kidneys, hemoglobinuria, which is a constant symptom, and jaundice, probably obstructive, though the disturbed liver cell function, may play a part. Death when it occurs is undoubtedly largely due to acute urinary suppression. Some patients have shown uremic symptoms, but the majority do not. Twenty of the cases tabulated were fatal, death occurring in from two to thirty days, the average being 8.2 days. The chief indications in treatment are: First, abundant fresh air and administration of oxygen. Second, the production of free diuresis to prevent blocking of the uriniferous tubules with disintegrated blood cells and epithelium. Saline enemas and warm baths may also be useful. General supportive treatment [illegible] diuresis is a very favorable sign, as the majority of patients with polyuria recover. The consecutive anemia is much benefited by iron.

Inspection of the Jugular Vein and Visual Methods in Diagnosis of Heart-Block.—Arthur D. Hirschfelder criticises the recent contribution on this subject by G. W. McCaskey, Fort Wayne, Ind., who replies to the criticism. Hirschfelder fails to see what advantage McCaskey's ocular method of diagnosing heart-block by means of a specially devised apparatus has over simply watching the pulsation of the jugular vein while feeling the pulse in the carotid with the finger. He believes that mere inspection of the venous pulse, while sometimes of value, is subject to grave diagnostic error. In his reply McCaskey, while admitting that Hirschfelder's criticism is partly right, believes that in a large number of cases the use of his apparatus will be of great value in arriving at a diagnosis. He thinks there can be no question as to the greater ease with which comparison can be made between the venous and arterial pulsations by means of his apparatus as compared with the clumsier method of inspection and palpation. He thinks the whole question is whether these advantages are sufficient to offset the multiplication of instruments.

The Lancet, March 10, 1907.

Aceto-Salicylic Acid in Rheumatic Endocarditis.—A case history is detailed by E. C. Ibbotson, whose patient was a thin anemic girl of sixteen years, presenting the usual features of rheumatic endocarditis and being in a condition of extreme debility. Aceto-salicylic acid was used in fifteen grain doses, when the temperature showed a tendency to rise. It was later continued in seven grain doses thrice daily. In the author's view the case seems to point out the superiority of this particular acid in rheumatic fever when the salicylates have been tried without positive and permanent effect. He does not overlook, however, the value of the opium and blisters used in this special case. For a ferruginous tonic following the acute symptoms hemoglobin is less liable to produce relapse than iron salts in combating the subsequent anemia. He has found that salicylates aggravate epistaxis which in his experience is not by any means an uncommon concomitant of rheumatism, and is probably due to the accompanying anemia. It is important that the aceto-salicylic acid should not be given in tabloid form unless the tabloids are crushed before administration. The powder suspended in water with a little mucilage acts well and has no unpleasant taste. He has not found aceto-salicylic acid produce headache or dyspepsia, but, he thinks, that it is contraindicated in chronic rheumatism occurring in the subjects of organic heart disease of non-rheumatic origin.

The Medical Treatment of Congenital Pyloric Stenosis.—G. A. Sutherland gives detailed histories of three cases, two recovering and one dying without apparent cause. He then discusses in turn, the object aimed at by treatment, the food required and feeding methods, and gastric lavage. The aim of treatment is to keep the stomach free from irritants, which may maintain pyloric spasm and from anything in the food line which, digested or undigested, may excite such spasm. Signs of progress are cessation of vomiting, regular bowel action, less marked stomach peristalsis, cessation of discomfort, whining, apathy, etc., on the child's part, and improvement of nutrition. Diarrhea is a common complication during the course of treatment. The best plan here is to reduce the amount of food one-half and keep it so until the diarrhea has ceased. Half a grain of gray powder may be given twice or thrice daily. The diarrhea is always a serious symptom and may cause death. The author has found no results from antispasmodic drugs or opium even pushed to the full degree. In cases of marasmatic infants with pyloric stenosis, with all the tissues dried up, the use of saline injections both subcutaneously and per rectum has seemed beneficial. From four to ten ounces of normal saline solution can be given daily and will act as a restorative until the improvement of the pyloric function allows of the entrance of a sufficient amount of food into the system by the natural route. In cases in which the infant is much reduced or has a subnormal temperature brandy, up to half a dram daily, will be found of service as a general tonic. The administration of cod-liver oil by inunction, if it be of any value, would appear to be specially suited to the conditions present in this affection. The author has only employed it once and in that case a skin eruption quickly followed and led to its discontinuance.

Tertiary Syphilitic Fever and the Visceral and Other Changes Connected with It.—The paper of F. P. Weber

opens with the history of the case of a woman of 36 years who came under observation at various times, there being at each time a remarkably rapid disappearance of the syphilitic fever on the commencement within two days or so of antisyphilitic treatment. Such a fever can easily be mistaken for the pyrexia of sepsis or of tuberculosis. It has sometimes been mistaken for malaria. Other maladies requiring exclusion are typhoid, malignant endocarditis, and febrile cholelithiasis. The author passes in review the literature of the subject and refers to various cases in which local symptoms have pointed to the involvement of some definite organ or system, due to specific infection, the febrile movement being a prominent symptom. Under this category are mentioned enlarged liver with jaundice, dyspepsia, diarrhea, etc. Authorities seem to agree that it is in the cases in which the infection lodges in the portal system that the fever is particularly constant and prominent. It is often of an intermittent type and accompanied by shivering. One case is recorded of a man dying from intraperitoneal hemorrhage, which the autopsy showed to have arisen from a perforating syphilitic ulcer of the stomach. It must be acknowledged that while undoubted syphilitic gumma of the stomach and bowels is rare, a good many cases have been verified either by the results of treatment or autopsy.

British Medical Journal, March 16, 1907.

Intestinal Worms in the Vermiform Appendix.—J. W. Heekes refers to this subject in connection with an operation on a pelvic case in a woman of thirty-one years. As the appendix was elongated, swollen, and coherent, it was removed. After ligature of the stump a thread-worm was seen to wriggle out from the lumen of the appendix. On subsequently opening up the excised portion ten more were seen lying in the mucous membrane for about 1½ in. of its length; some were on the surface, one or two lay deep down in the lining membrane, but none had pierced the other coats of the appendix. On examination microscopically three were found to be male, and the remainder female, with ova in great numbers. The mucous membrane of the appendix was not much inflamed, but there was some congestion. Probably this was due to the pelvic peritonitis having involved the appendix and caused the adhesions. The occurrence of the worms in the appendix was most likely accidental, they having migrated from the cecum, for the patient had had the usual symptoms of the presence of thread-worms for about three and a half months. The history of the case pointed to old-standing trouble in the pelvis, especially on the right side, though at the operation the left Fallopian tube was also found adherent and swollen, and was removed. Three weeks before admission the patient had pain in the right iliac region, accompanied by vomiting, and the bowels were constipated, but there was no proof that this attack was of appendicular origin.

Class Incidence in Cancer.—D. Heron has made some investigations based on the English Registrar-General's returns and tabulates his results in this brief paper. It appears from his figures that there is always a substantial correlation between the cancer death-rate and social status; in other words, the evidence of cancer is most heavy among the well-to-do class. The author observes that what is badly needed at the present time is a collection of complete family histories of cancer cases. While such family histories in cases of insanity and pulmonary tuberculosis have been provided for the use of this laboratory in fair numbers, which we hope may go on increasing, we have, and can find, no records of any value bearing on heredity in cancer cases. The statements "a family history" or "no family history" are purely useless for scientific discussion of inheritance, when neither the individual relatives attacked nor the sizes of the families are stated.

The Relation of Diet to Thyroid Activity.—Experiments have been made by A. D. Fordyce in feeding rats on milk alone and on bread and milk, and comparing the thyroids removed from these two series of animals with those of wild rats. He found that the glands of all animals fed on bread and milk showed a constant picture, while those from the wild rats (caught at the same time and place), though showing somewhat wider variations, yet in all cases displayed in a greater or less degree the same nature of differences from both the preceding type of gland. In the milk-fed rat gland-sections showed large vesicles, well filled with colloid material, while the lining cells were small with deeply-stained nuclei. In the bread-and-milk-fed rats the vesicles were seen to be very markedly smaller and the amount of colloid present very considerably less. Whereas, in the case of milk-fed rats, each vesicle consisted of a large lumen surrounded by a narrow ring of somewhat flattened cells; here it consisted of a ring of columnar cells enclosing a minute lumen or lying apparently almost in contact. Examination of the glands of wild rats showed them to be of a more or less intermediate nature between those of milk-fed and those of bread-and-milk-fed animals. Compared with sections from bread-and-milk-fed animals, the vesicles appeared distinctly larger, they contained considerably more colloid material, and the lining cells showed a greater variation in shape. These glands, one and all, it must be remembered, were removed from animals clinically in perfect health; and, while the thyroid gland is an organ well known to be subject to considerable variations in structure, yet the interest in the present note rests in the fact that the variations in the series of glands examined corresponded with the differences in diet.

The Use of the Calcium Salts as Cardiac Tonics in Pneumonia and Heart Disease.—Lauder Brunton states that he was called to see a case of pneumonia, and, fearing that the heart would fail, he thought over all the remedies which were likely to avert such an unfortunate result. It then occurred to him that calcium chloride ought to be useful. The only harm it was likely to do was to increase the coagulability of the blood, but any risk of this sort was small in comparison to that from cardiac failure, so he prescribed it. It is not so easy to judge of the usefulness of calcium salts in theatened cardiac failure as it is of the action of oxygen and strychnine, because the results are not so immediately apparent. As the patient for whom he prescribed the calcium made a good recovery he was encouraged to give it again, and has done so in a considerable number of cases. In some of them a fatal result has ensued in spite of everything that could be done, but in a number of them the effects appear to him so encouraging as to deserve a wider trial for the medicine. He usually gives it in 5 to 10 gr. doses every four hours, simply dissolved in water. As it is very deliquescent it can only be kept in solution. It has a very disagreeable saline taste, but this is well covered by saccharine, one minim of the elixir of saccharine containing one-twentieth of a grain of saccharine is sufficient to cover the taste of 10 gr. of calcium chloride. This mixture may be given either in water or in milk, and it does not interfere with the use of any other remedies. He has also used it in cardiac disease, where the ventricular wall appeared to be losing power, and here also the results have been encouraging. In cases of pneumonia, where one wishes to get rapid action, he thinks the chloride is the best salt of calcium, but in cardiac disease other salts may be employed, such as the lactophosphate or the glycerophosphate. It is quite possible that the great benefit one frequently observes from a milk diet in cases of heart disease may be due, in part at least, to the large quantity of calcium salts which the milk contains.

Berliner klinische Wochenschrift, March 11, 1907.

Retropharyngeal Growths.—Litthauer reviews the literature of tumors in this situation and says that so far thirty-four such cases have been reported. He contributes to this number two of his own. One of these was a gumma which promptly subsided under the administration of potassium iodide, while the other was a fibrosarcoma measuring 9 cm. by 6.5 cm. by 5 cm. It occurred in a woman of thirty-five years and was removed through an incision running parallel to the left lower jaw and extending from the mastoid process to the hyoid bone. The patient made a good recovery though certain paretic symptoms such as weakness of the soft palate, dysphagia, etc., persisted. Among these symptoms the so-called Horner's symptom complex was conspicuous; this depends on paralysis of the sympathetic and comprises contraction of the pupil, narrowing of the palpebral opening and enophthalmos. From a consideration of the reported cases Litthauer concludes that the incision he made use of is the most advantageous and that attempts to remove retropharyngeal growths through the mouth or through a subhyoid pharyngotomy are ill-advised.

African Sleeping Sickness.—Kutscher contributes an account of what is known in regard to this infection. Formerly considered to be more or less confined to the western coast of Africa, Cook in 1901 discovered a new area of infection in British Uganda, on the shores of the Victoria-Nyanza, which since that time has been spreading rapidly in spite of all efforts made to restrict it. Clinically four stages of the disease may be dis-

tinguished. In the first, which extends from the date of infection with the trypanosomes to the onset of fever and the appearance of the eruption, no symptoms occur. Sometimes during this period it is possible to demonstrate the presence of trypanosomes in the blood or in the swollen cervical glands. This stage is of uncertain duration and is followed by the so-called trypanosome fever. This is characterized by irregular attacks of fever which are usually accompanied by severe headache and are often taken for malaria. Together with the fever transitory edema, erythema, and urticaria of the face and legs frequently develop. The heart rate and respiration are increased, and swelling of the spleen may be noted. The lymph nodes, especially the cervical glands, are swollen. This stage gradually merges into the third phase, the true sleeping sickness. The patients evince a tendency to fatigue, irritability, and neglect of the person; gradually the tendency to somnolence increases, it is difficult to persuade the patient to take the necessary amount of nourishment, and finally the fourth stage sets in, in the course of which a terminal secondary diplococcus infection of the cerebral membranes frequently takes place. It has been established that the infection occurs through the bite of a tsetse fly, the *Glossina palpalis*, and attempts at prophylaxis must be directed towards the extermination of this insect. The prognosis of sleeping sickness is extremely bad, although certain arsenic combinations and trypan red may be found to be satisfactory therapeutic agents.

Münchener medizinische Wochenschrift, March 5, 1907.

The Prophylaxis of Ophthalmia in the Newborn.—Seefelder speaks highly of the value of silver acetate as a substitute for silver nitrate as a prophylactic against ophthalmia in infants. The efficiency of this agent is as great as that of the nitrate, while it seems to have no disadvantages. In a series of 500 infants the author applied the acetate to one eye and the nitrate to the other and found that in no case were any evidences of irritation caused by the acetate. There was also no demonstrable damage to the corneal epithelium and the conjunctiva did not offer any indications of undue stimulation. He therefore considers that silver acetate is not inferior to the nitrate in its action, while it possesses the advantage that its solutions do not become more concentrated through evaporation, whereas, with silver nitrate, a change of this nature may lead to serious consequences.

The Effect of Cholin and of the X-Rays on the Course of Pregnancy.—Hippel and Pagenstecher review the literature of this subject which has now become quite large and also describe the results of some experimental observations of their own. They found on exposing pregnant rabbits to the *x*-rays that three sessions of fifteen minutes each were usually sufficient to destroy entirely or in great part the product of conception, but that individual variations in susceptibility in this respect were very great. It was also found that on covering the abdomen of the animal subjected to the action of the rays with a lead plate, the destruction of the embryos took place just about as when the rays were allowed to impinge directly on the unprotected abdomen. Fourteen animals were given injections of cholin; in ten of these sterility resulted, and in two others some of the embryos were destroyed. Only two of the animals were delivered normally, and both of these had received only small amounts of the substance. The authors state that apparently a daily injection of 10 c.c. of a one per cent. solution of cholin given for eight days, beginning with the sixth or seventh day after impregnation, almost always prevents the progress of the pregnancy. This result may also be obtained, however, even if the treatment is not given until much later. They consider it likely that the action of the *x*-rays produces in the body some toxic substance similar to cholin or to the derivative of the latter formed in the body which passes from the maternal body to that of the embryo and destroys the vitality of the latter's cells. The dead embryo then undergoes absorption and the changes in the uterine wall attending the pregnancy gradually retrograde. Cholin itself, if pure, appears to have no toxic effect on the maternal animal in the doses employed.

Deutsche medizinische Wochenschrift, March 7, 1907.

The Successful Inoculation of Calves with Bacilli from Human Pulmonary Tuberculosis.—Eber, who assumes the standpoint that human and bovine tuberculosis are due to the same etiological factor, describes two instances in which he was able to inoculate successfully calves with material obtained from cases of human pulmonary infection. In the one instance a portion of a phthisical lung was used and in the other a portion of the pia from a patient with pulmonary tuberculosis and tuberculous meningitis. These tissues were inoculated into guinea pigs and portions of the organs of the animals were used for the inoculation of the calves. Eber believes that these experiments do not prove that the two patients in question were suffering from a bovine infection and he expresses his disagreement with the alleged view of Koch and his pupils that all tuberculous lesions in man, which, on inoculation into the cattle prove to be virulent for these animals, were originally due to a bovine infection. The author's conclusions are assailed in another article by Weber, who discusses Eber's experiments and views and comes to rather different conclusions. The details of the controversy cannot be reproduced in brief.

French and Italian Journals.

Rupture of the Heart.—Leenhardt reports this case. The patient was a woman sixty-eight years old, and obese. She was attacked suddenly by intense pain over the whole left side of the thorax and by extreme dyspnea. No pathological antecedent could be discovered. The patient presented a condition of extreme asphyxia and great distress; the face was congested, the eyes bulged forward, the lips were cyanosed, and there was very violent pain in the precordial region, which the patient pressed with both hands; the pulse was very rapid and irregular. Auscultation of the heart was useless on account of the rapidity and irregularity of its action. Two hours later all of these symptoms diminished, and on the following day there was no sign of what had passed except a pulse which was a little more rapid than normal, beating 92 to the minute. The pain and dyspnea had completely disappeared. For three days this condition persisted and then suddenly more than seventy hours after the onset of the symptoms the patient sat up in bed, uttered a cry, and fell back dead. At autopsy the heart was found to be large and completely infiltrated with fatty tissue. The pericardium was distended by blood and clots. On the anterior surface of the left ventricle was a fissure communicating with the ventricles. The rupture of the heart was found to have been caused by an infarct.—*Bulletin et Mémoires de la Société Anatomique de Paris*, July, 1906.

Testicular Atrophy.—Achard and Demanche had a man sixty-eight years old under their care. The patient suffered from mitral insufficiency. There existed atrophy of the testicles, which had developed after a violent traumatism at the age of twenty-five years. This accident had been followed by a diminution of muscular activity and by a falling of hair. The patient's face was almost smooth, his hair of the head was extremely thin, and the hairs over the entire body were almost wholly lacking. The visage was pale and wan. The cheeks were pendent and the fascies recalled that of an old woman suffering from myxedema. After studying the case the writers suggest the possibility of a relation between testicular insufficiency and thyroid insufficiency.—*Gazette des Hôpitaux Civils et Militaires*, December 27, 1906.

Ferments in the Urine of the Child.—Angiola Borrino has made examinations of the urine of healthy children from a few days old to twelve years of age to determine whether the ferments of the gastrointestinal system, pepsin, and trypsin are to be found in the urine. Both are known to be found in the urine of adults. The author finds that a ferment analogous to pepsin is found in the urine of children of all ages, while a ferment analogous to trypsin seems to be absent. Uropepsin is found in nursing babies and the newborn. Other authors have found it in the stomach of the fetus.—*Rivista di Clinica Pediatrica*, December, 1906.

Primary Sarcoma of the Tendon Sheaths.—V. Gaudiana says that up to 1880 it was thought that sarcomata never occurred on tendons or their sheaths. It is now known that such tumors do occur, and the author describes one in a child of twelve years, occurring on the tendons of the long and short extensors over the first metatarsal bone of the left foot, the course of which was very malignant. These tumors occur at any age, on any tendon, and are in general rather small, lobulated, and soft, or hard according to the type of sarcoma present. Both the skin over the tumor and the tumor itself are movable, and the function of the part is not interfered with. The glands are not involved early, and metastases occur late in the disease.—*Il Policlinico*, December, 1906.

Traumatic Ruptures of the Perineal Urethra.—Operative Results.—Savariaud has practised three interventions for traumatic rupture of the perineal ureter. In the

first patient [illegible] ruptured and the ureteral mucous [illegible] of its inferior surface. He practised [illegible] of the ureter of the corpus spongiosum and completely closed the perineum. Healing took place by first intention, and when the patient left the hospital the caliber of the ureter was sufficient for the passage of a sound number forty-eight. Three years later the ureter admitted only a bougie number twenty one. In the second case immediate suture was not successful and several weeks later a new intervention was performed. The result is not known on account of the disappearance of the patient. In the third case a suture of the ureter was impossible on account of the condition of the ruptured extremities, the borders of which were slashed, consequently Savariaud attached the ruptured extremities to the skin and placed a sound in position for a few days. Bougies were then passed. The patient urinates with comfort, but in the perineum there is cicatricial block which is noticed when the smallest bougies are inserted.—*Revue de Chirurgie*, December 10, 1906.

Pubiotomy.—Gigli believes that we have arrived at a new era in obstetrics owing to the important and precious discovery of pubiotomy. He thinks that he has reached the method of cutting the pelvic ring that gives the best possible prognosis, because it involves separation at the most favorable point of the pelvis, that point which results in the least danger of infection, the quickest healing, and the firmest union. He hopes to be able to convince his colleagues that symphyseotomy, exposing the woman to grave dangers of infection and of inability to walk as it does, has no right to exist, and that they will all desist from performing it and use his method. He reports a series of 300 cases of pubiotomy with a mortality of three per cent., and the cases that were fatal were all infected before the operation. If we leave out these cases we have a mortality that is reduced to zero.—*La Riforma Medica*, December 8, 1906.

Temporomaxillary Actinomycosis Cured by Iodo-Gelatine.—Francesco Lupo published the history of a case of actinomycosis of the temporo-maxillary articulation and side of the jaw, occurring in a woman of twenty-eight years of age. The swelling was of woody hardness, and examination of the pus from softened areas showed the presence of actinomyces and the absence of any other pus germs. They were in abundance in all pus examined during the second year of the disease. Each granule consisted of a central mass of filaments and a peripheral mass of rays. Cultures in animals showed foci of actinomycosis. The neighboring glands showed a characteristic hyperplasia with foci of detritus similar to cheesy matter. The patient was treated with iodide of potassium internally and with injections of the iodo-gelatine of Sclavo. The result was a complete disappearance of the growth and of all symptoms except an ankylosis of the jaw due to a large amount of cicatricial tissue in the articulation. This was removed by operation and the patient recovered the use of the articulation.—*Rivista Critica d. Clinica Medica*, December 1, 1906.

Hypodermic Injections of Sea Water.—P. Schivardi describes the use of injections of sea water for scrofula, tuberculosis, and similar conditions, which has been attempted since 1904. As used at present the water is obtained in the deep sea, far from any river, and will keep pure for some days. It must be sterilized before use and diluted with freshly prepared distilled water. One part of sea water is used to three parts of distilled water. It has been found better to use small injections daily rather than larger ones at longer intervals. The temperature of the injections should be that of the body, and syringes of metal or rubber should not be used. Five or ten centigrams of isotonic marine serum are injected at once. There is no reaction, but thirst is produced which produces diuresis. The best place for injections is the anterolateral region of the abdomen. Aseptic precautions are observed, and local massage follows. The results of such treatment have been most encouraging.—*Gazzetta Medica di Roma*, November, 1906.

Treatment of Heart Disease by Removal of Chlorides.—R. Massalongo and G. Zanibelli have made use of a diet that limits the ingestion of chlorides in cases of heart diseases for several years with gratifying results. They conclude that the chloride of sodium is a regulator of the isotonia of the humors, of osmotic pressure, of the dehydration of the tissues, and of arterial pressure, but at the same time is a factor in asystolic phenomena and dropsy in cardiac diseases. In the period lack of compensation there is a constant retention of the chlorides and hydration of the tissues, and a diminution of the chlorides ingested soon restores the equilibrium and puts an end to the unfavorable symptoms. Diagnostic and prognostic information can be gained by experimenting with the diet in this direction. [illegible] diet poor in chlorides must often be supplemented by the use of diuretics or heart tonics which accelerate the circulation. The diet is diuretic and regulates the circulation because the removal of edema lessens the obstacles to the heart action, and indirectly increases the energy of the heart. It has an important suspensive action, preventing asystolia, and it has not only a regulating and dishydrating action, but an energetic disintoxicating effect, retarding uremic symptoms.—*La Riforma Medica*, December 8, 1906.

Therapeutic Hints.

Acne Rosacea.—

℞ Lac sulphur... .... 3i
Camphor .... gr. x
Tragacanth ... . gr. x
Rose water..... ..... ℥ iv

M. et Sig.: Apply night and morning.

—J. E. Lockridge, *Medical Times and Hospital Gazette.*

Diarrhea.—

℞ Tinct. kino..... ....

Book Reviews.

TREATISE ON ORTHOPEDIC SURGERY. By ROYAL WHITMAN, M.D. Third Edition, Revised and Enlarged. Philadelphia and New York: Lea Brothers & Co., 1907.

DR. WHITMAN'S book has met with a very appreciative reception, as shown by the succession of editions within a comparatively few years. The subject is presented, as far as possible, in an objective manner, and the space allotted to each individual topic has been determined primarily by its relative importance in the actual work of orthopedic clinics. Particular attention has also been given to methods of examination, to symptoms, and to the causes and effects of disease and disability, so as to indicate in natural sequence the principles of treatment. The book is in many respects a personal record of the writer's experience, particularly as regards treatment. The illustrations, which are of uniform excellence, are also taken largely from the material at the author's clinics and hospital service and constitute a very important addition to the text. The good opinion expressed with regard to the worth of previous editions may be repeated here and the work labeled as a thoroughly up-to-date treatise on a most important subject, a proper knowledge of which is essential to every practitioner of medicine.

CLINICAL LECTURES ON ENLARGEMENT OF THE PROSTATE, With a Description of the Author's Operation of Total Enucleation of the Organ. By P. J. FREYER, M.A., M.D., M.Ch. Third Edition. New York: William Wood & Co., 1906.

THESE lectures constitute a portion of the work which the author intends to publish at a later date on the "Surgical Diseases of the Urinary Organs." The most important part of the book is taken up with a description of the writer's operation for total enucleation with which his name has been closely associated and which he had done in over three hundred cases up to the date of publication. Of the 312 cases 290 were successful to the extent that the patient was able to retain or pass urine without the aid of a catheter. The mortality in this series was about seven per cent. In the concluding chapter is presented a brief discussion of the claims of the writer in opposition to those for a similar operative procedure made by Fuller of New York, which is shown, however, to be totally different. The book presents the subject of prostatic hypertrophy and its treatment by local enucleation in a very clear and systematic manner, and constitutes a valuable guide to a procedure which has gained greatly in favor since its introduction.

MINOR MALADIES AND THEIR TREATMENT. By LEONARD WILLIAMS, M.D., M.R.C.P. Physician to the French Hospital, etc., London. New York: William Wood & Co., 1906.

THE subject matter of this book consists of a series of lectures delivered at the Medical Graduates' College and Polyclinic in London by the author, and the object in publishing them in the present form has been to supply in an accessible shape detailed information on topics with which the ordinary text-book deals only in a cursory manner. The book is very comprehensive in scope, dealing with the maladies which are liable to be of every-day occurrence, with numerous hints as to their differential diagnosis and the treatment. In a chapter entitled "Change of Air," there are reviewed the principles of climatology and spa treatment, and another chapter presents the main principles of domestic and personal sanitation. There is also an excellent concluding chapter on the subject of insanity, in which are given the practical and legal aspects of the matter. Taken as a whole, the work is a very efficient little manual, although the detailed references to certain forms of medication and treatment will not always appeal to the American practitioner. There is an excellent and complete index.

ON RETROPERITONEAL HERNIA; Being the "Arris and Gale" Lectures on the Anatomy and Surgery of the Peritoneal Fossæ, delivered at the Royal College of Surgeons of England in 1807 by B. G. A. MOYNIHAN, M.S., F.R.C.S. Second Edition, Revised, and in part rewritten by the author and J. F. DOBSON, M.S., F.R.C.S. New York: William Wood & Co., 1906.

THE advances which have been made in the anatomy of retroperitoneal hernia since the first publication of these lectures in 1899 have made imperative certain changes of opinion, and this has necessitated a number of important changes in the present edition. Within less than two hundred pages is given a very comprehensive idea of a subject which received comparatively little attention until within recent years. After describing the development of the intestinal canal and peritoneum, a knowledge of which is most essential to the understanding of the [illegible], the writers take up the various hernia which may occur in the duodenal folds and fossæ, the folds and pouches in the neighborhood of the cecum and vermiform appendix, the intersigmoid fossa, and the lesser peritoneal sac. A number of illustrative cases of the various types of hernia referred to are appended.

ANALYSE DES URINES. Considérée comme un des éléments de diagnostic. Par le Dr. ERN. GÉRARD, Professeur a la Faculté de Médecine et de Pharmacie de Lille. Deuxième édition revue et augmentée. Paris: Vigot Frères, 1906.

THE title of this book fully indicates its nature. The author has endeavored to create a work which should fill a want which does really exist. To students not familiar with the French as distinguished from the German view of some of the questions discussed, perhaps the book will appear somewhat peculiar; but as the modern English and American pathology is so distinctly German, an acquaintance with other views may be of value. Really original work in this department of study is hardly possible, yet a careful study of this book may have its reward.

ATLAS AND TEXTBOOK OF HUMAN ANATOMY. By Dr. JOHANNES SOBOTTA, Professor of Anatomy in the University of Würzburg. Edited, with additions, by J. PLAYFAIR MCMURRICH, A.M., Ph.D., Professor of Anatomy in the University of Michigan. Vol. I, Bones, Ligaments, Joints, and Muscles. Vol. II, the Viscera, Including the Heart. Philadelphia and London: W. B. Saunders Company, 1906.

THIS is a translation, with notes and additions, of Professor Sobotta's well-known and valued anatomical atlas. It differs from the original, however, in that the atlas has been combined with the text, instead of the two constituting separate parts. We question the wisdom of this, for the work was intended chiefly for consultation, and not as a textbook for the undergraduate, who has better works for his purpose in Cunningham and Gray. In the original the atlas first contained the illustrations with only the absolutely essential descriptive matter. The text might, indeed, almost as well have been omitted as far as the utility of the work to the majority of those who will use it goes. This does not mean that the text is not good, but it is in the way of the man who wants only to sharpen the lines of his mental picture of a certain anatomical region which may have faded a little since his dissecting days. The inclusion of a description of the heart among the viscera in this second volume is perhaps anatomically justifiable, but we think it would have been better to follow the usual custom of describing the heart with the rest of the circulatory system, which will presumably form part of the subject matter of the third volume of the work. The illustrations, of which there are 320 in the first volume and 214 in the second, are exquisitely beautiful and of photographic accuracy, those of the bones especially being extremely well done. They are mostly lithographs printed in colors. In the pictures of the bones of the skull the plan has been adopted of giving each of the bones a color of its own, so that in the topographical views of the cranium one distinguishes the different bones with ease. The Basle anatomical nomenclature [BNA] has been employed for the most part, though many of the terms (except those in the section on myology) have been anglicized. The translation has been well done by Dr. W. Henry Thomas.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by H. R. M. LANDIS, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. December 1, 1906. Philadelphia and New York: Lea Brothers & Co., 1906.

THE December number of this quarterly digest is on the same plan as heretofore, and it is also up to its own high standard of excellence. In the present volume Dr. Steele considers diseases of the digestive tract and allied organs, the liver, pancreas, and peritoneum; Dr. Belfield contributes the section on genitourinary diseases; Dr. Bradford writes on the diseases of the kidneys; Dr. Blodgood devotes one hundred pages to the consideration of anesthetics, fractures, dislocations, amputations, surgery of the extremities, and orthopedics; and, finally, Dr. Landis supplies a therapeutic referendum. All of these contributions are useful, and the busy practitioner can here find whatever is of value in the periodical literature of the past year or more. Further, the judicious work of the editors of the various sections saves the busy reader the trouble of sifting the wheat from the chaff; only the former is here presented.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held March 1, 1907.

DR. JOHN F. ERDMAN IN THE CHAIR.

Hernia of the Bladder.—Dr. WM. A. DOWNES presented a man, fifty four years old, who had had a hernia for a number of years, and who was admitted to the hospital December 24 and operated on December 31. His hernia had not given him trouble until one or two years ago, when he had to get up six or seven times at night to empty the bladder. During the day he had no such trouble. The sac was opened on the upper and outer side; in so doing the lower and inner portion showed the usual characteristics of bladder hernias, a great deal of peritoneal fat. In stripping off this fat he tore a three or four inch hole in the top of the bladder. He introduced his finger and found at least two-thirds of the bladder in the hernial sac. The finger went to the trigone, and it was evident that the greater portion of the bladder was in the hernia right along. A cigarette drain was introduced and a catheter passed through the urethra into the bladder; this latter was kept in five days. The patient was discharged in three or four weeks without trouble, and without any leakage. There was a prompt healing of the wound. Dr. Downes believed that hernia of the bladder was more common than generally supposed. In three years he had had 110 adult hernias; four of these were of the bladder. One was in a femoral hernia, the other three in a direct inguinal hernia.

Case of Bilateral Goiter.—Dr. JOHN F. ERDMAN presented this patient for Dr. Frauenthal. The patient was twenty-four years old. He started general anesthesia and at the first whiff of the laughing gas she went into complete asphyxia. The operation was done then without any anesthetic, the patient feeling absolutely no pain whatever. When he removed the left lobe he found the trachea was angulated and he then removed the right lateral lobe. Evidently the parathyroids were not removed, for the patient had not suffered from myxedema at all. She also had a large fluctuating vascular growth upon the right thigh.

Dr. TOREK said that it was interesting to hear that the asphyxia was noticed before the operation. The cases in which asphyxia happened during anesthesia were usually the ones that presented asphyxia before operation. He recalled a disagreeable experience he once had in a case of carcinoma of the thyroid on which he wanted to operate. The narcosis had just begun when the patient died from asphyxia. The operation was to be done to relieve the asphyxia. Since that experience he had been hearing again and again of cases in which asphyxia in goiter cases occurred before and with the administration of the anesthetic; the inference was that if a patient with goiter had asphyxia an anesthetic should not be given.

Amputation of the Leg by Bier's Method.—Dr. A. V. MOSCHCOWITZ presented a man whose leg had been amputated by Bier's method for Raynaud's disease, with absolutely bad results, violating every rule both of commission and of omission, calling for a perfect result. The scar was upon the end of the stump and was made up of granulation and cicatricial tissue. The flaps had been made large enough, but they sloughed. The scar was adherent to the bone. The stump was absolutely painless. X-ray pictures of the stump were shown.

Myxofibroma of the Duodenum; Pylorectomy with Partial Atypical Duodenectomy.—Dr. A. A. BERG presented a man, thirty-seven years old, who had been referred to him by Dr. Basch, with a history of ulcer and with the physical signs of ulcer at the pyloric end of the stomach or first portion of the duodenum. Dr. Basch was inclined to the latter view. Inasmuch as extensive internal treatment had not yielded satisfactory results in the relief of the symptoms, Dr. Basch had proposed that operative therapy be carried out. The patient was sent to Mt. Sinai Hospital, where Dr. Berg opened the abdomen and found the pyloric end of the stomach, the first and second portion of the duodenum, the gall-bladder and under surface of the liver and head of the pancreas fused into one mass about half again as large as a hen's egg. There were numerous adhesions surrounding the gall-bladder, first and second positions of the duodenum and stomach. Some glands in the gastrohepatic omentum were infiltrated. The case promised to be a very difficult one because of the dense adhesions. The adhesions between the gall-bladder and first and second portions of the duodenum were first divided. In trying to separate the adhesions here it was necessary to separate the portal vein and common bile duct from the tumor. With sharp dissection he was able to get to and ligate the gastric and the left gastroepiploic artery, thus making it easy to approach the posterior aspect of the tumor from the gastric rather than from the duodenal side. The tumor mass was finally exposed and removed. On macroscopical examination it apparently was a carcinoma. A gastrojejunostomy was performed. The anesthesia was not well taken and the patient developed a capillary bronchitis, thus prolonging convalescence. The histological examination of the mass showed it to be a myxofibroma and probably was secondary to ulcer of the duodenum.

Dr. BASCH said that this case illustrated the difficulties of diagnosis and rather impressed upon the internist the necessity for early operation. Dr. Basch then gave the medical history of the case.

Pyloric Tumor, with Acute Dilatation of the Stomach; Pylorectomy.—Dr. A. A. BERG presented a man, thirty-six years old, a painter by occupation, who had been admitted to Mt. Sinai Hospital six weeks before. For two years previous to the present illness he had had occasional attacks of abdominal cramps, with loose movements of the bowels due to lead poisoning. There was no loss of weight, no history of syphilis or of gonorrhea. His present illness came on three weeks before his admission. The initial symptoms were intermittent burning pains across the upper portion of the abdomen. They lasted one week, and during this week there was no vomiting. The bowels were moved by enemata. After the first week vomiting set in and the bowels became constipated. The pains continued to be severe, but were relieved by vomiting or when the stomach was washed out. During the last week of illness prior to admission to the hospital the bowels had not moved and no gas was expelled. He vomited a yellowish-green fluid. On admission he was given ox gall, with the result that he passed some gas, but no fecal matter. The physical examination made by Dr. Moschcowitz showed that there was a large central prominence in the abdomen surrounded by a depressed area in the perhiphery. There was a wave and splashing sound. The stomach tube introduced produced two gallons of this yellowish-green fluid. When this fluid was removed the tumor could be felt in the epigastric region. A diagnosis was made of a pyloric tumor constricting the pylorus and giving rise to an acute dilatation of the stomach. Five days after admission operation was performed. There was found a hard nodular tumor, occupying the pyloric region of the stomach and the first portion of the duodenum. There was an extensive glandular involvement. The excision of the mass was comparatively easy. A gastrojejunostomy was performed with Murphy's button. The middle colic artery was often injured in these operations, and, if there were adhesions present, it was hard to avoid it.

Case of Fracture of the Upper End of the Radius.—Dr. CARTER S. COLE presented this patient to illustrate his paper. The patient was a man, a 'cello player and teacher,

who came to him with a condition beautifully shown by excellent plates and prints made by Dr. Caldwell, showing the head of the radius broken into several pieces, and with a quadrilateral fracture in the ulna. The only thing that could be defined by the first examination immediately after the injury was that there was a fracture of the head of the radius, a fracture of the ulna, a displacement of both bones backwards, and considerable extravasation about the joint. His first course was to restore the parts as nearly as possible to their proper position, put on abundant absorbent cotton, with a firm compression bandage, and over this a plaster-of-Paris bandage, the forearm being at a right angle and slightly pronated. His anxiety about the ulna, his fear of losing both flexion and extension, as well as pronation and supination, if any operative measure was taken, made him conclude that he would do nothing except to keep the parts in best possible position until the ulnar fracture had united; and if he then found that flexion and extension were prevented by the fragments of the radial head, he would remove the latter. Following his usual custom, he waited for six weeks, changing the plaster from time to time as the effusion got less and the splint became loose, and then, under an anesthetic, he tried flexion and extension. The adhesions yielded with very little effort and he satisfied himself that this function in time would be perfect. The accident occurred in May. In August he had already begun to play his 'cello with his orchestra, and from October until the present time he had played from four to seven hours daily. The splendid function was demonstrated by his playing the instrument before the Section.

The Adequacy of Local Anesthesia in Inguinal Hernia Operations.—Dr. JOHN A. BODINE read this paper. He said that modern surgery advised a patient with inguinal hernia to submit to operation for cure and in lieu of this curative advice the patient accepted his hernia and a truss. The surgical proposition of 90 per cent. cured, with short detention from business and small danger to life, would seem attractive for the relief of such a condition to persons who were suffering a 15 to 50 per cent. loss of earning capacity and were exposed to the danger of potential death, yet the number of trusses worn attested the universal rejection of this proposition. General narcosis, with its small but certain danger to life and its disagreeable features, presented a deterrent factor to accepting a surgical cure of hernia. If they eliminated the danger, the dread and the disagreeableness of general narcosis, they might turn a conspicuous surgical defeat into a colossal victory. In the earlier operations an effort was made to cocainize the ilioinguinal, the iliohypogastric, and the genitocrural, but it had been found that cocainization of the ilioinguinal alone, with infiltration into certain sensitive areas, sufficed for a painless dissection. The technique had been explained in previous papers. If the skin and subcutaneous tissue were properly infiltrated by a 1 to 500 warm cocaine solution, the incision down to and through the external oblique aponeurosis was totally devoid of pain. But few blood-vessels and nerve filaments were encountered in the incision to and through the external oblique, if the incision was not carried to or below the level of the external ring. At this latter point the ilioinguinal nerve expanded into many filaments and the bleeding points were numerous. It was, therefore, essential to find and cocainize the ilioinguinal trunk before incision into this level. After cocainizing the ilioinguinal at the upper limit of the hernia incision the operation in simple cases could be completed without additional analgesia and with little or no complaint of pain. Infiltration was necessary into the internal oblique around the arching fibers of the internal ring and around the sac neck during its dissection in the margin of the opening. Not one of the patients he had operated upon had given any evidence of either acute or moderate pain. None had grumbled or complained during the operation. Patients were often willing and even desirous of having the second side operated upon at one sitting. To each and every one of the double cases general narcosis was offered as a test at the second operation and refused. As the patient was flaccid, quiet and uncomplaining, there was no temptation to shorten or curtail the operation. That a solution of cocaine, amounting in sum total to any fractional part of a grain intermittently injected during an hour of time, was less dangerous than cerebral narcosis for the same time was obvious, and that it was entirely without danger to the patient was probably a fact. There was at times a set of symptoms once regarded as toxic manifestations of cocaine, sweating, pallor, and sighing, but they were purely psychic and in no way toxic. Fat presented the principal limitation to the method. The chief difficulty was in the necessary retraction for excision in a wound so deep. Age and lesions of the kidney and of the heart offered no barrier. In strangulated hernia local analgesia rose almost to the dignity of an imperative method. The added shock of an hour under cerebral narcosis, the danger from drowning in fecal vomit and the hurried decision as to whether a loop of gut should be excised or not, accentuated the advantage of a method that did not shock, which permitted the patient to control the vomit, and gave any quantity of time to decide on the circulation in the gut. There were certain advantages associated with local analgesia. It imposed upon the surgeon respect for tissues, gentleness of manipulation amounting to daintiness. Blunt dissection, tearing or rubbing the sac from the cord with gauze pads was impossible. Clean-cut dissection was necessary from beginning to end. The signal advantage of this method was the preservation of the structural integrity of the nerves in this area. Thinning, atrophy and paralysis followed division of a nerve trunk as an inexorable law, and this must to a greater or less extent follow injury to the ilioinguinal or hypogastric. This thinning or atrophy invited recurrences. A personal experience of over 400 operations for the radical cure of inguinal hernia with local cocaine analgesia formed the basis of his remarks. Since his first operation of this series no case of inguinal hernia had been operated upon under any other kind or method of analgesia. Consequently his experience embraced nearly all variations of the simple hernial protrusion and nearly, if not all, the different types of patients. In conclusion he believed that local analgesia was entirely adequate for the radical cure of inguinal hernia. In his 400 cases he had not had one instance of suppuration.

Dr. BROOKS H. WELLS, Dr. SCHLEY, Dr. FOOT, Dr. BERG, Dr. MOSCHCOWITZ, Dr. DOZANE, and Dr. DOUGLAS discussed the paper.

Dr. Bodine closed the discussion.

Fracture of the Upper End of the Radius; Some Personal Experiences with Radiographs and Plates.—Dr. CARTER S. COLE read this paper. For ten or twelve years he said he had been taught, read, and believed that fractures of the head of the radius were exceedingly rare, and that fractures of the neck of the radius were hardly possibilities. But he admitted that with the added means of diagnosis, the *x*-ray, a different conclusion could have been reached in some of the cases that passed under his observation. During his interne service at Chambers street (of sixteen months) no such fracture was recognized by any one, and a service of more than two years at Hudson street failed to bring to his notice any injury of this kind. A practically continuous service at the Post-Graduate Hospital for fourteen years did not furnish the desired and long-sought-for lesion until about three years ago; and then within a short time the several cases reported came under his observation. Dr. Cole believed that without *x*-ray examination the best they could do in the matter of diagnosis was to say that they had a fracture; to that they might add whatever seemed to be the prob-

able carpal. Their diagnosis was made on pain and crepitus upon rotation of the radius, together with pain on pressure about the radi ulnar articulation, and in individual cases there might be slight deformity. There was at first very little limitation to rotation, and there might be or not distinct crepitus or simply a click; the limitation to extension or flexion might not be worthy of consideration; but later the loss of rotation was considerable if not complete and was necessary to a diagnosis if neither a fluoroscopic examination nor an *x*-ray picture was available for that purpose. His conclusions were as follows: (1) In fractures of the head of the radius treatment by plaster-of-Paris circular bandage, the forearm flexed to a right angle and carried just a little beyond midpronation in the direction of pronation, the elbow joint having first been liberally surrounded by absorbent cotton held in place by a firm muslin bandage. Later, if sufficient interference be caused by any fixation sufficient to justify operative measures, removal of the fragments, and an effort to restore the function of the joint might be made. (2) In fracture of the neck immediate removal of the fragments, as fixation and loss of function must follow under any form of treatment. The same treatment was all the more imperative if fracture of the neck was complicated by fracture of the head. (3) If the ulna was fractured at the same time, avoid any open operative interference until a sufficiently long time had elapsed to show what permanent loss of function had been sustained and what probable improvement could be obtained without operation.

Dr. Foot, Dr. Bissell, Dr. Gallant, Dr. Morehead, and Dr. Frauenthal discussed the paper.

Dr. Cole closed the discussion.

A New X-Ray Table.—Dr. M. L. Kakels presented this. (See page 586.)

THE WILLIAMSBURG MEDICAL SOCIETY.

Stated Meeting, Held March 11, 1907.

"Some Middle Ear Dont's for the General Practitioner."—Dr. John E. Sheppard read this paper. Although the subject was an elementary one, it was frequently necessary to recall to one's mind some of the things already well known. Ear-drops of all kinds, from sweet oil and laudanum to solutions of cocaine, were to be avoided. Flaxseed poultices usually did harm. The best household remedy for earache was dry heat. If more heat was required, it was obtained by filling the external auditory canal with hot sterile water (112° to 120°) and placing the hot water bag on top of it. A patient was not to be allowed to suffer from an unrelieved earache any longer than was absolutely necessary. Early incision of the drum was the best preventive for mastoiditis, and was the most likely means to insure a speedy return to the normal hearing. A few hours after the ear began to run, pain should cease, and almost always did cease, unless the mastoid was inflamed. When the pain continued, it was necessary to investigate the mastoid for tenderness, and if this was found, the question of operation was not to be postponed too long. The late symptoms of mastoiditis (edema and redness behind the ear) were not to be waited for, as they indicated that the infection had already made its way through the external mastoid cortex, and that there was a beginning subperiosteal abscess. Waiting for the perforation of the external cortex gave equal opportunity for the perforation of the internal cortex, with the resultant intracranial complications. The occurrence of a mastoiditis without discharge from the ear was not infrequent. The appearance of pyemic symptoms in the course of, or following, a middle ear suppuration probably signified a lateral sinus infection. It was not to be overlooked that an otherwise unexplained high temperature in infants, or a sudden increase of fever in various diseases, might indicate middle ear involvement. The significance of mouth-breathing in relation to middle-ear conditions was not to be forgotten. It was in itself a symptom, not a habit. In adults it meant adenoids, deflected septum, hypertrophied turbinates, etc. In children it almost always indicated adenoids, and these were undoubtedly the cause of the majority of the ear troubles of childhood. They were also the cause of most of the cases of incurable middle-ear catarrhal deafness of later life. The remark was not to be sanctioned that the removal of adenoids was a fad. It was profitable to solve the problem of how to prevent their occurrence. Probably the lack of humidity in the atmosphere of the average living room was the cause of the development of adenoids. The use of the nasal douche in any of its forms was not to be countenanced.

Catarrh of the Upper Respiratory Tract.—Dr. Charles W. Stickle read this paper. He dwelt particularly on the suppurative conditions of the nasal accessory sinuses. Patients complaining of symptoms of hawking and spitting from a continual dropping in the throat, of difficulty of breathing through the nose, of hoarseness, deafness, of headache or other neuralgias, and of other disagreeable symptoms, were frequently treated to no avail for catarrh, and merely advised to use the nasal douche, or spray, or given astringent drugs, or sent to a high, dry climate. Their condition grew worse and worse, until they died from some sequela of an original infected mucous membrane in one or all of their accessory sinuses. Owing to the fact that in infants these sinuses were not developed, any purulent nasal or pharyngeal discharge was in the majority of cases directly due to the presence of pharyngeal adenoids. Ninety-eight per cent. of the benign purulent inflammations of the nose were summed up in the words "sinus empyema." It was the modern opinion of the majority of rhinologists that any discharge of pus, whether in the form of ozena or of ordinary pus streaks, was symptomatic of nasal accessory sinus necrosis, unless it was due to tuberculous or syphilitic ulceration of the nasal septum or lateral sinus. The pus issuing from the nasal sinuses was capable by direct contact or by means of systemic absorption, or local degeneration, of causing, first, the vasomotor inflammations in the nose itself, appearing most frequently under the form of frequent or continuous attacks of coryza, middle-ear abscess and its sequelæ, gastrointestinal derangements from the absorption of pus, thickening of the posterior wall of the larynx causing hoarseness, with subacute inflammation of the surrounding tissues, merging into a tracheitis, bronchitis, or bronchiectasis. Eye symptoms almost always accompanied sinus inflammation. What was to be expected when the pus was pent up in the accessory sinuses? First, and most to be feared, was meningitis. Epilepsy had been reported as due in some cases to sinus suppuration, with malformations and pressure of the nasal septum and turbinates. The etiology of sinus disease was clear; it resulted from the extension from the mucous membrane of the nose during the course of a simple coryza, of pneumococcic staphlycoccic, or streptococcic infections. The treatment was operative.

Early Diagnosis of Carcinoma of the Breast.—Dr. Adolph Bonner, in this paper, said that the importance of early diagnosis was seen in the fact that late surgical interference had negative results, and that 75 per cent. of neoplasms of the breast were carcinomatous. Tumefaction was the first evidence of carcinoma, which most frequently involved the upper outer quadrant. The tumor was hard, its border ill-defined and immovable in the surrounding tissues. Pitting of the skin and retraction of the nipples were early signs. Radiating and lancinating pains were sometimes early symptoms, but were never likely to occur while the tumor had acquired some size. Fibroma was found earlier in life, and though hard was well defined and movable in the surrounding tissues. The skin was not adherent. The pain was intermittent in character and aggravated at the menstrual period. Adenoma occurred at

the age of functional activity of the breast, and the tumor was well defined and lobulated, and the skin over it freely movable. Lipomata, chondromata, and echinococcus were rare. Diffuse hypertrophy was found early in life and associated with pregnancy. Gummata were rare, but when found were superficial, with early discoloration and ulceration of the overlying skin. Deep gummata underwent early breaking down and ulceration and were not well defined nor movable in the surrounding tissues. In the test of treatment it was to be remembered that iodides and mercury caused a transitory arrest in the growth of carcinoma. Tuberculous mastitis was rarely primary. In chronic mastitis the tumor was irregular and immovable, and never involved the glands. Its chronicity and the tendency to retract the nipple made it hard to differentiate between chronic mastitis and scirrhus carcinoma. Methodical physical examination included a determination of the relative size of the breasts; color of the skin, and its character, whether smooth, nodular, dimpled, drawn, or ulcerated; character of the nipples, whether on the same level, prominent or retracted, or offering the same resistance on traction. In palpation the breast was immobilized with one hand and the tumor moved in the direction of the fibers of the pectoralis major with the other, in order to determine the question of its attachment or not. At the same time consistency, size, and shape were determined. With the patient's arm adducted, the glands at the lower outer border of the pectoralis major muscle were next examined, the physician's finger tips pressing with an upward and downward motion into the axilla. Suspicion of carcinoma justified early incision.

Joint Meeting of the Chicago Medical and Chicago Pediatric Societies.

At a joint meeting of these societies, held February 27, 1907, there was a symposium on "Scarlet Fever." Dr. Ludwig Hektoen discussed the etiology and pathology of the disease, and from the facts he presented we are justified in concluding (1) that the predominant feature of the bacteriology of the throat in scarlet fever is the constant presence of large numbers of *Streptococcus pyogenes*. (2) That the overwhelming majority of the so-called complications and of the deaths in scarlet fever is due to invasion of the tissues and the blood by this microbe. (3) That in scarlet fever, even when mild, the organism gives evidence of systemic reaction to streptococci by variations in the streptococcus opsonic index, and probably also by the formation of streptococcus agglutinins. There is, therefore, no escape from the conclusion that *Streptococcus pyogenes* or some form thereof plays a most significant part in the scarlatinal process, but the author did not think that we were ready to take the final step and conclude that scarlet fever was wholly a streptococcus disease. Dr. Heman Spalding discussed the prophylaxis of scarlet fever, and said that in considering preventive measures it should be borne in mind that scarlet fever is not so generally infectious as measles or smallpox. In a community of susceptibles—those never having had the disease—about 38 per cent. will contract the disease when exposed to it, whereas in a like community about 90 per cent. would contract smallpox or measles if exposed to those diseases. As to the manner of transmission, the proof is strong that the infection can be conveyed through the milk supply. Fruit and vegetables peddled from a house where scarlet fever exists can be the means of spreading the disease. The prophylaxis of scarlet fever consists in separating the sick from the well and destroying all infection emanating from the scarlet fever patient. He emphasized strongly the point that after scarlet fever the entire house should be disinfected. Dr. John M. Dodson, in discussing the clinical history and diagnosis, presented a summary of the course and symptoms of scarlet fever as presented in 300 cases treated at the Memorial Institute for Infectious Diseases. He described the course of the usual type of moderate severity, and then noted the distinctive features of the more severe forms of the disease. Dr. M. P. Hatfield, in speaking of atypical cases of scarlet fever, said that he was distrustful of vomiting as a pathognomonic symptom of the disease. One should not rely too much on the thermometer in making a diagnosis of scarlet fever. There is a class of cases in which there is a reversal of the ordinary temperatures noted in scarlet fever, namely, the temperature is higher in the morning and declines towards the evening; whereas one expects to find the reverse in a typical case of the disease. One symptom to which he pins most of his faith is the characteristic angina. As to erythema, there are more variations in this than any single symptom found in the course of the disease. As to desquamation, a few years ago he saw a case in which there was a sloughing off of a cast of the whole upper lip. There was one form of atypical scarlatina which the physician dreaded, namely, scarlatina fulminans, which killed patients by the intensity of the toxins before the physician was able to make a diagnosis. He cited one such case. Dr. Alfred C. Cotton said that in the treatment of scarlet fever the main indications are to support the patient and to aid in the elimination of the toxins. Dr. H. Manning Fish said that one serious ocular complication following scarlet fever is disease of the optic nerve. Dr. William L. Baum said he had searched high and low for a case of Duke's disease during the recent epidemic of scarlet fever, yet he had been unable to find a single instance which tallied with the description of that disease as described by Duke in the London *Lancet*. In all cases of doubt as to diagnosis they relied on examinations of the blood at the Cook County Hospital. Dr. H. B. Hemenway referred to the epidemic of scarlet fever in Evanston. He furnished unmistakable evidence of the epidemic in that city being due to an infected milk supply. Dr. H. W. Cheney spoke of Moser's serum in the treatment of scarlet fever. The effect begins to manifest itself in from eight to twelve hours after injection, and is characterized by a marked fall in the temperature, oftentimes the temperature dropping to normal within twenty-four hours, and continuing there, or nearly so. The pulse shows much the same change. The rash, when the injection of the serum is given early, either does not develop or fades away more rapidly than usual. A most notable change is a marked betterment in the general condition of the patient. The workers in Vienna in the Kinderkrankenhaus are convinced of the value of this serum. One hundred cases have been treated with the serum. Only the severest cases are injected with it. The serum has been used there since 1900. Before that time the mortality from scarlet fever at this hospital was 15 per cent.; since then it has averaged less than 9 per cent. The mortality in other hospitals in Vienna, where the serum was not used during the period since 1900, has averaged 13 per cent. Dr. O. Tydings said the successful treatment of scarlet fever rests principally upon treating the complications which arise during the disease. Dr. H. G. Vaughan referred to an epidemic of scarlet fever in Oak Park, Ill. He thinks that epidemics of the disease can be caused by infected milk. They have had approximately 110 cases of the disease in that suburb, the cases running much the same course as those in Evanston and elsewhere, with suspicion resting upon a company that furnished infected milk. After thorough investigation, however, the members of the Health Department were unable to draw any definite conclusions implicating this milk company. Dr. A. H. Burr of Rogers Park spoke of an epidemic in that city, saying the disease appeared simultaneously with the epidemic in Evanston, and could without doubt be traced to infected milk supplied by one company of milk dealers.

New Instruments.

A NEW X-RAY TABLE.

By M. S. KAKELS, M.D.,

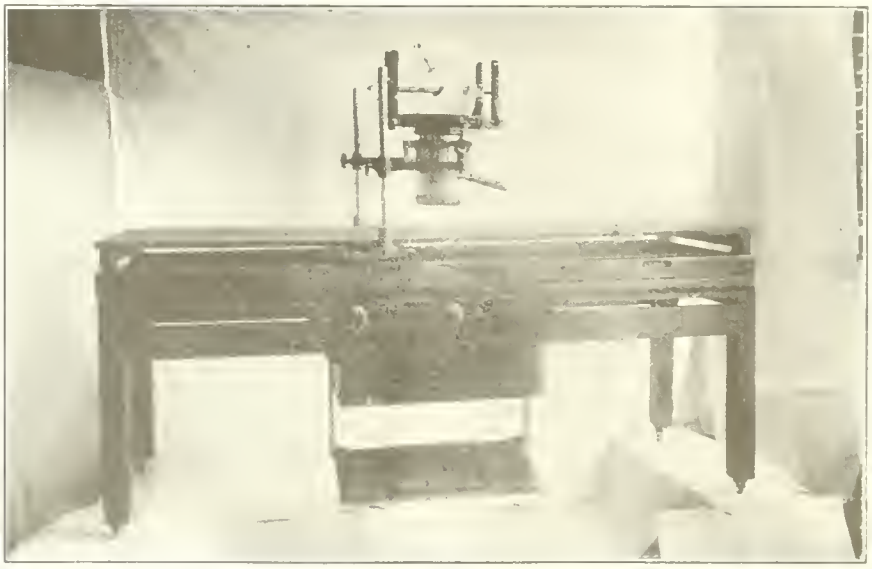
NEW YORK

ADJUNCT SURGEON, LEBANON HOSPITAL

APPRECIATING the desirability of transmitting the x-ray from below through a patient while lying in a horizontal position for fluoroscopy, radiography, or radiotherapy, I have devised for that purpose a table which I present for your inspection this evening.

The practicability of this table overcomes the inconveniences experienced in examining patients who, owing to the nature of their condition, are unable to stand, and in whom it is absolutely necessary either to fluoroscope or radiograph for diagnostic purposes. In surgical practice such cases frequently arise, and the methods heretofore used in examining by the Roentgen ray were impracticable and very limited.

The table is constructed of a strong wooden frame 6 feet 4 inches long by 26 inches wide and 30 inches high. The top consists of two covers. The upper one easily removed is made of wood 1½ inches thick and separated from the lower one by a space of 2½ inches, which is plenty wide enough to admit the compression apparatus, which is fixed on a platform to easily roll from one end to the other,



In its construction, one of the advantages it possesses is that it has combined with it a detachable compression apparatus, which can be readily moved to any position without disturbing the patient, so that any portion of the body may be compressed for radiography or radiotherapy. The other great advantage is a protected Crooks tube carrier, which plays beneath the top of the table, moving either forward, backward, or lengthwise by simply turning the knobs on the side. One can readily appreciate what a distinct advantage this is for the examiner who wishes the aid of the Roentgen ray passing through any part of the body from below.

Of great importance also for the surgeon is this arrangement by which surgical procedures can take place while the tube is in operation without any deleterious influence whatsoever to the operator arising from the ray.

The compression apparatus can thus be easily moved to any position over the whole length of the table while the patient is lying on the top cover without disturbing him in the least, and when not required may be readily rolled off.

*Presented and described before the surgical section of Academy of Medicine, March 1, 1907.

For radiographic work, the movable top has been made of wood, because it offers a firm support when the compression apparatus is employed. The lower cover or top consists of a rectangular frame, over which is tightly stretched a layer of canvas heavy enough to hold a patient of any weight. I have used canvas, as it has practically no resistance to the Roentgen ray. It also has an advantage over fiber wood in that the latter contains impurities and warps in damp weather.

The canvas top is fastened by two hinges to one side of the table, so that, when the upper wooden cover and compression apparatus are removed, it can be easily opened and kept open by stays, for the placing and adjusting the *x*-ray tube in the car which runs underneath it.

The car, containing the Crooks tube, is a wooden box 26 inches long by 14 inches wide and 12 inches deep, large enough to hold an 80 cm. tube. It is lined with a layer of special opaque material and reinforced by a layer of lead glass, which makes a most efficient method for preventing the penetration of the *x*-ray. It is mounted on a truck which moves lengthwise by rack and pinion, while the car itself moves forward and backward on this truck by a cord and pulley arrangement. These movements are controlled and regulated by the two knobs moving with the truck, which extend from the sides of the table. This double movement makes it feasible to center the tube at any spot on the patient while he is lying on the table by simply turning the knobs one way or the other, that is, either to the right or to the left. An opening on the bottom of the box, which is covered by a sheet of lead glass, permits the light to be reflected from a mirror fitted beneath, thus affording the examiner to view the condition of the tube. This mirror is automatically adjusted so that the tube is constantly in sight, no matter where the box may be. The top or cover of the tube-carrying box can be removed for the insertion of a tube of any length. It has a circular opening 4 inches in diameter sufficiently large for admitting the *x*-ray to the part to be examined.

An adjustment on either end of the box consists of a hollow metal tube, containing a spring, which clasps the ends of the Crooks tube, and, besides forming the connecting pieces for the electrical connection to the coil, afford the simplest support for it. When held thus the center of the tube is about 6 inches from the top of the canvas cover. There are many occasions and opportunities which prove the practicability of this table. A patient can easily be carried on a stretcher from his bed, and with it laid directly on the canvas or wooden top for fluoroscopy or radiography. While setting a fracture of the lower extremity, it can be fluoroscoped while the patient is on the table and immediately reexamined and compared with the other healthy limb by simply turning the knobs and rolling the car, holding the Crooks tube under either of them.

I need not dilate upon the immense advantage thus afforded in seeing any errors in malposition and thus facilitating timely correction.

This is but one of the many instances for which this table may be used.

Another practical use for which it may be employed is that by it we have a means for operating in many instances for a foreign body by the Roentgen ray while the operator is absolutely shielded from its influence. Foreign bodies such as bullets, etc., may be located in such parts of the body where on account of the nature of the traumatism inflicted patients are unable to stand.

For practicability it seems to me this table meets all the requirements for which it has been devised. I am indebted to Messrs. Wapper and Bro. for valuable suggestions in the construction of the mechanical parts of the table.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Traite des Urines. Par le Dr. E. Gerard. 12mo, 550 pages, illustrated, muslin. Vigot Frères, Editeurs, Paris.

Manuel Pratique de Massage. Par J. E. Marfort. 12mo, 310 pages, illustrated, muslin. Vigot Frères, Editeurs, Paris.

La Stérilité Chez la Femme. Par le Dr. E. Hugon. 12mo, 63 pages, paper. Vigot Frères, Editeurs, Paris.

Notions Élémentaires de Prophylaxie des Maladies Tropicales. Par R. Wurtz. 8vo, 30 pages, paper. Vigot Frères, Editeurs, Paris.

Twentieth Annual Report of the State Board of Health of the State of Ohio for the year ending December 31, 1905. 8vo, 501 pages, paper. Springfield Publishing Co., Springfield, O.

On the Synthesis of Protein Through the Action of Trypsin. By Alonzo Englebert Taylor. The University of California Press, Berkeley.

Dictionnaire de Médecine et de Therapeutique. Septième edition, 4to, 1,575 pages, illustrated, paper. Felix Alcan, Editeur, Paris.

The Diagnosis and Treatment of Intussception. By Charles P. B. Clubbe. 8vo, 92 pages, muslin. Young J. Pentland, London.

Modern Medicinal Preparations. 12mo, 92 pages, muslin. Victor Koechl & Co., New York.

Traité d'Hygiène, Publié en Fascicules. 8vo, 317 pages paper. Librarie J. B. Baillière et Fils, Paris.

The Muscles of the Eye. By Lucien Howe, M.A., M.D. 2 volumes, 8vo, 455 pages, illustrated, muslin. G. P. Putnam's Sons, New York.

American Practice of Surgery. Volume 2, 4to, 778 pages, illustrated, muslin. William Wood & Co., New York.

The Practitioner's Medical Dictionary. By George M. Gould, A.M., M.D. 8vo, 1,043 pages, illustrated, flexible leather. P. Blakiston's Son & Co., Philadelphia. Price, $5.

The British Journal of Tuberculosis. Edited by T. N. Kelynack, M.D., M.R.C.P. Vol. I, No. 1, 102 pages, illustrated, paper. Baillière, Tindall & Cox, London.

Burdett's Hospitals and Charities. 1007. By Sir Henry Burdett, K.C.B. 12mo, 963 pages, muslin. The Scientific Press, Ltd., London.

Medical Diagnosis. Fifth edition. By J. J. Graham Brown and W. T. Ritchie. 12mo, 508 pages, illustrated, muslin. Imperial Publishing Co., New York.

Manual of Clinical Chemistry. By A. E. Austin, A.B., M.D. 12mo, 278 pages, illustrated, muslin. D. C. Heath & Co., Boston.

Biographic Clinics Vol. IV. By George M. Gould, M.D. 12mo, 375 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1 net.

Biographic Clinics. Vol. V. By George M. Gould, M.D. 12mo, 399 pages, muslin. P. Blakiston's Son & Co., Philadelphia. Price, $1 net.

Zentralblatt fur Chirurgische und Mechanische Orthopädie. 8vo, 48 pages, illustrated, paper. Redigiert von Prof. Dr. O. Vulpius in Heidelberg.

Beiträge zur Diagnostik und Therapie der Geschwulste. Von Prof. Dr. H. Oppenheim in Berlin. 106 pages, 8vo, illustrated, paper. Berlin, 1907, Verlag von S. Karger.

Nierenchirurgie. Ein Handbuch fur Praktiker. Von Prof. Dr. C. Garre und Dr. O. Ehrhardt. 4to, 348 pages, illustrated, paper. Berlin, 1907, Verlag von S. Karger.

Newspaper Directory and Advertisers' Manual, 1907. 16mo, 655 pages, flexible leather. Geo. M. Savage Advertising Agency, Detroit.

Race Culture, or Race Suicide? By Robert Reid Rentoul, M.D. 8vo, 182 pages, muslin. The Walter Scott Publishing Co., Ltd., New York.

A Manual of Prescription Writing. By Matthew D. Mann, A.M., M.D. 16mo, sixth revised edition, 232 pages, muslin. G. P. Putnam's Sons, New York.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 30, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	434	221
Diphtheria	311	41
Measles	419	5
Scarlet Fever	379	17
Smallpox	—	—
Varicella	70	—
Typhoid Fever	120	15
Whooping Cough	54	9
Cerebrospinal Meningitis	28	20
Malarial Fever		
Totals	1815	328

Somatic and Psychic Electrotraumata.—Anacleto Romano calls our attention to the manifestations of epilepsy following injuries by currents of low tension and from his studies of the condition concludes that intermittent currents of low tension penetrate the brain and produce a suspension of the functions of the hemisphere; such currents traversing the brain produce epilepsy with the three phases of tonic and clonic convulsions followed by coma. The development of this condition is modified by medication introduced into the circulation as well as by the functional and chemical conditions of the brain. Apoplectiform attacks may also be produced by electric currents interrupted and increasing in intensity. They directly affect the circulation of the brain, or indirectly they paralyze nerves or segments of nerves, such as the vagus. These electrotraumata produce psychical symptoms that are very marked: among others a true form of demential paralytica, preceded by disturbances of the mental faculties. All the neuroses and psychoses may result from electrotrauma. They either predispose to neurotic and psychopathic conditions, or directly determine them. In Vienna has been established a clinic for the treatment of conditions due to the electrical atmosphere and results of the industrial trades in which it is used. The remedies to be used, after an accident by electricity, are such as lower the blood pressure, stimulate the respiration, and quiet the cerebrum. Preventive measures in the line of perfect insulation should be carried out by all companies installing electrical apparatus.—*Annali di Elettricità Medica e Terapia Fisica.*

The Etiology of the Punctiform Hemorrhages in the Mucous Membrane of the Appendix.— Bayer recounts the theoretical and practical considerations which lead him to regard the minute extravasations of blood frequently seen in the mucous membrane of appendices removed during the interval as artefacts produced in the course of the removal of the organ. It is his theory that in tying off the blood supply of the appendix the veins are usually included in the ligature, but the artery often escapes and has to be secured separately later on. In consequence of this there is a tremendous rise in pressure in the capillary network, which results in minute ruptures and hemorrhagic spots. Such lesions may be observed in appendices that have been removed in the most careful manner possible, so that it seems out of the question to consider any mechanical injury responsible for them.—*Centralblatt für Chirurgie.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 20, 1907:

SMALLPOX—UNITED STATES

		CASES.	DEATHS
Georgia, Augusta	Mar. 12–26	11	..
Illinois, Chicago	Mar. 16–23	0	1
Galesburg	Mar. 0–23	0	..
Springfield	Mar. 7–14	1	..
Danville	Mar. 13–27	3	..
Stark County	To Mar. 13	275	..
Indiana, Culver	Jan. 21–Mar. 5	6	..
Elkhart	Mar. 16–23	4	..
Indianapolis	Mar. 10–24	0	..
Iowa, Dubuque	Mar. 18	13	..
Peoria	Feb. 2–Mar. 23	62	..
Spencer	Jan. 8–Mar. 14	5	..
Kansas General	Jan. 1–31	126	..
Louisiana, New Orleans	Mar. 9–23	35	2
		7 cases imported	
Shreveport	Mar. 9–16	1	..
Massachusetts, Boston	Mar. 16–23	1	..
Michigan, Centerville	Feb. 22	36	..
Detroit	Feb. 9–23	12	..
Minnesota, General	Jan. 28–Mar. 11	295	..
Winona	Mar. 9	1	..
	Mar. 16–23	2— (Total 3	
Mississippi, Natchez	Feb. 2–Mar. 16	13	..
Missouri, St. Joseph	Mar. 16–23	15	..
St. Louis	Mar. 16–23	1	..
New Jersey, Newark	Mar. 16–23	1	..
New York, Binghamton	Mar. 16–23	3	..
New York	Mar. 16–23	3	..
North Carolina, Charlotte	Mar. 9–23	2	..
Greensboro	Mar. 9–16	1	..
Ohio, Cleveland	Mar. 15–22	1	..
Hamilton	Feb. 9–16	9	..
South Dakota, Sioux Falls	Mar. 9–23	2	..
Texas, Galveston	Mar. 15–22	1	..
Williamson Co., Georgetown included	Dec. Mar. 23	75	1
Virginia, Richmond	Mar. 9–23	2	..
Washington, Spokane	Mar. 2–16	26	1
Wisconsin, Milwaukee	Mar. 9–23	11	..
Wasau	Mar. 9–16	1	..

SMALLPOX—INSULAR

Philippine Islands, Manila	Feb. 2–9	1	
		On S. S. *Ban Yek*	

SMALLPOX—FOREIGN

Africa, Algiers	Feb. 1–28	..	2
Brazil, Para	Mar. 2–9	2	..
Rio de Janeiro	Feb. 24–Mar. 2	4	1
Chile, Coquimbo	Feb. 25	24	1
Iquique	Feb. 25	..	Present
China, Hongkong	Jan. 26–Feb. 2	9	6
Colombia, Cartagena	Mar. 2–9	..	Present
Equador, Guayaquil	Feb. 23–Mar. 2	..	4
Egypt, Cairo	Feb. 25–Mar. 4	3	1
France, Marseilles	Feb. 1–28	..	230
Paris	Feb. 23–Mar. 9	14	..
Germany, Bremen	Mar. 2–9	1	..
Gibraltar	Feb. 25–Mar. 10	5	..
Great Britain, Bristol	Feb. 23–Mar. 2	1	..
Cardiff	Mar. 2–9	2	..
India, Bombay	Feb. 12–26	..	10
Calcutta	Feb. 9–16	..	41
Madras	Feb. 16–22	..	1
Italy, Naples	Mar. 9–16	2	..
Madeira, Funchal	Feb. 24–Mar. 10	3	2
Mexico, Aguas Calientes	Mar. 9–16	..	10
Jalapa	Mar. 8–15	..	1
Mexico	Dec. 29–Jan. 26	..	66
	Jan. 27–Feb. 16	..	44
Netherlands, Rotterdam	Mar. 2–9	..	1
Portugal, Lisbon	Feb. 23–Mar. 9	11	..
Russia, Moscow	Feb. 9–Mar. 2	3	4
Odessa	Feb. 23–Mar. 2	43	7
Riga	Dec. 1–31	16	..
	Mar. 2–9	6	..
Warsaw	Feb. 2–9	..	3
Salvador, San Salvador	Feb. 9–16	2	..
Spain, Barcelona	Feb. 18–Mar. 10	..	7
Cadiz	Feb. 1–28	..	6
Seville	Feb. 1–28	..	28
Valencia	Feb. 23–Mar. 2	1	..

YELLOW FEVER—UNITED STATES

Louisiana, Mississippi River Quarantine	Mar. 20	1	..
	On S. S. *Cayosoto*, from Cuban and Mexican ports		
Texas, Galveston Quarantine	Mar. 22	3	..
	On S. S. *Basil* from Para		

YELLOW FEVER—FOREIGN

Brazil, Nichtheroy	Feb. 16	1	..
Rio de Janeiro	Feb. 24–Mar. 3	2	2
Ecuador, Guayaquil	Feb. 23–Mar. 2	..	7
Mexico, Paraje Nuevo	Mar. 8–8	1	1
Peru, Callao	Feb. 17–19	1	1
		On S. S. *Palena.*	

CHOLERA

India, Bombay	Feb. 12–26	..	3
Calcutta	Feb. 9–16	..	58
Madras	Feb. 9–22	..	19
Rangoon	Feb. 2–16	..	23

PLAGUE

Australia, New South Wales—			
Kempsey	Jan. 29	1	1
Sydney	Jan. 19–Feb. 2	12	3
Queensland—			
Brisbane	Jan. 19–Feb. 2	0	4
Port Douglas	Jan. 19–26	31	1
Brazil, Para	Feb. 23–Mar. 9	11	7
Rio de Janeiro	Feb. 10–Mar. 3	0	3
Chile, Antofagasta	Feb. 25	10	4
Egypt, Assiout Province	Feb. 7–25	12	10
Baliana Province	Feb. 23–27	20	16
Beni Souef Province	Feb. 23–24	2	1
Ismailia	Feb. 25–26	2	2
Girgeh Province	Feb. 18–27	7	5
Keneh Province	Feb. 26	2	2
Minieh Province	Feb. 25–27	3	1
Formosa, General	Jan. 1–31	165	141
India, General	Feb. 9–26	27,384	23,411
Bombay	Feb. 12–26	..	384
Calcutta	Feb. 9–16	..	17
Rangoon	Feb. 2–16	..	105
Mauritius	Jan. 24–Feb. 14	27	18
Peru, Chepen	Feb. 14	..	1
Chiclayo	Feb. 14	5	4
Choiseca	Feb. 14	13	6
Lambayeque	Feb. 14	3	1
Lima	Feb. 14	2	..
Pacasmayo and San Pedro	Feb. 14	3	3
Trujillo	Feb. 14	1	..
Viru	Feb. 14	3	3
Russia, Cronstadt	Mar. 5	1	1
		(Laboratory Plague.)	

CHOLERA—INSULAR.

Philippine Islands, Manila	Feb. 2–9	10	5

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Original Articles.

TREATMENT OF ACUTE CARDIAC AFFECTIONS IN CHILDHOOD.

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The great importance of cardiac diseases in childhood is evident to every practitioner, and under this term must be included not only affections of the pericardium and endocardium, but also those of the myocardium. By the physician engaged in private practice, however, the subject does not always meet with the attention it deserves, because his opportunities for observing the condition must necessarily be limited, his cases being sporadic only. But in the eyes of the hospital physician the disease assumes a much more important and serious aspect, for he meets not only with the acute cases, but also those in which there have been repeated attacks, the patients being brought to the hospital in an almost helpless state with extreme dyspnea, dropsy, and total cardiac insufficiency. Then, notwithstanding an occasional almost phenomenal improvement, the patient will sooner or later succumb to the incurable malady. That at least has been the experience in Germany.

The prevalence of the disease in early years may be indicated by the statistics furnished by the Kaiser and Kaiserin Friedrich Hospital during the administrative year from April 1, 1905, to April 1, 1906. A total of 2,528 children were under treatment in this institution during the period in question, and of these 23, or 0.9 per cent., were admitted for the treatment of acute or chronic cardiac disease. This does not seem like a large number, but we must add 28 cases of acute articular rheumatism, in which without exception the heart was involved, as well as 15 cases of chorea in which there were likewise cardiac complications, so that the total amounts to 66, or 2.6 per cent. And this does not include the cardiac complications occurring as sequelæ of diphtheria or scarlet fever. All in all, we find here an imposing array of cases which, on account of the immediate danger as well as of the possibility of permanent harmful after-effects, merit more serious attention than has been accorded to them. And this is the experience of but one hospital. Variations will undoubtedly occur because the development of articular rheumatism and chorea depends, although probably not so intimately as was formerly believed, to a considerable degree on temperature and climatic variations, humidity, and rainfall. The figures stated may be taken, notwithstanding these exceptions, as a fair average of the proportion of cardiac affections to the other diseases of childhood, if we exclude here the infectious diseases referred to above.

This experience has led me to pay particular attention to the condition under discussion, and as a result a number of papers on polyarthritis, pericarditis, and endocarditis have been published, partly by myself and partly by my assistant, Lachmanski.*

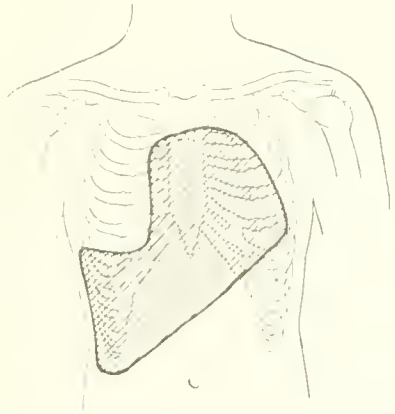

Fig. 1.—Erich Karp; cardiac area, November 28, 1907.

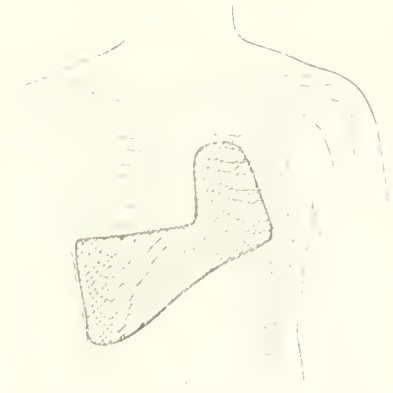

Fig. 2.—Erich Karp; cardiac area, January 8, 1907.

In the present paper I have no intention of taking up the discussion of the extensive field of the therapeutics of cardiac diseases, but will confine myself to a description of the course and the treatment of the acute form of the disease, my remarks being based mainly on a number of noteworthy cases in which pericarditis and endocarditis developed as complicating features of a polyarthritis.

Case I.—Erich Karp, age seven, was admitted to the hospital on November 27, 1906. The boy had pneumonia in early childhood, from which he made a good recovery. When three and a half years of age he had his first attack of articular rheumatism with cardiac complications. About eight days pre-

*Baginsky: *Berliner klinische Wochenschrift*, N. 48, 1898, and No. 49, 1904. Lachmanski: *Archiv für Kinderheilkunde*, Vol. 28, 1900.

vious to admission the boy began to complain of vague pains and headache, and developed a tender swelling of the right knee. There was also pain in the chest and insomnia. Examination at the time of admission showed a pale and poorly developed boy, with considerable dyspnea and occasional marked cyanosis. The right knee was swollen and tender, and the leg was held in a slightly flexed

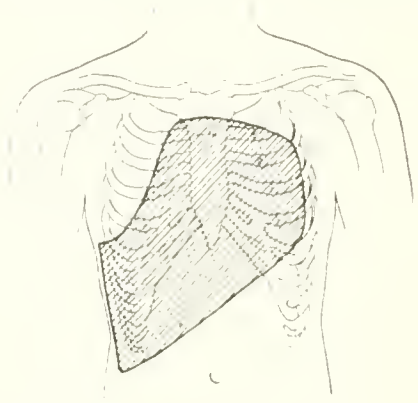

Fig. 3.—Alex. Schledermann, cardiac area, November 29, 1906.

position. The remaining joints were free. Temperature 38° C., pulse 80, regular, with normal tension. The pulmonary percussion note was normal, with the exception of a circumscribed area at the left apex, where it was slightly tympanitic. The respiratory murmur was vesicular, but slightly accelerated. The area of cardiac dullness extended beyond the right edge of the sternum and merged with the upper border of the liver dullness. Above it reached to the level of the second rib and curved down to the left to the anterior axillary line at the sixth rib. The heart sounds could not be distinguished over this area of cardiac dullness, and during the systolic and diastolic periods two loud friction sounds were audible with a maximum intensity over the sternum and at the level of the third and fourth ribs. The apex beat could not be determined. Pulse 100 to 130, regular, not intermittent; temperature 39.5° C. The liver dullness extended about 3 cm. above the costal arch. The area of splenic dullness was not increased. The urine contained a small amount of albumin and a few hyaline and granular casts. The diagnosis was bronchopneumonia, pericarditis with effusion, and nephritis (?). The treatment consisted of an ice bag over the cardiac region with ichthyol ointment and the application of a salicylic acid preparation to the knee joint. Acetylsalicylic acid was given in 0.5 gram doses three times daily. Some improvement took place during the next two days, the pains diminished, and the temperature varied from 37° to 39.5° C. The dyspnea was not marked, but still noteworthy, and the heart action was moderately strong, pulse from 90 to 120. On the other hand, the dullness extended over the lower portions of the thorax in the back to the lower angles of the scapulæ, and there was a diminished respiratory murmur with loss of vocal fremitus.

There seemed to be in addition an increase rather than a diminution in the area of cardiac dullness, and the urine amounted to only 350 to 400 c.c. *pro die*. The acetylsalicylic acid was stopped and soluble digitoxin given internally twice daily in doses of ½ c.c. Inunction with mercurial ointment was also practised, 1 gram three times daily. The ice bag was continued. The boy did not apparently improve much; he continued pale and weak, there was more or less dyspnea, and the temperature varied between 38° and 39.5°, being usually about 39° C. The digitoxin seemed to have little effect on the pulse, which remained around 110 to 120, and of the same general character. On December 1 the digitalis preparation was stopped and potassium iodide solution (3:100) given three to four times daily in teaspoonful doses. On the next day the temperature dropped to 37.25° C. and there occurred a marked change in the general appearance and condition. The dyspnea diminished, although the areas of cardiac and pulmonary dullness were not affected, and the rasping systolic and diastolic murmurs continued unchanged. The euphoria and defervescence continued during the administration of the potassium iodide and the mercurial inunctions, and during the following days the temperature sometimes fell below the normal. By the 10th of December it was possible to make out not only a diminution in the area of cardiac dullness, but also an entire absence of the murmurs. At the apex a blowing endocardial murmur could now be heard. The thoracic dullness behind was also markedly reduced. The urine contained only traces of albumin and isolated casts. The improvement continued, and on January 9 the area of cardiac dullness had reached practically its normal boundaries, and only a weak systolic murmur was heard at the apex. The urine was now free from albumin. The respiratory murmur and percussion note were normal, the pulse was 96 and regular. The boy's general condition was excellent, and he had gained 2.5 kilos in weight. He was dismissed as practically cured with only a remnant of endocardial disturbance.

Case II.—Alex. Schledermann, age thirteen and a half years, was stated to have had a weak heart since his sixth year. The boy was admitted on October 31, 1906, with swollen and painful joints. He was poorly nourished and anemic, weak, and apathetic. The administration of acetylsalicylic acid relieved the pain and swelling of the joints. Then, on the 29th of November, the boy became suddenly feverish, and his appearance indicated collapse. Examination disclosed a marked increase in the area of cardiac dullness, which extended to the second rib above and beyond the right border of the sternum to the extent of 4 cm. At the level of the sixth rib this dullness merged with that from the liver. The apex beat was palpable in the fifth interspace about 2 cm. to the

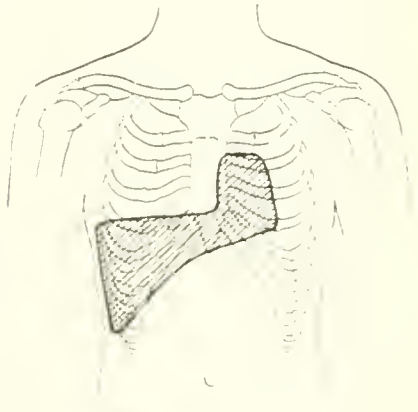

Fig. 4.—Alex. Schledermann, cardiac area, January 7, 1907.

left of the mammary line. A systolic murmur could be heard at the apex and over the mitral area. Over the lower third of the sternum could be detected a post-systolic and diastolic friction sound. There was severe pain over the entire cardiac region; the pulse was 120 to 130, with considerable tension. The urine contained hyaline casts, red blood cells,

leucocytes, and granular epithelium, the total quantity being 800 c.c., with a sp. gr. of 1,015. The liver dullness extended about 4 or 5 cm. above the costal border. Dullness and diminished respiratory murmur were evident over the entire left side of the thorax posteriorly to the angle of the scapula. A teaspoonful of potassium iodide solution (3:100) was given every three hours and inunctions with 1 gram of mercurial ointment three times daily. The patient's general condition did not undergo any appreciable change during the next few days. He remained very pale and seemed exhausted. In addition to the other medication he was then given ½ c.c. of the digitalis preparation used in the former case three times daily, which gradually effected a diminution in the frequency of the pulse rate (100 to 110). Iron was also administered, and after a time, with the treatment noted, the more serious symptoms subsided, and the condition of apathy and collapse disappeared. By December 18 the area of cardiac dullness had undergone considerable diminution, particularly on the right side, and at the apex a saw-like murmur could still be heard. At the base a systolic murmur was evident and the second pulmonary sound remained accentuated. The improvement from now on was rapid, the cardiac dullness as well as that over the posterior aspect of the thorax gradually subsiding. On December 29 the boy, who had become bright and cheerful, was allowed to leave his bed. The apex murmur could still be plainly heard. On January 9 the patient was dismissed as practically cured, with the evidences of a slight mitral insufficiency and an area of cardiac dullness about normal in extent. There were adhesions present in all probability between the heart and the pericardium, as shown by the physical signs obtained on changing the position of the patient.

These two cases are not, of course, particularly noteworthy, and agree in their main features with those of articular rheumatism complicated by acute cardiac lesions. Their instructive character is dependent entirely upon the therapeutic aspects.

In the first case the pericarditis dominated the clinical picture. The friction sounds showed that in addition to an exudate we had to deal with the formation of adhesions between the heart and pericardium. The administration of acetylsalicylic acid seemed effective in controlling the polyarthritis, but was entirely without effect on the endo- and pericarditis. The application of an ice bag, although agreeable enough to the patient, seemed to have as little effect in reducing the inflammatory symptoms as the ichthyol ointment or digitalis. The patient in fact was placed in mortal danger by the dyspnea and the threatened cardiac collapse. A certain and rapid improvement did not take place until the combined administration of mercurial inunctions, and potassium iodide was instituted. This is a combination which was formerly rather in disfavor, and even feared on account of its possible chemical incompatibility, but has been shown by actual experience to be perfectly harmless in its application. Of all the remedies which I have hitherto employed in the treatment of acute inflammatory diseases of the heart, the pericardium, the pleura, and even of the lungs, I am compelled to acknowledge potassium iodide as the most efficient. Its effects in pericarditis seem to be increased by the combination with mercurial ointment, and in the condition of complete helplessness which the practitioner is often compelled to acknowledge in the presence of the rheumatic cardiac diseases, this method of treatment may safely be commended. The endocarditis which manifests itself in these cases by very stormy symptoms may be effectively combated by the ice bag and the internal administration of digitalis. Of course these methods are only of value in overcoming the immediate danger, and thus far I cannot say with certainty whether they are able to prevent the production of a chronic endocarditis or chronic valvular disease.

The second case has led practically to the same results as the first. Here we had to deal with inherent cardiac weakness, to which there was added during a recurrent attack of polyarthritis an endocarditis and pericarditis. Although mild at first, the pericarditis, with an effusion added to that from the pleura, constituted a serious menace to the life of a boy already in a very weakened condition. In this instance also the combined use of mercury and potassium iodide showed itself a most efficient remedy. The administration of digitalis was indicated by the endocardial condition, and its efficacy appeared to be undoubted. The action of the potassium iodide is worthy of particular attention, for the surprisingly rapid absorption of the serous exudates can hardly be regarded as spontaneous, and must in all probability be attributed to the effect of the iodide.

There are two questions which must be considered in regard to this subject. (1) Should any resort be had to venesection at the height of the disease in these cases; and (2) Is early puncture with the needle indicated where an extreme degree of pericardial effusion is present? Venesection, formerly in great favor but later abandoned, has recently been revived by some English authors as a therapeutic procedure. I have used the method in two cases, one of acute endocarditis complicated with pericarditis, the other of acute cardiac dilatation with violent heart action, with some success as regards the pain and overactivity. The disease itself did not seem to be in any way affected, and the pain and dyspnea returned. The second case ended fatally. On account of this experience I feel that I can scarcely recommend the abstraction of blood in these cardiac cases as a safe or efficient procedure, for, aside from the difficulty of controlling subsequent hemorrhage, there is also the danger of septic infection from the wound caused by the leech bite.

Exploratory puncture of the pericardial sac is undoubtedly indicated in certain cases where the diagnosis of a large pericardial effusion can be made with accuracy. This, however, is sometimes a very difficult matter, particularly in children, where the condition may be confused with acute cardiac dilatation. When the dyspnea is extreme, the pulse small, frequent, and irregular, the value of aspiration is undoubted. In the second one of our cases I would certainly have resorted to this procedure if the exudate had not been so quickly absorbed under the influence of the potassium iodide. In those cases where the pericardial exudate is combined with an even larger one of the pleural cavity, it is advisable to combat the dyspnea by doing a paracentesis of the chest before that of the pericardium is attempted. It will often be found that the dyspnea disappears, and then puncture of the pericardium is rendered unnecessary.

Another remedy which has lately been revived by the French writers is the application of vesicants over the cardiac area. I do not desire to recommend this procedure, which is not only cruelly annoying and distressing for children, but is inefficient. There is also a danger to life in using this method, for the wounds caused may become the site of a diphtheritic infection, as has been shown in a

number of instances. The suggestion should therefore be abandoned.

Both of our patients showed evidences of renal irritation—albumin, blood, and casts in the urine. A proper degree of diuresis should therefore be provided for, which may be accomplished by the administration of the alkaline mineral waters without the use of stronger diuretic measures. The latter may be reserved for certain extreme cases. Cases of chronic heart disease furnish entirely different indications and demand the application of cardiac tonics (digitalis, caffeine, strophanthus, valerian) in combination with diuretics. I have included only those acute conditions in which the pericarditis occupied the foreground of the clinical picture, and shall discuss the chronic cardiac diseases of children at another time.

LOCAL THERMOTHERAPY.*

By W. GILMAN THOMPSON, M.D.,

NEW YORK.

THE topical application of heat and cold in the treatment of disease processes is one of the oldest known therapeutic measures, but owing to the progress of physiology, pathology, and the surgery of localized pyogenic inflammations, there has been, of recent years considerable modification of the views regarding its efficiency. Thus it may be stated in general that while the development of peripheral local thermotherapy has been greatly advanced by improved technique in combined methods of douching with massage and by the so-called "baking" processes, etc., there is, on the other hand, increasing scepticism as to the possibility of modifying deep-seated visceral congestions, inflammations, or hemorrhages by means of any external local thermic applications. Is there any use in attempting to control the hemorrhage of typhoid fever by an abdominal cold coil, to control pulmonary hemorrhage by an ice bag, to modify the course of a pneumonia by poultices or cold compresses, or the course of appendicitis, or an otitis media, or a quinsy, by the laying on of cold? Can the function of the kidneys be stimulated by lumbar poultices, or the course of meningitis be influenced by an ice cap at the head or neck? Is there any real value in any of these measures other than the fact that they sometimes, though by no means invariably, contribute to the comfort of the patient. And if, on the contrary, they annoy him, should their use be nevertheless continued? Being unable to find any satisfactory experiments determining the penetrating power of heat and cold locally applied to the surface of the body, I undertook such a series of experiments upon animals some years ago while working in a physiological laboratory. I have never published them in full, as they were made primarily for my own guidance, but I have supplemented them from time to time by further researches upon the human body, and believe that they possess considerable interest as well as practical importance in connection with the present discussion.

In conducting the experiments I used special thermometers, similar to those employed in thermostats, and used also by beer brewers. These thermometers are about ten inches long, with slender stems and small bulbs, a little larger than those of the ordinary clinical thermometer. They possess a wide range of index, and are not self-registering, so that fluctuations alternating both above and below the normal body temperature are promptly observable. As the bulbs are small, they are quickly influenced, and as the stems are long they may be deeply inserted into cavities in an animal or the human body. In experimenting with poultices three thermometers were simultaneously used, one inserted in the poultice itself, one placed between the poultice and the skin, and one in some cavity of the body immediately beneath the poultice. In anesthetized animals, punctures were made into various cavities of the body, and thermometers inserted at various depths beneath the site of application of the poultice. In the living human subject thermometers were inserted in the buccal cavity, in the bladder, in the rectum high up, and deeply into the thorax in several cases of post-operative empyema with long sinuses. In the human cadaver punctures were made in the abdominal wall and thorax, and thermometers inserted and held against the inner surface of the wall, while poultices, ice bags, ice, coils, etc., were applied in alternation immediately external to the thermometer bulbs. The results were in all cases most striking, and proved that so long as the normal peripheral circulation is maintained, neither extremes of local heat or cold possess penetrating power of any practical importance whatsoever. In other words, the thin layer of blood in the cutaneous or subcutaneous circulation passes along with such rapidity as to constantly remove any thermal units, so to speak, and prevent deeper penetration. As soon as an animal is killed, however, and the circulation ceases, or if the experiment be tried upon the human cadaver, extremes of both heat and cold acquire considerable penetrating effect. So promptly does the peripheral circulation act in dissipating or neutralizing external local heat or cold that the thermometer placed between the skin and the poultice or ice bag shows much less change than might be expected. (In all the experiments herein recorded the Fahrenheit scale was employed.) A poultice made by adding boiling water to flaxseed meal usually cools down to about 140°-145° before it can be applied to the patient. If the mixing bowl be previously heated, and the meal itself be warmed, a poultice can be made as hot as 160° or 165° or more. Patients vary much in their ability to tolerate external local heat, and there is, moreover, much difference on the various parts of the body. Usually a hotter poultice can be borne over the face than elsewhere, and here a temperature of 150° may be endured, but most persons find a heat much above 140° uncomfortable, and some cannot endure more than 125° or 130° on the thorax. Poultices made of Indian meal or boiled mashed potatoes retain their heat somewhat longer than flaxseed. As ordinarily applied by trained nurses, a flaxseed poultice loses about 20° of heat in the first half hour, starting at 140°, and the other varieties mentioned lose about 15°. The addition of sweet oil keeps the poultice pliable, but does not materially affect its heat radiation. The ice water coils, which are referred to in these experiments, were made with about 11 feet of rubber tubing fed from a pail of iced water. After running through such a tube, the water temperature is usually about 38°. A thermometer placed between the skin and the coiled rubber tubing registers on an average 58°, or between the skin and poultice 105.5°. At the normal body temperature the total heat units contained in a human being weighing 140 pounds, would be nearly 14,000 as compared with those of a flaxseed poultice weighing one pound at 140°, which would contain only 140 units. Hence, the total heat of the poultice is inappreciable compared with that of the human body.

* A paper read before the Practitioners' Society, March 1, 1907.

In an anesthetized dog a thermometer was pushed into the lung and a poultice at 146° was placed over it on the outer surface of the shaved chest wall. At the end of 25 minutes no effect whatever was produced on the internal temperature. In another animal a hotter poultice at 160° was applied, but the lung temperature was raised only 0.6°. When an ice water coil was substituted for the poultice, the lung temperature was made to fall 1.8° in 25 minutes. When the dogs were killed, however, the lung temperature was made to rise 5° with the poultice, and to fall 15° with the coil. Similar results were obtained by placing the thermometer within a dog's abdomen and making thermic applications over it on the outside. In all the experiments of this nature it will be observed that the topical application of cold produced a relatively greater effect than that of heat. This is doubtless due to the fact that the source of heat, the poultice, is steadily and rapidly cooling off, whereas the source of cold, the ice water, remains constant. These experiments were made in 1890 before the days of the electric heating pads, now so commonly used, in which the source of heat supply remains a constant quantity.

Prolonged ether inhalation is apt to lower the general body temperature in dogs. In one animal, after an hour's continuous ether inhalation, the intraabdominal temperature fell from 101° to 97°. A poultice at 150° was then applied over the thin abdominal wall (which was not more than 1-3 inch thick). A thermometer inserted in the abdomen and pressed close beneath the poultice showed a rise of 5.5° F. in temperature, but held one-half inch deeper, *i.e.* away from the abdominal wall, it only recorded an elevation of one degree. The intestinal capillaries were carefully studied during the experiments, but neither very hot poultices (150°) or very cold coils produced the slightest appreciable effect upon their color or caliber. A single exception occurred in the case of a dog with a very thin abdominal wall. The hair was shaved over the abdomen, and, after application of a poultice at 168°, considerable congestion was apparent in a coil of intestine immediately beneath the poultice. This degree of temperature, however, could not be endured by man, and could only be tolerated by a dog when anesthetized. In the same animal prolonged application of an ice-water coil produced no visible effect on the intestine.

In an anesthetized dog a portion of the trachea was exposed to view, while, in alternation, poultices and ice bags were applied over the animal's neck and also over the thorax, but there was no visible evidence of either congestion or of blanching of the capillaries of the tracheal mucosa.

In another anesthetized dog a small glass window was inserted in the thorax in an aperture made by excising a portion of two ribs. The window was made with a double flange, which held it in place, when the skin was hermetically closed around it. The air which entered the pleural cavity was aspirated out, and the lung then expanded against the window. The dog's lung is of a delicate pink color, easily showing variations in tint depending upon fluctuations in blood supply. Through the glass window it was possible to observe the lung under practically normal respiratory conditions while hot poultices and ice coils were applied in alternation to the overlying thoracic surface. No changes of any kind were perceptible in the appearance of the lung, even when rapid alternation in extremes of external temperature were made, or when a poultice was placed on one side of the chest and an ice coil on the other. Variations in the rate of breathing were sometimes observed, due to the reflex stimulation induced by sudden changes in temperature. The color of the lung surface was considerably modified, however, by varying the quantity of ether inhaled. These experiments were repeated upon several animals with uniform results, and they make it difficult to believe that cold applications to the thorax can ever materially influence pulmonary hemorrhage.

To determine the transmission of heat through the cheek, as when a poultice is applied over an inflamed gum, the following experiments were made:

I.—Temperature inside of cheek, 97°. A poultice at 152° was applied for 15 minutes, when the temperature of the inner surface of the cheek rose 1.7°.

II.—Temperature inside the cheek, 97.8°. Poultice at 160° applied 15 minutes; internal temperature rose 0.6°. During both these experiments the temperature of the poultice fell 30° in 15 minutes, although it was well protected by towels.

III.—Temperature inside the cheek, 98.6°. Poultice at 150° applied for half an hour; temperature rose in mouth 0.5°. A thermometer placed between the poultice and the outer surface of the cheek recorded only 105.6°, although the thermometer in the center of the poultice registered 150°. The gum appeared slightly reddened beneath the poultice on the affected side. A poultice at 160° applied on the outside of the neck for some minutes produced no appreciable effect upon the color of the mucous membranes of the larynx or pharynx, but when ice was applied directly afterwards, decided pallor of the mucosa of the posterior pharyngeal wall and base of the uvula was apparent. An immediate reapplication of the poultice produced no further change, the mucous membrane remaining pale for a considerable period.

In a patient having a deep, straight empyema sinus, I was enabled to insert a thermometer bulb eight and a half inches into the thorax. The thermometer registered 99.8°. After 15 minutes' application of a poultice of 140° over the adjacent thoracic wall, the lung temperature rose only 0.4°. An ice poultice, made of pounded ice mixed with flaxseed meal to prevent too rapid melting, was then applied. After 15 minutes the lung temperature was absolutely unaffected.

In a second case of post-operative empyema, a thermometer was inserted through the sinus one and a half inches into the thorax. A poultice at 144° applied externally raised the temperature only 0.6° after 20 minutes.

Several years ago I happened to have three women patients in hospital, who for various reasons had worn large cold coils over the abdomen and pelvis for several days almost continuously. Each one developed a marked cystitis, although neither one had been catheterized or had gonorrhea. I was led to wonder whether this occurrence was a mere coincidence or whether the cold had in any manner reduced the resisting power of the bladder. I therefore inserted thermometers in the bladders of several female patients and applied externally both poultices and ice coils *seriatim*. In one case an hour's application of the coil over the pelvis reduced the internal bladder temperature only 0.6°. In a second case there was a variation of only 0.2°, which, moreover, proved to be wholly independent of all external applications. It does not seem possible, therefore, to directly transmit either heat or cold to the bladder by the means above mentioned. In the bladder there is not alone the circulation in the vesical wall, but the constant entrance of warm

urine to be reckoned with as factors in neutralizing external local thermic applications.

In seven women who were given vaginal douches at a temperature of 114° to 116° the maximum rectal temperature was 3° higher immediately after the douche than before, but the average elevation was only 1.6°, showing that even as thin a layer of tissues as the rectovaginal wall suffices, owing to its high degree of vascularity, to prevent local heat accumulation in any marked degree.

The question to what extent the heart may be influenced by local external thermic applications is of considerable importance. If a neurotic patient with palpitation be told to place an ice bag almost anywhere on the body and lie down and keep quiet, the heart action will be slowed, and it is not well to attribute too much importance to the ice bag, which may have a purely psychic effect. There are cases, however, of true angina pectoris in which the pain is mitigated by placing a hot poultice over the precordium, and there are cases of tachycardia and of pericarditis in which undoubted relief, both of pain and rapid heart action, seems to be produced by the continued application of cold to the precordium, but there are also many cases of tachycardia in which cold seems to produce no effect. If such applications prove of use clinically, they are certainly harmless, and are desirable, no matter what may be the theory of their mode of action. It is nevertheless interesting to speculate upon this matter, and it is not my belief that local heat or cold is ever made to reach the heart, or even pericardium directly, but only to exert indirect reflex nerve excitation or inhibition through the cutaneous nerves.

Experiments were made to determine to what extent the stomach is chilled by drinking ice water. In one patient who swallowed a tumblerful of iced water at 37°, the water, after being recovered with a stomach tube in 5 minutes, was found to have a temperature of 76°. In another patient water at 36° was allowed to remain in the stomach for 10 minutes, when, upon withdrawal by syphonage, the temperature registered 90°. In a third case water swallowed at 35° was recovered in 2½ minutes at 70°.

In marked contrast with the failure to modify the deep internal temperature of organs in the living body are the results of the same topical applications to the cadaver. A thermometer was inserted beneath the abdominal wall in a cadaver, and a poultice applied externally over it. Although the poultice used was not very hot—only 114°—within half an hour the intraabdominal thermometer showed a rise of 14°. When a cold coil was applied under similar conditions, using water at 36.5°, the intraabdominal temperature fell 15° in the same period, and continued falling for some time thereafter. No other result would of course be expected, but it is instructive to note the relatively rapid rate of heat transmission through dead tissues in distinction from the living.

The chief interest of these experiments concerns the common employment of topical cold for supposed influence in arresting deep internal hemorrhage, from the lungs, the stomach, or the intestine, as in typhoid fever. Clinically, I have never been convinced that the use of ice bags, ice poultices made with flaxseed, cold wet compresses, ice coils, etc., was of any value whatever, beyond the fact that they may be somewhat soothing to the surface, and to balance them in position the patient must lie quiet upon the back. Rest, and possibly the morphine commonly given in such cases, are the real factors, and from experimental observation I am convinced that topical applications of cold can never modify the caliber of deep-seated vessels sufficiently to exert any astringent effect. In the great majority of these cases the hemorrhage ceases spontaneously when the blood pressure falls sufficiently low, or the blood stream is retarded. Theoretically, the depletion of peripheral blood-vessels by cold would tend to raise internal blood pressure, and thus favor the hemorrhage, but practically this also is an insignificant factor. Similarly the swallowing of cracked ice, for control of hemoptysis or hematemesis is useless, for the ice is melted in the mouth, and the ice water, in its slow passage through the esophagus, is warmed by the blood-vessels long before it reaches the stomach. It may serve to allay somewhat the patient's anxiety if he shares the popular faith in its efficacy, but it is without scientific reason. In situations where heat can be directly applied to the bleeding surface, as, for example, the nasal mucosa, it is well known that to produce any astringent effect a temperature of at least 110° or 112° must be employed, lesser degrees of heat tending to favor continuance of the bleeding. Similarly, to successfully control oozing of blood from the surface of the skin or mucous membranes, moderate degrees of cold are of little value, but ice itself must be employed.

In all the foregoing experiments it has been shown that a deviation of onehalf to one degree from the normal is all that can be obtained under most favorable conditions, when deep-seated vessels are expected to be influenced by external local thermotherapy. Such trifling temperature reactions cannot be believed to influence the caliber of capillaries, or the coagulation of blood. Hemorrhage from the uterus presents of course an entirely different proposition, for the hemostatic effect of hot water or of ice within this organ depends chiefly on the stimulation to the uterine muscle to contract.

With regard to the common practice of poulticing the lumbar region to relieve congestion of the kidneys and favor diuresis, it may be similarly argued that these organs lie too remote from the surface to be affected by any degree of heat penetration. Clinically, I have never seen results from such treatment which were not to be traced to some other factor.

As regards pneumonia, the articles claiming "cures" by either continued poulticing or local refrigeration, which were so common in medical literature fifteen or twenty years ago, have well nigh ceased to appear altogether, doubtless owing to a broader conception of the pathology of the disease. In cases with severe pleuritic pain, they unquestionably often give much relief to the patient, and in such cases their use is desirable. Although they possess some reflex effect in alleviation of pain, they are absolutely without influence in modifying the course of the disease.

The use of heat or cold to accelerate or abort deep-seated pus formation is now generally regarded as of much less importance than formerly. An ice bag may relieve the pain of appendicitis, and aid in quieting the patient, but it is not to be regarded as a factor worthy of any consideration in checking a suppurative process, and to make use of it to temporize, may prove highly dangerous for the patient. The same is to be said of the former practice of applying poultices to draw deep-seated pus to an outward focus, while the patient is becoming daily more septic.

In depreciating the value of topical thermotherapy for deep-seated hemorrhages, congestions and inflammations, it is by no means intended to reflect

upon the value of such treatment for the relief of visceral pains. To do so would be to oppose universal experience. Most certainly the pain of pleurisy is relieved by local hot or cold applications, as the case may be, just as gastralgia and enteralgia and the various abdominal colics are relieved and often cured by a poultice or hot water bag. But such relief is quite apart from any question of vasomotor influences, through direct caloric transmission, and is explainable rather upon the obscure reflex relationship between the cutaneous nerves and the nerves of the viscera most nearly related to them topographically.

I have stated that while the modern view of local thermotherapy tends to lessen its importance in the treatment of certain deep-seated visceral diseases and disorders, it is rapidly gaining importance in the treatment of peripheral lesions. Here the conditions are altogether different, for not only may the cutaneous sensory nerves be affected, but the underlying vasomotor nerves, the caliber of the vessels, the local temperature of the blood, the sweat glands, and the muscles and ligaments, are all within the immediate reach of direct thermic influences, which are known to modify local innervation, nutrition, and functional activity to a phenomenal degree. Moreover, this peripheral treatment is greatly reinforced by such adjuncts as local massage and the mechanical stimulus of pressure, as when the alternating hot and cold douche is given with scientifically adjusted force and combined with mechanical manipulations.

It is a matter of astonishment and regret that so few of our large general hospitals have thus far made any provision for methods of treatment, which are proving of increasing usefulness as they are better understood. In many a hospital in this city the sole bathing outfit for a large general ward consists of a small tub placed against the wall, usually in a water-closet—an arrangement as inadequate as it is unhygienic and unesthetic! A very large class of patients can receive no satisfactory treatment in the general hospital ward, such as cases of chronic and subacute rheumatism, arthritis deformans, local neuritis, chronic gout, gonorrheal arthritis, a variety of muscular atrophies and dystrophies, sciatica, lumbago, neuralgias, hemiplegias, besides a variety of surgical injuries, etc., because what they really need is not to be put to bed and given potassium iodide, but a thorough course of local thermotherapy combined with or rather including hydrotherapy, massage, and other manipulations, together with good fresh air and all-round hygiene. The strongest stimulation of peripheral nerves is often best obtained through the rapid alternation of extremes of temperature, combined with mechanical shock such as that communicated by a stream of water under carefully graded pressure. To accomplish such treatment special apparatus is needed wherewith the temperature of the water used may be rapidly changed and accurately measured, at the same time that the douche stream may be modified in form, as well as in force.

No modern foreign general hospital is now regarded as complete without a large establishment comprising a series of rooms fitted with every kind of apparatus for douching under modified pressures and temperatures, applying local and general hot-air baths, electric light baths, steaming, local sand baths, massage, and vibration, etc., all under the manipulation of well-trained attendants. Anyone who is familiar with the results which such methods are capable of yielding cannot but regret that our own facilities in this direction are so meager.

In conclusion it may be stated:

1. That the topical application of thermotherapy is of little if any value in controlling deep-seated visceral hemorrhages, congestions, or inflammations.

2. That experiments demonstrate that the ordinary means of applying local heat and cold to the surface completely fail to affect the temperature of structures lying beneath the skin to any practical extent, so long as the peripheral circulation remains active.

3. That thermotherapy as applied to the peripheral structures of the body is of so much importance that more adequate facilities should be provided for its employment.

34 East Thirty-first Street.

ANEURYSM OF THE ARCH OF THE AORTA

WHICH RUPTURED INTO THE ESOPHAGUS IN A YOUNG WOMAN WITHOUT EXTERNAL EVIDENCE OF SYPHILIS.*

By GEORGE L. PEABODY, M.D.,

NEW YORK

The aorta and adjacent viscera, which I present to you this evening, are chiefly of interest as throwing light on a somewhat obscure question of diagnosis, and also as suggesting caution in the use of the stomach tube in cases of dysphagia.

The patient was a healthy-looking woman, thirty-three years of age, who appeared much younger. She came under observation early in January of the present year, and died just eleven days later. She told us that her father had died at the age of 48 of some unknown disease, and that her mother had died at the age of 35 of cancer of the rectum. She knew of no other disease in the family. Although always of nervous temperament herself she had never been ill since she had measles in early childhood; she had never suffered from heart symptoms, and had never had any manifestations of syphilis. She had borne several healthy children, who were alive and well, and had had no abortions or miscarriages. She was accustomed to drinking four or five cups of coffee a day and two or three glasses of beer before retiring at night.

Five weeks before admission she had first noticed a feeling as if her food was arrested in its passage to the stomach at the level of the ensiform cartilage. This seemed to cause a sharp, stabbing pain at this point, which radiated to either side in what she called a "band-like" manner, circling the body, and meeting behind in the lower dorsal region. There, at times, she experienced a sensation as of a severe burning, which passed through the body like a knife to the starting point of all her pain underneath the ensiform cartilage. This pain had become almost constant and interfered with sleep. To gain relief she had become accustomed to taking morphine. Associated with this was a well-described globus hystericus. Her physician—a man of experience—had first passed a stomach-tube two weeks previously, and had, he thought, encountered a slight obstruction ten inches from the teeth, beyond which the tube had readily passed. The stomach was always found empty. The passage of the tube was not painful, but it had given her no relief.

One week before admission she thought that solid food was more difficult for her to swallow than fluid. Occasionally the withdrawal of the tube had

*Presented at a meeting of the Practitioners' Society of New York, Friday, March 1, 1907.

been followed by a little bloody mucus—not more than frequently follows its use in gastric cases. Of late the dysphagia had been less marked and less constant, and all of her symptoms had been improving.

She was a little hoarse, and very nervous and anxious, and, although well nourished, said she had lost twenty-five pounds in weight. Her conjunctival reflexes were absent and her pharynx entirely anesthetic to palpation. Her pupils, heart, superficial arteries, and radial pulses were normal, as were also her lungs. Percussion and auscultation of the chest revealed nothing abnormal.

There were no scars upon the surface of the body and there were no enlarged lymphatics. Thus, it will be observed, there were present many of the typical stigmata of hysteria, and there was a complete absence of all the physical signs of thoracic aneurysm, together with both of the etiological factors that go to justify that diagnosis. Her age and sex, too, were factors rather in favor of hysteria than of aneurysm, and when you add the well-described globus hystericus, and the corneal and pharyngeal anesthesia, I feel that an error in diagnosis is at least explained, if not justified.

For a few days she was put upon milk diet, cold pack, faradism in site of pain, laxatives, and sedatives at night.

She continued to complain of pain, to vomit, and to have the same and an increasing difficulty in swallowing.

Lavage showed a slight amount of mucus in the stomach-washings—nothing more. Occasionally a little bloody mucus adhered to the tube on its withdrawal. For some days she was fed once daily through the stomach tube. The passing of the tube was not difficult, although about ten inches from the teeth it always encountered some resistance.

She slept badly on account of the pain, and continued to lose weight, and as her symptoms did not yield to the usual methods of treating hysterical dysphagia, it was deemed wise to have an *x*-ray photograph of her thorax, the negative of which I show you here. This established the diagnosis of aneurysm of the descending aortic arch and showed clearly its displacement of the esophagus. Before the photograph was taken the patient swallowed some bismuth subnitrate, whose presence demonstrates in the photograph the distention of the esophagus above the site of its constriction by pressure of the aneurysm.

Rectal feeding was then resorted to. Naturally she continued to do badly. In a few days more she suddenly vomited about ten ounces of blood and became pulseless and cyanotic, and in a few minutes died.

The autopsy showed a small, false aneurysm of the descending aortic arch which communicated with the esophagus through a large, ragged opening. Her stomach was full of blood. In the arch of the aorta were several raised patches of that kind of aortititis without calcareous change which is commonly re-

garded as of syphilitic origin. Sections taken from these patches, as well as from the wall of the aneurysm, show the areas of atrophy of elastic fibers, which are also regarded as diagnostic of syphilis.

The specimen in gross I will demonstrate to the Society, and will also show the sections under the microscope to those who are interested in looking at them.

DIAGNOSIS OF EARLY PREGNANCY WITH REFERENCE TO A PARTICULAR SIGN.*

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THE fact that the question of pregnancy sooner or later solves itself is probably one of the main reasons for the comparatively little attention that has been given to the study of the signs of early pregnancy.

Not only are there innumerable instances where it is extremely desirable that a diagnosis of early pregnancy be made, either in the interest of the patients or as a test of the diagnostic skill of the physician; but the knowledge of the presence or absence of pregnancy is often of the greatest importance to the life of the patient from a medical and surgical standpoint.

As a material aid in differential diagnosis it is of especial value in a number of very important gynecological conditions, among which may be mentioned: Extrauterine pregnancy; tumors, including myomata and hematometra, inflammatory conditions of the uterus; cysts of the ovaries and tubes; ovarian cysts complicating pregnancy; and spurious pregnancy.

The teaching on this subject, as expressed in the best text-books on obstetrics and gynecology of the present day, are in my opinion misleading and erroneous, as, for example, Williams in his book on Obstetrics makes the following assertion (p. 157): "Mistakes in diagnosis are most frequently made in the first months of pregnancy": and again he says: "It is often a matter of considerable importance that a diagnosis be made in the early months of pregnancy, but unfortunately it is just at this point that our diagnostic ability is most restricted." On page 119 of Edgar's book is the following statement: "A number of symptoms and signs taken together give certain evidence of the presence of pregnancy; and single signs, especially in the latter part of pregnancy, render the diagnosis probable or even positive."

My observations in this field, extending over a period of about fifteen years, and based on verified results obtained from the examination of a very large number of patients in dispensaries and clinics and in private practice, are entirely at variance with the above doctrine, which represents the generally accepted views of the present day. My experience has convinced me, and this opinion is shared in by my clinical associates, that a diagnosis of "early uterine pregnancy" can be made or excluded in nearly every instance with almost absolute certainty.

The textbooks give the following classification of the signs and symptoms of early pregnancy: They are divided into: (1) Presumptive; (2) probable; (3) positive.

The presumptive signs are mainly subjective, and are to be considered in the early months of pregnancy. They consist of: (1) Amenorrhea, (2) changes in the breast, (3) morning sickness, (4) urinary disturbances, (5) discoloration of the vagina.

The probable signs refer also to the early months of pregnancy, when the following can be obtained:

FIG. 1.—Position of the two hands in the bimanual examination for the diagnosis of pregnancy (Edgar); Hegar's sign is obtained by pressing the external hand deep down into the abdomen and grasping the lower uterine segment between the two hands.

(1) Changes in the shape and consistency of the body of uterus, (2) changes in the cervix, (3) increase in size of uterus, (4) intermittent contractions of uterus.

The positive signs are: (1) Fetal heart beat, (2) passive and active movement of the fetus, (3) outline of the fetus.

From this classification it will be noticed that the signs given as positive refer entirely to the fetus, and are to be looked for only in advanced pregnancy, and do not therefore apply to the period under discussion.

Of the presumptive signs the changes in the breast and discoloration of the vagina do not, as a rule, appear in the early months of pregnancy, and we must depend on the patients for the other presumptive symptoms, namely, morning sickness, urinary disturbances, and amenorrhea.

Morning sickness may occur at the beginning of the fifth week, and last several or more months, but

*Read at a meeting of the Section of Obstetrics and Gynecology of the New York Academy of Medicine, February 28, 1907.

it is found only, according to various observers, in from 15 to 50 per cent. of cases of pregnancy, and it may also be the result of nervousness, anxiety to conceive, or fear of an illegitimate pregnancy.

Bladder symptoms are so unreliable as to be absolutely valueless.

As for amenorrhea, we know that pregnancy may take place during an interval of the cessation of menstruation as the result of other diseases, or because of lactation. Frequently a false history of amenorrhea is given by patients who purposely wish to deceive the physician, and occasionally a period may be missed because of fear of conception; and there are cases on record of menstruation during the first months of pregnancy.

The signs therefore of pregnancy in the early months, and these are considered only as probable signs, are: (1) Changes in the shape and consistency of the body of the uterus, (2) increase in size of uterus, (3) changes in the cervix, (4) intermittent contractions of uterus. Of these signs the last two, namely, changes in the cervix and intermittent contractions of the uterus, can be looked upon only as corroborative signs.

Fig. 2.—Position of the two hands in the bimanual palpation of the uterus for the detection of the elastic area of pregnancy; the external hand used only for counter pressure; the arrow indicating the site of the elastic area in the 5th or 6th week of pregnancy.

I have found, however, that the change in the consistency of the uterus is an invariably constant and positive sign of early pregnancy; and furthermore that this change can be detected frequently as early as the fifth week, but always in the sixth week of pregnancy. As an indication of pregnancy it is in my opinion equally as reliable as any of the positive signs of advanced pregnancy.

Numerous observers have noticed a peculiar change in the consistency of the uterus in the early months of pregnancy, and have offered it as an important indication of pregnancy, but in their descriptions and interpretations of the changes observed they have differed materially from one another. As, for instance:

Von Braun describes the change to consist of "a more or less longitudinal furrow, dividing the uterus into two halves, one of which, usually the left, is softer than the other." Landau finds compressible points at the uterine cornua. Lohlein and Gardner call the changes "A cystic softening of the uterus." Dickinson considers "A bellying or bulging of the fundus and elasticity of the body of the uterus" as pathognomonic of pregnancy.

Hegar's sign was first described by Rheinl, in 1884, and is obtained by bimanual palpation, with one hand upon the abdomen and one or two fingers in the vagina; the firm, hard cervix and the elastic body of the uterus is felt by the palpating fingers, while between the body and the cervix a soft compressible area, involving the lower segment of the uterus throughout its entire thickness is felt. Hegar's sign is now universally accepted: it has undoubtedly suggested the various other descriptions of the change in consistency subsequently advanced by various investigators.

It was while looking for the Hegar sign for early pregnancy, many years ago, that I succeeded in detecting and developing the sign of early pregnancy which I have taught and employed ever since, and have found to be almost infallible.

I do not know with what constancy and uniformity the changes in the consistency of the body of the uterus, as described by the other observers, can be obtained. I certainly have not detected them to any great extent in the study of my cases while searching for the sign I depend on; I do know, however, that Hegar's sign cannot be obtained in a very large percentage of the cases of early pregnancy (Dickinson claims that it cannot be detected in 40 per cent. of cases), and furthermore that it is present in other conditions, namely, retrodisplacement of the uterus; in the puerperal state; and especially in subinvolution following delivery or abortion.

The change in the consistency in the body of the uterus I desire to call attention to is as follows: Frequently as early as the fifth week, but always in the sixth week, there can be felt in the median line in the anterior wall of the body of the uterus just above the junction of the body and cervix, in other words in the isthmus of the uterus, a circular area the size of the tip of the finger, which presents to the palpating finger the sensation of an elastic fluctuation.

As pregnancy advances this area increases in size in a crescentic manner, until between the third and fourth month, when nearly the entire anterior body, with the exception of the upper crescent of the fundus, partakes of this change, and gives the cystic fluctuating feel to the examining finger. The change appears in the anterior wall of the uterus when the uterus is in the normal position or slightly anteverted, but in extremely retroverted or retroflexed uteri the elastic area appears in the posterior wall, but instead of being perceptible in the fifth or sixth week of pregnancy, is usually felt in the sixth or seventh week.

In incomplete abortion or subinvolution there is a change in the consistency of a similar area of the uterine wall, but while in pregnancy the feel of this area is distinctly elastic or cystic, the sensation obtained in subinvolution and incomplete abortion is very soft and doughy. The two conditions can very readily be differentiated.

It will thus be seen that a familiarity with this sign of pregnancy will also enable one to determine

with a fair degree of certainty whether an abortion is threatened, inevitable, or incomplete. Here again my experience differs from the views generally accepted—that a diagnosis of the death of the ovum in the early months offers considerable difficulty, and can only be made after repeated examination of the uterus proves that it remains stationary in size.

In cases of early pregnancy with symptoms of threatened abortion the area above referred to remains cystic and elastic so long as the ovum is viable, but becomes soft, doughy, and compressible when the ovum dies, and the abortion is inevitable. I have repeatedly advised against a proposed curettage which seemed justified in cases of prolonged bleeding during early pregnancy, when I found the spot in the anterior wall of the uterus to be elastic, and have had the satisfaction of seeing many of the cases I had the opportunity to follow delivered at term. When the area is soft and doughy to the touch, a diagnosis of "blighted ovum" can be made with certainty.

There is another condition which presents a difference in the consistency of the upper and lower portions of the body of the uterus, and that is when a small, symmetrical fibroid is situated in the anterior wall of the uterus, near the fundus. In that case the lower portion is softer than the upper portion of the body of the uterus, but it must be remembered that it is only comparatively so, for while the fundus and body present the hard characteristic feel of a fibroid, the isthmus has the consistency of the normal uterine wall.

However, when a soft myoma, or cystic fibroid, is situated in the anterior wall of the uterus, the cystic or elastic feel elicited in the uterine wall is identical with that of pregnancy, and this is the one condition in which this sign is not of diagnostic value; especially when the soft myoma is associated with amenorrhea, which was present in several cases that came under my observation.

As to the manner of obtaining this sign, it is absolutely essential that bimanual palpation be employed: While the external hand fixes the uterus by counterpressure, and the anterior wall of the uterus from the cervix to the fundus is palpated with the internal finger or fingers, the elastic area in the body of the uterus, immediately above the cervix, will be readily made out; the size of the area will correspond with the duration of pregnancy. I desire to emphasize the fact that the recognition of this elastic area does not require any special skill or dexterity; the ordinary technique and tactile sense requisite for a bimanual examination, combined with a correct interpretation of the change noted in the wall of the uterus, will enable the general practitioner to make a diagnosis with the same ease as the specialist.

Again, the absence of this sign is an absolute indication for the exclusion of uterine pregnancy. In the absence of this change in the uterine wall, pregnancy of more than five or six weeks can be positively eliminated, even in the presence of other presumptive or probable signs.

I will not enter into a full discussion of the differential diagnosis of early pregnancy with regard to the various conditions with which it may be confounded, except that of extrauterine pregnancy, which I propose to consider somewhat in detail.

In every case of suspected ectopic pregnancy the most important aid to a correct diagnosis is the determination of the presence or absence of uterine pregnancy. That becomes apparent when we realize that in all supposed cases of ectopic pregnancy, in addition to the other various signs and symptoms to be taken into consideration, some or all of the presumptive and probable signs and symptoms of pregnancy are invariably present, and the first question to be decided is whether the case is one of uterine pregnancy. With a sign at our disposal which enables us to make a positive diagnosis of the presence or absence of uterine pregnancy, we have eliminated one of the most prolific sources of error in the diagnosis of ectopic pregnancy.

It must be remembered, however, that this sign cannot be depended upon for a differential diagnosis before the fifth and occasionally sixth week of ectopic pregnancy, but fortunately patients requiring attention at so early a stage are comparatively rare.

I have no hesitancy in saying that my ability to exclude uterine pregnancy by this sign has materially assisted me in arriving at a correct diagnosis of ectopic pregnancy in a large number of otherwise doubtful cases, and is largely responsible for my belief that the diagnosis of extrauterine pregnancy can be made with as much certainty as any other pathological condition of the pelvis. In several of my list of cases of extrauterine pregnancy the absence of uterine pregnancy was the only absolute positive indication on which a diagnosis was based and found to be correct.

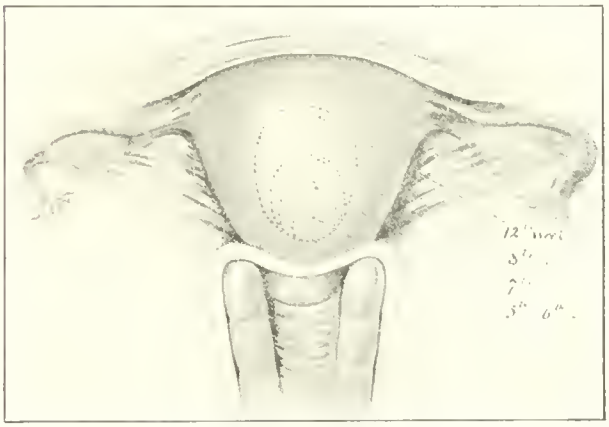

Fig. 3.—Diagramatic representation of the approximate size and shape of the elastic area in the various weeks of pregnancy.

I will take the liberty of citing one case which illustrates this fact most forcibly:

Last summer a lady about 36 years old, who was stopping at a summer hotel in Fleischmanns, Catskill Mountains, and who had previously enjoyed the very best health, after a period of amenorrhea of seven weeks was suddenly seized one morning with severe pain in the left ovarian region, with nausea and vomiting. She had fainting spells, grew extremely pale, her respirations were frequent and shallow, and the pulse became very rapid and feeble; in short, she presented a clear case of internal hemorrhage. Two colleagues, Drs. Ludwig Kohn and I. M. Rottenberg, who were attending her, made a diagnosis of "ruptured tubal pregnancy," and telephoned to me in the city to come up prepared to do a laparotomy.

After heroic hypodermic stimulation and the administration of large quantities of champagne, the patient gradually improved in condition and appearance, so that I found her, late that same afternoon, with an absolutely normal pulse, with good color, and free from pain. The physicians in attendance, both men of large experience and very able diagnosticians, began to doubt the correctness of their diagnosis, and I was asked for a decision.

Examination revealed a slightly distended abdo-

men, but owing to the extreme obesity of the patient, the signs of free fluid in the peritoneal cavity could not be made out with any degree of certainty.

Vaginally, the uterus was found normal in position and slightly enlarged, but with no elastic area in the anterior wall. There was no enlargement of either tube to justify a diagnosis of tubal pregnancy. There was but slight evidence of free fluid in the pelvis. The patient's last child was seven years old, and she had been regular in her menstruation since, except that she had her last period seven weeks previously.

Had this patient been in a hospital, or in her home in the city, I confess I would have been tempted to keep her under observation before deciding to operate; but in view of the fact that she was in a country hotel, and that if her condition became urgent during the night the necessary aid could probably not reach her, an exploratory laparotomy was indicated. To complicate matters, the husband of the patient insisted on a positive diagnosis before he would consent to an operation.

Now here we had a case presenting absolutely no positive signs of tubal pregnancy, and the only symptom to guide us was the amenorrhea. The sudden attack of vomiting and abdominal pain and the shock could also be explained by the fact that after an enema she had had several large evacuations containing mucus and a quantity of undigested material. The fact that I was able positively to exclude uterine pregnancy in this case was the most important factor that led me to confirm and adhere to the diagnosis of ectopic pregnancy.

The operation proved the case to be one of ruptured tubal pregnancy, and the reason for my failure to feel the characteristic distention of the tube, and the marked improvement in her condition subsequent to her collapse, will be found in the specimen, which presents a rupture of a cornual pregnancy of early duration.

As for the cause of this change in the wall of the pregnant uterus, I do not share the opinion of those who claim that it is due to the presence of the ovum and its attachment to the uterine wall. It is generally conceded that the enlargement of the uterus in pregnancy is the result of physiological and not mechanical causes, and that the changes in the organ are reflex in character and begin with impregnation, as evidenced by the enlargement of the uterus in extrauterine pregnancy, and, furthermore, that the hypertrophic process involves not only the muscular fibers and connective tissue, but all the vessels. The branches of the uterine vessels that supply the body of the uterus enter the uterus on a level with the elastic area of pregnancy, and form a loose, dilated, and tortuous plexus, which is probably the first of the important changes that take place in the uterus as the result of pregnancy.

I believe, therefore, that the peculiar elasticity found in early pregnancy is in all probability due to the extreme vascularity of that particular portion of the uterine wall, and to no other cause; but later, however, the fluctuating feel of the body of the uterus is no doubt due also to the presence of the gravid sac.

In emphasizing the fact that the change found by me differs materially from the other signs advanced, and especially from Hegar's, with which it must not be confounded, it is not my intention to detract in the least from the work done in this direction by other observers; that there is a unanimity of opinion that a change in the consistency of the uterus does take place as the result of pregnancy, whatever the interpretation may be, is the best possible proof of its diagnostic value.

The sign I advocate possesses the great advantage that it can be elicited more readily by the general practitioner and the specialist than the other signs, which require especial skill in bimanual palpation for their recognition, and above all because it is uniform and constant in its appearance.

In offering this sign to the general practitioner and specialist, I am doing so, fully convinced that when it is put to a fair test its reliability and value as a means for diagnosis will soon be established.

1289 Madison Avenue.

SYMPTOMLESS MASTOIDITIS, FOLLOWED BY MENINGITIS AND DEATH.*

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WASHINGTON, D. C.

A very unusual case has recently come under my care, and in view of the very misleading symptoms I beg leave to report its history. Mr. H., male, white, married, age fifty-four, clerk. *Family history* unknown. *Previous history*: He said he had never been ill a day in his life; that he had had one child which had water on its brain, its head was very large, and was tapped and operated upon several times, but it died at an early age. *Present illness*: The last of October he contracted grippe, which was accompanied by severe earache on both sides and almost absolute deafness. He was treated by his family physician until November 10, 1906, when he came under my care. He then complained of severe earache, alternating from side to side, and especially severe at night, causing him much loss of rest. He was also very deaf, not being able to hear the street noises going on about him, and only catching a few words when I fairly shouted into his ear. On examination, his nose, nasopharynx, pharynx, and larynx were very free from inflammation, there being no secretion in the nose, nasopharynx or accessory sinuses. The right membrana tympani was congested in Schrapnel's membrane and along the long process of the malleus. The left membrana tympani was entirely congested and slightly swollen in its superior posterior quadrant. There was no tenderness on severe pressure over either mastoid. With the Eustachian catheter I found the right tube fairly dry, but the left tube contained a great amount of purulent fluid, which was easily aspirated with the catheter, affording the patient immediate though temporary relief and improvement in hearing. At home he douched his ears with hot water every two hours.

This treatment I continued for several days, the pain becoming less; and in my records under date of November 17, one week from my first examination, I have this note, "Much better, no pain, and increased hearing." The congestion of the right membrana tympani soon disappeared, leaving evidence of a chronic catarrhal otitis media of long standing. The congestion of the left membrana tympani also greatly decreased, confining itself almost entirely to Schrapnel's membrane and along the long process of the malleus. From this time on the patient made slow and steady improvement. His general health and appetite improved; he went about on his bicycle and his hearing improved so he could hear distinctly ordinary conversational tones and could hear his clock tick at home. However, he continued to suffer with tinnitus and a "rumbling in his head."

*Reported before the Society of Ophthalmologists and Otologists of Washington, D. C., January 18, 1907.

Repeated examinations of both mastoids failed to reveal any tenderness. During this time he was coming to my office about three times a week for treatment, and his last visit was on Saturday, December 29, 1906.

The following Thursday evening I received a letter from his wife, stating that Mr. H. had been very ill with headache, vertigo, nausea, and vomiting. Suspecting something serious, I wrote her to bring him to the hospital the next day, which she did. There was a marked change in the appearance of the patient; he looked septic and reeled when walking so that he had to be supported. His temperature was 97.4°, pulse 72. There was no change in the appearance of either membrana tympani, and there was no mastoid tenderness on either side. Feeling that there were no indications for operation, I had the patient put to bed on a liquid diet. The next day, Saturday, January 5, 1907, again the local conditions were unchanged. The patient's temperature ranged between 97.4° and 98° and he seemed better, having had no nausea and but little vertigo. Sunday, January 6, 1907, his temperature was between 97.8° and 98.4° and he was very bright and cheerful, laughing and joking with his relatives. About noon on Monday, January 7, he had an attack of nausea, explosive vomiting, vertigo, and a rise in temperature to 101° at 6 P.M. These symptoms continued, the patient tossing about very restlessly, moaning and groaning. At 10 P.M. his temperature had fallen to 98.6°. At 11 o'clock I operated on both mastoids, doing the left side first and finding a tremendous amount of carious bone which was readily curetted from the dura. The dura was incised, evacuating a small amount of serum. The lateral sinus was exposed and found normal. The right mastoid was less diseased than the left, and neither the dura nor the lateral sinus was exposed. The wounds were packed with gauze. The patient's temperature was then 102°, reaching 104° by 8 A.M., 105° by 2 P. M., where it remained until 10 P.M. Shortly thereafter the patient died, never having regained consciousness. Dr. R. S. Lamb performed the autopsy, and the following is his report:

"Post mortem in the case of W. H., male white, age fifty-four. Admitted to hospital January 4. Died January 8, 1907. Height, 5 feet 10; weight, 150 pounds; body well nourished; color, light saffron; eyes, blue. Double mastoidectomy evident. On removing the calvarium the longitudinal sinus was found immensely engorged, as were also the vessels of the dura mater. The removal of the dura exposed a markedly congested pia mater covered with purulent lymph—a diffuse leptomeningitis. The removal of the brain and cutting the spinal cord was attended by the outflow of blood and pus in large quantities, the brain being literally bathed in pus. In the left lateral sinus was found a large, soft, dark clot, in the torcular Herophili a similar clot, and in the right lateral sinus a white disintegrating clot (thrombosis). The base of the skull interiorly was normal, except an absence of the left tegmen tympani. The brain showed a diffuse leptomeningitis over the entire cerebrum and cerebellum with pus in the lateral ventricles. The examination of the other organs of the body showed normal lungs, heart, and kidneys, with congested liver; other organs normal. In conclusion it would appear that the leptomeningitis was of otic origin, via a thrombosed right lateral sinus, as the dura over the absent tegmen tympani showed no pachymeningitis externa." Signed, R. S. Lamb, M.D.

It cannot be possible that this amount of disease came on suddenly, and just when and how the infection took place is surmise. Of the meninges of this brain the parts apparently least affected were those parts just over the ear in the middle fossæ. The engorged vessels of the dura with the lymph deposits on the pia and the presence of pus in the lateral ventricles are similar to the pathology of cerebrospinal meningitis, and many of the symptoms were similar also, but the absence of hyperesthesia, anesthesia, signs of motor irritation, and the cutaneous changes, with the presence of the otitis media and lateral sinus thrombosis certainly warrant the opinion that the cerebral changes were of otic origin. Maybe I have detailed this history somewhat unnecessarily, but it is appalling to me to think that for two months I saw this patient every few days and that the apparently good results from the treatment so completely deceived me as to what was actually going on; and it is my wish to emphasize these few points in closing:

First, that I sincerely regret not making a lumbar puncture before the operation, and that the leucocyte count was not worked up.

Secondly, in regard to the history, to repeat that during the entire attack he never had fever to my knowledge until four hours before the operation; at no time was there any mastoid tenderness; the membrana tympani never perforated or discharged, but the conditions steadily improved, as also did his hearing, and the symptoms of meningitis were the first symptoms that pointed toward operative interference.

The Farragut.

PROLAPSE OF THE RECTUM:

REPORT OF AN OPERATION FOR THE RELIEF OF THE CONDITION IN A DEMENT.

By JAMES K. HALL, M.D.,

MORGANTON, N. C.

ASSISTANT PHYSICIAN NORTH CAROLINA STATE HOSPITAL.

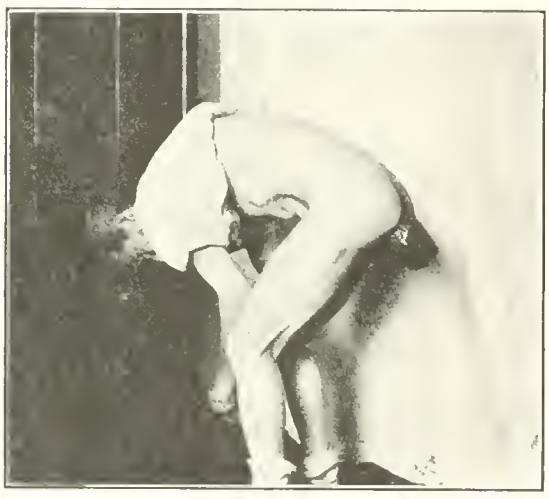
The comparative frequency with which prolapse of the rectum occurs in all classes of society, and the noticeable infrequency in current medical literature of reports of measures successfully adopted for the relief of this distressing and repulsive condition, prompt me to submit the following report of an operation on a young dement who had been suffering for several years from rectal prolapse.

Clinical No. 1753.—G. A., male, white, aged 36, was admitted to the State Hospital at Morganton in 1895. There had been very marked mental disturbance for two years before admission, and his mental development had never been normal. His father, as well as a sister, were epileptics. Before admission the patient had delusions of fear and suspicion, was violent and destructive, and gave his family much concern.

Since admission, mental deterioration has been gradual but progressive. In this article, however, a detailed psychic history of the case, interesting though it might be, would not be in place. Let it suffice to say that for several years after admission the patient enjoyed periods of comparative mental lucidity, during which he was tractable and worked with considerable intelligence. For the past five or six years, however, the periods of depression have been much more frequent and pronounced than formerly, and at such times there has been present always an uncontrollable impulse to take his own life. Five years ago, for instance, the patient ate a quantity of Paris green, but by prompt treatment

was saved from death. Only a short time before this he had attempted to cut his throat with an old piece of steel which he had sharpened by rubbing against a brick wall. Having failed with the poison, he soon made another attempt to cut his throat, but the instrument was too dull. He even tried to throw himself into a rapidly revolving engine wheel, and, at another time, in front of a moving wagon. Less than a month before the operation, which will be described, hemorrhage from a self-inflicted wound on the neck all but had the result he hoped for. Because of this strong suicidal tendency, confinement in the ward and close watching had been necessary for several years. As a result of the confinement, the depression, and the many attempts at self-destruction, his physical health was not robust.

It is impossible to say definitely when the condition began. But it is certain that five years ago a prolapse of such size had taken place that the patient was forced to replace the tumor digitally after each stool. Sphincter power was so strong, however, that recurrence came only with a bowel movement. But as time went by more and more of the rectal tissue descended at each stool, and its reduction became more painful. Finally, the condition became so bad that the patient spent the greater portion of each afternoon in the closet.



The accompanying illustration, made from a kodak taken the day of the operation, will furnish some idea of the size of the mass. It was pear-shaped, quite firm, about eight inches in the long axis, and six transversely. There were on it numerous small abraded and bleeding spots, caused by unskilful methods of reduction. Replacement must have been attended by the most atrocious pain, for the agonized groans of the patient could be heard throughout the ward. And lacking in all the finer feelings though he was, the condition was so repulsive, even to the patient himself, that he sought seclusion in the closet, and refused all aid. Efforts at reduction, although accompanied with difficulty and always attended by great pain, were invariably successful. In the intervals between stools, the sphincters retained the rectum within the pelvis, and there seemed to be no discomfort, even though he spent much of his time on his feet.

About the middle of September the patient made a long gash on the right side of the neck, completely severing the external jugular vein and bringing into view the deeper vessels. Hemorrhage from this wound was severe, and from the time of the accident until the operation the patient was too weak to be up. The heart and lungs seemed to be normal, and nothing was found in the urine to forbid the administration of ether.

Of the many operative measures suggested for the relief of this condition, that one was selected which has for its purpose fixation of the colon, just above the sigmoid, to the anterior abdominal wall. Operation was scheduled for October 16. On the morning of the 15th magnesium sulphate was given in 2 dram doses every hour until the bowels were thoroughly emptied. The abdomen was carefully cleansed in the afternoon, and covered with a weak bichloride dressing. The diet was restricted to milk in small quantities. On the day of operation an ether breakfast was given, *i.e.* a glass of milk and a slice of bread. The bowels were again thoroughly emptied by soapsuds enemata, and the lower bowel was irrigated with liberal quantities of physiological saline solution.

The patient was put on the table at 4:30 P.M. The abdomen was again cleansed with soap and water, ether, alcohol, and a strong solution of mercuric chloride. An incision was made through the abdominal wall on the left side about two inches above Poupart's ligament, parallel with the ligament, and four inches in length. The incision terminated medially at the deep epigastric artery. The rectum was found to be much thickened and indurated, and to the palpating hand it gave the impression of a cone with the apex pointing upward. Other viscera that could be felt seemed to be normal and in their proper positions. The parietal peritoneum for half an inch around the margin of the incision, was separated from the overlying tissue. The colon was then drawn upward and made rather tense. At the upper angle of the incision a strong silk suture was entered just beneath the skin, was passed through the wall to the peritoneum, through the longitudinal band of fibers in the colon, in like manner through the abdominal wall on the opposite side, and firmly tied. This suture, which later became buried, served the double purpose of keeping the rectum and sigmoid on the stretch and the longitudinal bundle of colon fibers in the long axis of the incision. Beginning at the lower angle of the wound, the parietal peritoneum was sutured to the colon. Fine silk was used in a small, curved needle, and the continuous suture was employed. At the lower end of the incision the attachment of the parietal peritoneum to the colon began on the anterior bundle of longitudinal fibers; further up the attachment was about a half inch from the bundle of fibers, and at the upper angle it again approached them. The attachment of the parietal peritoneum to the front and each side of the colon thus formed a kind of diamond-shaped figure, about four inches in the longer axis and an inch and a half at the widest point. The peritoneal cavity was in this way closed. At the lower angle of the incision an interrupted suture was introduced on one side, just beneath the skin, passed downward to the parietal peritoneum, made to catch firmly the anterior longitudinal band of fibers in the colon, and brought through the same constituents of the abdominal wall on the opposite side. Sutures were introduced in like manner about a half inch apart along the entire length of the incision, and were of catgut and silk alternately. They were held by hemostats, and were temporarily left untied. Interrupted sutures of good-sized silkworm gut were now introduced through the abdominal wall, excluding only the peritoneum, and not catching the colon. They were placed half an inch apart. The interrupted sutures of silk and catgut, which had been put through the abdominal wall and also through the band of the colon, were now re-

leased from the hemostats and tied. These became buried sutures, and their purpose was to bring about a third of the circumference of the peritoneal coat of the intestines for a length of four inches into close and firm contact with the raw surface of the abdominal wall—the transversalis fascia—in the hope that strong adhesions might result. The interrupted silkworm gut sutures were now tied, closing the abdominal incision. A dry dressing was applied to the wound, and held in place by adhesive strips and a scultetus. The buttocks were kept in close apposition by adhesive strips applied transversely, thus furnishing some support to the rectum from below. Strychnine, gr. 1-30, was given on the table, and the patient was removed from the operating room at 6:30, in good condition.

It was thought advisable to keep the bowels confined for several days, and to keep the patient absolutely quiet. For this purpose morphine was given frequently. At 9 P.M. on the day of operation gr. 1-6 of morphine was given hypodermically, producing sleep for several hours. At 1 A.M. the next day, to allay restlessness, 1-8 of a grain was again given in the same manner. At this hour the temperature was 101.3°, and the pulse 105. Urine was voided freely, but there was no desire to move the bowels. At noon on the day following operation a teaspoonful of hot water, to be given every hour, was begun, but resulting nausea soon necessitated its discontinuance and the administration of morphine in small doses late in the day. The second night was passed in comfort; urine was voided and flatus expelled. On the second day milk was given every two hours in tablespoonful quantities, but at night there was nausea and vomiting, and morphia was administered. On the third day the temperature did not rise above 101°; the administration of morphine was not resorted to, and liquids—milk, lemonade, and cracked ice in small quantities—were retained. The condition on the fourth day was quite satisfactory. The temperature had fallen to 100°; liquid nourishment was retained, and there was no discomfort. Restlessness and slight nausea were allayed on the next day by morphine, 1-8 of a grain in the forenoon, and a small dose at night. On the sixth day calomel was given hourly in ½ grain doses for six hours in the forenoon. Soon after the last dose there was inclination to bowel movement, and an oil enema was given, resulting in a small stool. Soon afterwards a Seidlitz powder was taken, and within an hour there was a copious stool, unaccompanied by pain or a recurrence of the prolapse. One week after the operation liquids were being taken freely and there was no discomfort whatever. The condition during the three following days, however, was far from satisfactory, and at one time was a source of considerable anxiety. Nausea recurred, there was abdominal discomfort, the pulse became weak, the vitality was lowered, and the patient became restless. Strychnine, gr. 1-30, was ordered given every three hours by hypodermic injection. On the ninth day there was a slight voluntary bowel movement, and vomiting occurred several times. An enema was given on the tenth day, and immediately a very large scybalous mass was expelled, and its removal was attended by great effort and pain.

After this improvement was rapid. Nausea ceased, the appetite improved, and the bowels moved without pain every day. The stitches were removed at the end of two weeks. There were one or two small stitch abscesses, but union was firm. For three weeks after operation the patient was kept under constant watch day and night, and was scarcely allowed to raise his head. During this time the bed pan was used when bowel movements occurred. At the end of three weeks the patient was propped up in bed a few minutes daily. After the fourth week he was allowed to sit up and to walk around a little each day. The bed pan was dispensed with. Several of the buried sutures worked out.

The patient is now, more than four months after the operation, in better physical condition than he has been in for several years. He does not suffer the slightest discomfort at stool, and there has been no sign of a recurrence of the prolapse. Although little improvement was looked for in the mental condition, it is evident that he takes a much more cheerful view of life than formerly. How much the condition had to do in impelling him to self-destruction one cannot say, but one can readily understand how such a condition could make life unendurable, even to an insane man. It is too much to expect the suicidal tendency to disappear, but the pain has been relieved, and its cause removed.

I have no idea of the frequency with which rectal prolapse occurs. An estimate based on the number of cases in this institution would put its occurrence at 1 in every 200 or 300. I have no doubt that the condition exists much more frequently than we think. If every physician were to examine every case of "protruding piles" which he treats without seeing with some kind of ointment, he would doubtless discover many cases of incipient prolapse of the rectum.

My thanks are due the superintendent of the hospital, Dr. P. L. Murphy, for permission to report this case.

ASPIRATION IN OTITIS MEDIA ACUTA.

By PERCY R. WOOD, M.D.,

MARSHALLTOWN, IOWA.

Acute middle-ear suppuration frequently runs a protracted course, convalesces tediously, and leaves in its wake most serious conditions. This arises from failure promptly to control suppuration and limit the zone of infection. While these diseases frequently attack the neurotic and poorly nourished, following exanthematous fevers or influenza, the largest number of cases occur in children suffering from unsuspected adenoids.

Ninety per cent. of middle-ear suppurations arise from pathological conditions in the nasopharynx. The unsatisfactory results so frequently obtained in treatment arise largely through ignorance of these conditions and their relation to this disease. This region should be carefully examined in every instance, not alone with the mirror, but especially with the tip of the index finger, since the eye here does not always furnish complete data. Severe inflammations dependent upon systemic or local irritants might be easily recognized, but the bursa might be filled with hypertrophied lymphoid tissue, or small tufts surround and even encroach upon the Eustachian orifices and the vault still appear healthy, especially to the inexperienced.

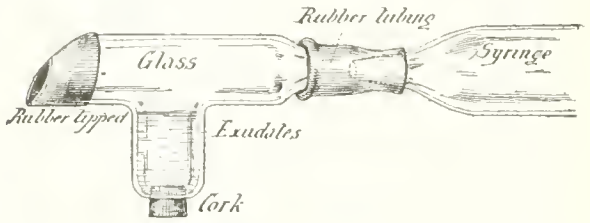
These apparently slight departures from normal play major rôles in the production of middle-ear diseases, favoring inflammatory action and interfering with tympanic drainage and aeration, while their glandular character enables them to retain and transmit pathogenic microorganisms to the middle ear and adjacent structures. The following case is an apt illustration. Johnny B. of Marshalltown, eleven months old, had been suffering six weeks with middle-ear suppuration, none

of the characteristic signs of adenoids being present. Examination disclosed a slight bulging of the bursa and a few tufts of lymphoid tissue overlapping the orifice of the right tube. After their removal and aspiration of the middle ear by means of an original device to be later described, suppuration ceased the third day under appropriate treatment, and complete recovery followed in less than two weeks.

A crisis is established at every onset of an acute otitis media. Infection is invariably a factor, and purulency and chronicity ever-present possibilities. The pathogenic secretions in almost every instance, by traveling paths of least resistance enter the mastoid, and pathological changes here may go on for years without exciting suspicion.

The writer performed an operation this winter entailing entire evisceration of the middle ear and mastoid process with exposure of the brain coverings and venous channels. There was a history of acute suppuration twenty years previously, yet symptoms necessitating active measures appeared but a few weeks before.

In these acute cases, custom prescribes sedatives, anodynes, leeches, counterirritants, and antiseptic medication, coupled with the advice to wait. In the meantime infection is spreading; disintegrating changes taking place in tympanic and mucous membranes, and even if acute symptoms do subside with or without tympanic rupture and resolution does seem to obtain, not infrequently function has been permanently impaired, while the patient, lured to a false sense of security, may be awakened months or years later with chronic middle-ear disease. It is better therefore rather to anticipate and prevent than attempt to cure these conditions. Hence the necessity of some treatment calculated to control inflammation promptly and limit the spread of infection, and so provide against immediate injury and subsequent chronicity.



Middle-ear Aspirator.

An early paracentesis meets these indications by protecting structures from mechanical and pathological action of the secretions, and by relief of tension lessening the chances of mastoid involvement. The wound heals in from three to five days, with no permanent impairment of audition. A solution of equal parts of menthol, cocaine, and carbolic acid applied on an inserted pledget of cotton and retained five minutes renders the operation painless. A large opening is not necessary unless the secretions are exceedingly tenacious, but should be placed right and extend to the floor of the canal.

After drainage is established, removal of the pathogenic exudates is really the paramount issue upon which hinges ultimate success or failure. Merely liberating these does not insure the desired results. They not infrequently have already involved the mastoid, and inspissated particles containing colonies of various cocci invariably cling to the ossicular articulations and the walls and roof of the attics, to the recess of the round window, around the foot of the stapes, and to other sequestered points known to be chosen seats of caries, and there they form pathological foci which develop later. Proof abounds in the chronic cases which are numerous where the tympanic membrane is totally or partially wanting, the ossicles necrosed or absent, and their places occupied by connective tissue bands—all the legitimate fruitage of inadequate treatment.

The writer once enjoyed the privilege of listening to Prof. Politzer on this subject, when he stated that acute middle-ear suppurations usually left traces in the mastoid which remained a constant menace to function, if not to life.

In order to carry out the technique as above suggested an instrument has been specially devised by the writer and called "the middle-ear aspirator." It is manufactured by F. A. Hardy & Co., of Chicago.

It consists of a glass tube three inches long with a reservoir for exudates. The aural extremity tapers and is tipped with rubber, and to the other is attached a syringe with a good sized air chamber. When in place the rubber tipped end seals the opening, the piston is drawn out gently and retained until the reservoir fills, or until no further exudates, blood, or serum escape. By this means these cavities are relieved of vast quantities of pathological secretions which would never entirely drain away or be absorbed, but remain throughout life to threaten the integrity of the parts. While this procedure does not exactly sterilize these parts, by the removal of vast quantities of microorganisms their preponderance over the living tissues is destroyed. Another feature not to be ignored is the favorable influence exerted by the blood-letting principle applied by the instrument. It relieves congestion, soothes pain, and hastens convalescence.

When the inaccessibleness of these regions and their vulnerability to necrotic action is considered, as well as the large percentage of cases which for these reasons become chronic, the practicability of this procedure is beyond question.

When through aspirating the auditory canal is sterilized, a current of warm camphorated vapor is sent through from the Eustachian side, the parts are dusted with boracic acid powder and packed loosely with iodoform gauze, and the pharynx is swabbed with a 2 per cent. solution of silver nitrate. This dressing and treatment should be renewed daily at first. Permanent recovery with reestablished normal function usually ensues within ten days.

ARRESTED MENTAL DEVELOPMENT.

By HUBERT RICHARDSON, M.D.,

BALTIMORE, MD.

LATE PATHOLOGIST TO MOUNT HOPE RETREAT, LECTURER ON NEUROLOGY AND PSYCHOLOGY AND ON PHYSIOLOGICAL CHEMISTRY, UNIVERSITY OF MARYLAND; PATHOLOGIST TO THE MARYLAND ASYLUM AND TRAINING SCHOOL FOR FEEBLE-MINDED CHILDREN.

Arrested mental development is a misfortune to both parent and child, calling for the physician to put forth all his efforts to discover the cause and if possible remedy the condition. It is probable that, notwithstanding the statistics, a very large proportion of our feeble-minded children are not heirs to the sins of omission and commission of their parents, but that the etiological factor of their defective mentality is of postnatal origin. Acute diseases in the first three years of life

are often the cause of lesions which permanently affect both the mental and the physical development of the child. It has been a matter of common observation that after a severe attack of the acute diseases of childhood, such as measles, scarlet fever, whooping cough, etc., there has occurred a gradual decrease in mental growth; the child may not be stupid or apathetic, but his mentality remains behind for his years, described as weakness of character or childishness, he having the normal mentality of a child much younger in years; puberty is delayed, and as he grows older it is true his mind also grows, but he never arrives at true mental maturity. In other cases the child deteriorates, becoming imbecile or even idiotic; in which case it is more than probable that during the acute disease from which he has suffered his thyroid has become infected, resulting in a cirrhotic condition of the gland, and consequent insufficiency; at puberty, when extra demands are thrown upon the thyroid, the symptoms become accentuated, a myxedematous condition commencing which, unless treated, will proceed to a cretinic condition from which there is little or no hope of recovery.

Another cause of arrested mentality is found in defects of assimilation and metabolism. Cases occur in which, from some acute disease, the gastric juice fails to contain either hydrochloric acid or the ferments; the exciting factor to the intestinal secretions not being present, the digestive process is deranged, and both physical and mental development are arrested for lack of nutrition. These patients usually have an uncontrollable diarrhea, with poor assimilation of fat.

Still another cause is to be found in circulatory defects. The cardiac energy may have been affected, and on taking the erect position there is not sufficient force to drive the blood to the brain. These children are usually well developed in the lower trunk and limbs, but the head and expression give the observer the impression of feeble development. The quantity of blood required by every organ can be divided into three portions, the first required for food, the second for functioning, and the third for growth. While the child remains recumbent the circulation is about equal all over the body, but on his taking the erect position the heart is unable to force the blood to the vertex, and though it may send enough for nutrition, yet not enough for perfect functioning and growth; in cases of angioplasia when the arteries are reduced in caliber this condition exists.

Acute disease may have affected the special senses, the child does not commence to walk or talk till long after the usual age, his limbs may be well nourished, but he lacks the nervous force from the cerebral centers; when he does commence to talk there are defects of speech which may be due to structural irregularities in the peripheral organs of speech, the tongue, palate, lips, teeth, nostrils, or pharynx, or in their nerve supply. The intellectual centers of the brain are in close connection with the central or cerebral speech mechanism, language and thought are inseparable; to think is to speak low, to speak is to think aloud. It is impossible to learn to speak without calling into requisition the sense of hearing, and the child cannot talk or think if its hearing is defective, which is often due to infection of the auditory apparatus. Those children whose hearing is defective may appear bright in certain lines, they may be able to make their every want understood by pantomime, but their mental development is permanently retarded unless the auditory defects can be remedied. Many children can be found in every asylum whose enfeebled mentality is due to ear disease, the result of postnatal infection. Defective sight, owing to the strain upon the eyes, often arrests the mental development of the child, and in a few cases produces epilepsy which in its turn increases the mental hebetude. There is every probability that insufficiency of the suprarenal glands is also a cause of arrested development, and absence of the testicular secretion has also a pathological effect upon both body and mind.

Intestinal parasites are often a cause of stunted growth, owing probably to the fact that they produce an antibody which destroys enterokinase, the ferment whose function it is to convert the inactive trypsinogen of the pancreatic secretion into active trypsin, thus striking at the very foundation of intestinal protein digestion.

Much can be done for those whose development has been retarded by antenatal conditions produced by disease of the mother during pregnancy. As the fetal liver is the organ which receives the maternal toxins, it is the organ requiring the postnatal attention of the physician. The right side of the heart during fetal life is the principal factor in the circulation, and antenatal valvular lesions are almost invariably in the tricuspid valve. In every case attention to the digestive tract is of the first importance, as without nutrition, no matter what other lesions may exist, development, either mental or physical, is impossible.

819 Park Avenue.

Operations During Typhoid Fever.—At a recent meeting of the Liverpool Medical Institution (*Lancet*, January 12, 1907), Dr. W. T. Thomas reported two cases of operations during typhoid fever, one for perforation, the other for appendicitis, in both of which recovery took place. He called attention to the fatal character of perforation unless surgically treated, when the recovery rate was 30 per cent. or more. Although in many cases the diagnosis was uncertain, it would be wiser to explore (under local anesthesia) than to wait until general septic peritonitis had set in. The treatment of the perforation by quick suture or the formation of a fecal fistula appeared to be the two alternatives—fancy work such as enterectomy with end-to-end anastomosis was not to be recommended; enterostomy had the further advantage of draining the typhoid intestine and keeping it at rest. Dr. F. T. Paul referred to a case in which a perforation twelve inches from the cecum occurred three months after the onset of typhoid fever. In this case the ulceration was so extensive that the perforation could be closed only by excising it and the patient died nine days after the operation. Dr. T. C. Jones mentioned a case in which he had operated successfully last July. A Lascar boy was taken to the Liverpool Infirmary at the end of the second day after perforation of a typhoid ulcer. Simple suture of the ulcer was performed and the abdomen was cleaned of intestinal contents. The boy was transferred to his ship three weeks afterwards. Perforation was rare in Hindus and the infection was comparatively slight. Dr. R. W. Murray said that better results from operative interference would probably be obtained if, as a general rule, the bowel at the point of perforation was brought to the surface and a fecal fistula temporarily established. Such an operation could be quickly performed and would have the great advantage of permitting the inflamed bowel to rest.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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New York, April 13, 1907.

THE EFFECTS OF MATERNAL GONORRHEA ON THE OFFSPRING.

It is a matter of quite widespread popular belief that gonorrhea in the mother has no deleterious effect on the offspring beyond a possible ophthalmia. This, of course, is serious enough, although it may ordinarily be avoided by prophylactic means, but a recent investigation by Lobenstine and Harrar, reported in the *Bulletin of the Lying-in Hospital*, December, 1906, shows that in addition to the production of an ophthalmia, the general nutrition of the infant is likely to fail when the pregnant woman is suffering from gonorrhea. The investigation in question was conducted at one of the large maternity hospitals, where an extensive material was available for the purpose. The work is based upon comparisons made between fifty babies of gonorrheal mothers, one hundred and fifty babies of normal mothers, and fifty babies of non-gonorrheal mothers who presented more or less marked elevations of temperature. The babies in this series of cases were all breast-fed and the period of observation extended over the first ten days of infant life. The gonococcus was demonstrated in the genital tract of each of the mothers alleged to be suffering from gonorrhea.

A detailed study of the results presented by the authors of the paper shows conclusively that the disease process referred to exerts a well marked deleterious influence on the nutrition of the fetus. The average birth weight of the babies of gonorrheal mothers was found to be 297 grams less than those of normal mothers and the average initial loss in weight was also more pronounced in the former than in the latter. Another important fact was that the amount of the loss which was regained by the tenth day was much less in the gonorrheal than in the normal babies. The former also suffered more from fever and intestinal disturbances than the latter. Gonorrhea in the mother is evidently also a frequent cause of premature births, for in this series of cases it amounted to about twenty-two per cent., whereas under normal conditions it occurs only in somewhat over two per cent. Fever in the mother, no matter what its cause, always exerts an unfortunate effect on the child, and we find that the loss in weight which the latter experiences is always very slowly regained.

The writers do not think, however, that the interference with the infant's nutrition is due to any specific toxins excreted by the milk of the gonorrheal mother, but rather that it is due to local effects of the disease, which vitiates the normal nutrition of the fetus, and also to the presence of elevated temperature during the puerperium of the mother. These results are of considerable practical interest as demonstrating the extreme care which should be exercised in treating any gonorrheal inflammation which may be present in the mother during her pregnancy, for the effects of this disease have been shown to exert a general as well as a local effect on the offspring. A knowledge of these facts needs general diffusion, and the deleterious effects of the venereal diseases not only upon those immediately afflicted, but on their offspring, is a subject which demands increased attention from the laity as well as from the medical profession.

THE DERMATITIS CAUSED BY THE BROWN-TAIL MOTH.

DERMATOLOGISTS, and more especially entomologists, have long recognized that contact with the larvæ of certain of the lepidopterous insects is capable of inducing a more or less annoying form of dermatitis, but, in this country at least, the species that possess this property are not very well represented, and until recently the subject has not attracted a great deal of attention. Of late years, however, one of the worst offenders in this respect, the so-called brown-tail moth, *Porthesia* or *Euproctis* or *Liparis chrysorrhœa*, has become so common in certain parts of New England, and appears to evince so decided a propensity to enlarge its habitat that the subject seems well worthy of consideration.

Among the first to point out the part played by the caterpillar of this moth in the production of a peculiar urticarial type of dermatitis frequently seen in the districts infected, were Drs. J. C. White and E. R. Meek, who presented communications to this effect in the *Boston Medical and Surgical Journal* in 1901. It was suggested that it was the hairs of the caterpillar, which are very brittle and easily detached, that were the source of the irritation, and the question arose as to whether the dermatitis was simply the result of the mechanical action of the hairs or was due to a poisonous substance conveyed by them into the skin. Fernald and Kirkland, the authors of the Massachusetts State Board of Agriculture bulletin on the brown-tail moth, as the result of an examination of the hairs, cocoons, and molted skins of the insects made by Mr. F. J. Smith, chemist of the Gipsy Moth Committee, inclined to the view that the effect was purely a mechanical one. As the result of a very thorough investigation of the subject by E. E. Tyzzer (*Journal of Medical Research*, March, 1907), this belief appears untenable, however. He agrees with the preceding observers that the dermatitis is produced by a specialized form of short, barbed spines termed "nettling hairs," but demonstrates that the actual morbific agent is a toxic substance which greatly aggravates the irritation produced by the penetration of the hairs. The nettling hairs are straight, tapering, needle-pointed shafts, provided with numerous recurrent barbs and measuring on the average 0.1 millimeter in length and 0.005 millimeter in thickness at the larger extremity. No pore is visible in the hairs, but their behavior in regard to staining

fluids, and other considerations, make it seem likely that the poisonous substance is contained in a cavity in their interior. They develop in the caterpillar, and are present even in very young specimens. In the process of manufacturing the cocoon the hairs are rubbed off the caterpillar and enter into the structure of the cocoon, and are also found mingled with the long hairs of the brown tuft on the tail of the moth, though it is probable that they simply become entangled in the scales of the moth as it works its way out through the cocoon, and are thus all primarily derived from the caterpillar. They also occur in the egg masses and in the winter webs, and are blown about in the air.

By control experiments with finely comminuted glass wool and the barbed hairs of the harmless tussock moth caterpillar, Tyzzer was able to show that the mechanical irritation alone of the hairs was not sufficient to give rise to the clinical picture of the dermatitis, and the discovery of a peculiar reaction caused when they were added to blood indicated that a soluble chemical substance must be present in them. It was found that if a number of nettling hairs were placed in a drop of blood between a slide and cover-glass, an immediate change took place in the red blood corpuscles. They at once became coarsely crenated, and the rouleaux were broken up in the vicinity of the hair. The corpuscles decreased in size and the coarse crenations were transformed into slender spines which rapidly disappeared, leaving the corpuscles in the form of spheres, the light refraction of which contrasted them sharply from the normal corpuscles. The change of form, in addition to a slight shrinkage, caused the red blood corpuscles to appear much smaller than normal. This reaction takes place so rapidly when the fresh, active, nettling hairs are used that the eye cannot follow its various stages, but by treating these hairs in various ways, the time of this reaction may be slowed so that all stages of transformation may be seen. Control tests with similar minute foreign bodies of different origin were negative.

The next step lay in the demonstration of the fact that the hairs could be deprived of their specific irritating properties by heating them to 115° C. for one hour, though their structural integrity was not impaired by baking at a much higher temperature than this. It was further found that although this active substance was refractory to a large number of solvents tested, it could be extracted with distilled water at 60° C. and by dilute alkaline solutions at room temperature, the hairs so treated becoming inactive. The stabile nature of the substance contained in the hairs afforded an explanation of the fact that the hairs adhering to empty cocoons retain their irritating properties indefinitely, and that underclothing hung to dry in the neighborhood of infested trees and then packed away for a year has been known to produce dermatitis when worn again.

The reaction of the human skin to the nettling hairs of the brown-tail moth varies greatly with different individuals. When these hairs are rubbed upon the skin there is immediately, with most persons, considerable itching, and the inoculated area rises up in the course of fifteen or twenty minutes in the form of a wheal about which there is considerable reddening that changes to white when the skin is stretched. The reaction, however, is not always so prompt to appear, and the severest process observed by the author showed nothing for a period of eight hours after the inoculation. The nettling hairs, even when rubbed into the skin of other individuals, produce only slight reddening, or perhaps very slight elevation, and practically no discomfort. Whether or not decreased alkalinity of the blood forms a factor in the insusceptibility of these persons, is only a matter of conjecture. The dermatitis, as it occurs naturally, is of two types, according to the manner of acquisition. If, for instance, a caterpillar is felt crawling over one's neck, and is thereupon slapped or crushed, and the part afterward thoroughly rubbed and scratched, a marked local dermatitis develops in which the lesions are confluent. There is local reddening and thickening of the skin with the formation of papules or vesicles, as the case may be. A patient in this condition is liable to seek the advice of a physician. On the other hand, if the nettling hairs are distributed by a breeze to underclothes as they hang drying, the dermatitis which results from wearing these clothes is of the nature of a scattered urticarial rash. The lesions in such a case are in the form of small discrete papules which, if not scratched, often show at their summit a tiny vesicle filled with clear fluid. They are generally more numerous on parts of the body where the skin is soft. Many persons having such rashes never consult the physician. Warm, muggy weather aggravates the condition; the reason is that the epidermis is then kept moist by perspiration, and becoming softer favors the penetration of the nettling hairs. The duration of the dermatitis is variable, but the individual lesions usually heal in from seven to ten days. The severest forms are seen during May and June, as it is at this time that the caterpillars reach their maturity.

By microscopical examination of sections of infected tissue from his own person and from experiment animals Tyzzer was able to show that the pathological process in the skin consists of necrosis of the epidermal cells around the nettling hairs, the formation of spaces or microscopic vesicles in the epidermis at the site of injury, and inflammatory changes about the vessels of the corium. Mice inoculated with active nettling hairs presented lesions characterized by a large amount of fluid exudate, while those inoculated with inactivated nettling hairs showed merely inflammation of the nature of a reaction due to the mechanical injury brought about by these elements.

These ingenious investigations of Tyzzer's throw light on the nature and pathology of a condition which, while not very serious, is yet most annoying, and which is likely to become of interest to more practitioners from year to year, as the insect extends its area of activity. They also show that there are more than merely economic reasons making it desirable to spare no efforts to exterminate the pest.

Uniformity in Pharmacopœias.—The Belgian Academy of Medicine at a session devoted to a discussion of the discrepancies in the official pharmacopœias in use in the different countries adopted a resolution recommending the government to take steps toward the formation of an international commission having for its object the establishment of a permanent bureau to work for greater consistency in this respect.

STRONTIUM BROMIDE IN THE TREATMENT OF EPILEPSY.

It will not be gainsaid that a careful regulation of the entire mode of life has a most beneficent influence upon the course of epilepsy, but, despite the well-known objections to the use, and especially the continued use, of the bromides in the treatment of that disease, such a therapeutic course is often rendered necessary for the purpose of diminishing the frequency and lessening the severity of the attacks.

The bromides, like other agencies potent for good, are also capable of doing much harm, and it is the part of the intelligent therapeutist to avail himself of the one influence and to avoid the other. The bromides are serviceable, especially in the treatment of major epilepsy, and they exert little or no good effect on the course of minor epilepsy. Even in cases in which they do good, the bromides sometimes lose their effect, after a time, and it has been found that a combination of two or more bromides is at times more useful than one alone. Moreover, a change in the drug employed is often sufficient to continue a good effect once begun. It is, therefore, advantageous to have at command as large a variety of efficacious agents as possible. Distinct advantages are claimed for the several bromides with respect to solubility, tolerance on the part of the stomach, amount of combined bromine, hypnotic effect, and influence on reflex activity. The potassium-salt is, perhaps, the one most commonly employed, but the sodium salt is more soluble, less irritating, and less depressing to the heart. These advantages of the sodium salt are shared also by the strontium salt, which has at times proved more successful therapeutically than the former.

For the purpose of testing the comparative usefulness of strontium bromide, Dr. J. M. Bennion (*Lancet*, January 5, 1907, p. 10) administered this drug in doses of thirty grains in an ounce of water thrice daily to twelve male and ten female insane patients suffering from epileptic seizures, all other conditions remaining as they had been previously. It was found that strontium bromide acted better in controlling the number and the severity of the attacks than the mixed bromides of potassium and sodium. It rarely caused depression, and in no instance was its use attended with a cutaneous exanthem. The good effects appeared to be more marked in females than in males. It is reasoned that if such good results could be obtained under the conditions of the test, certainly not less good ones are possible in cases of less aggravated character.

The Economic Aspects of Bovine Tuberculosis.

Farmers as a class are certainly far from unintelligent, and there is no doubt that when they shall have been brought to realize the menace, not only to public health but also to agricultural prosperity, involved in a hostile, or even only an indifferent, attitude toward the effort to exterminate tuberculosis in cattle, they will be only too willing to aid those who are trying so hard to convince them of this necessity. We trust the time will soon come when so misguided an exhibition of feeling as that shown by the meeting of Massachusetts farmers who recently assembled in Swansea to protest in no measured terms against the local Health Board's recommendation that the dairy herds of the vicinity be examined for the presence of tuberculous animals, will be an impossibility. Self interest alone should point out the wisdom of accepting, if necessary, some immediate sacrifice in order to avoid the infinitely greater future loss. While it is difficult to estimate with any approach to accuracy the losses to the farmers as a whole from a disease like tuberculosis, concerning which the statistics are still so incomplete, the figures supplied by the Committee on the Prevention of Tuberculosis of the Charity Organization Society of the city of New York are very suggestive. It is stated that there are now approximately 11,000 carcasses of beef and 65,000 carcasses of hogs condemned each year by the Federal meat inspectors on account of tuberculosis. One should not be far wrong in estimating the loss on these carcasses at present prices as $40 each on the beef and $12 each on the pork, according to the United States Department of Agriculture. We should therefore have as the net annual loss from the condemnation of carcasses $440,000 for beef and $780,000 for pork, or a total of $1,220,000. This statement, however, does not include the 647 parts of beef carcasses and the 142,105 parts of hog carcasses which it was necessary last year to condemn for the same cause, and the approximate value of which cannot be ascertained. In addition to the carcasses condemned by Federal inspectors, there are a considerable number condemned by State and municipal inspectors. These are mostly carcasses of dairy cattle killed in the work of suppressing tuberculosis, or of cows no longer profitable in the dairy which are sent for slaughter to the smaller abattoirs. The aggregate number of these has not been ascertained, but in some years it has amounted to several thousand carcasses. The losses to the dairy industry from tuberculosis have been enormous from decrease in milk and depreciation and death of animals. The dairy herds have been affected to a greater extent than any others, and the infection as a rule spread through the cows of a herd until 50 per cent. to 80 per cent. of the animals were affected. In the early stages of the disease the product of the cows is not visibly lessened, but as the tuberculous process develops the animals often become feverish, their milk is diminished in quantity, and they lose flesh and are no longer profitable. The losses from shrinkage of the milk and from the destruction of so many cows must be tremendous, but they have never been definitely determined.

The After-Treatment of Cases of Excision of the Rectum.

In a recent paper by Professor Hochenegg (*Deutsche Zeitschrift für Chirurgie*, vol. 85, 1906) there are noted some particularly valuable suggestions for overcoming the objections attendant upon the operation of excision of the rectum by the sacral route. He thinks that the successful outcome is more especially dependent upon the after-treatment in this than in any other operative procedure. His own experience with this operation extends over a large number of cases, so that his advice may be taken without hesitation. Among the first precautions to be taken with these patients is to keep them on the side rather than on the back, and to have the pelvis at a lower level than the trunk. This prevents the intestinal contents or those of an abcess from getting into the general peritoneal cavity in case rupture takes place. Urinary retention after

rectal operations is frequent, and in cases where the rectum has been excised there is plenty of room for the bladder to be distended backwards, so that the condition may escape attention for a longer period. The patients, of course, do not notice the distention on account of the pain from the wound, or because they are still under the influence of the anesthetic. Even after the catheter has been introduced the bladder will be found to contract with difficulty, so that cystitis is frequent. The latter is favored, moreover, by the close proximity of the posterior surface of the bladder to the operative wound. Systematic bacteriological examination of the urine in these cases has shown that the wall of the bladder may readily be penetrated by infectious material, so that vesical sepsis is often found to be the cause of death in these patients. Careful catheterization should therefore constitute one of the leading features of the after-treatment. Great care must also be exercised in moving the bowels for the first few times, but later on thorough evacuations must be secured so that the general nutrition of the patients may be improved. The results from this operation are at best none too good, so that any suggestions of this kind from so eminent an authority deserve careful consideration.

Typhoid Inoculation in the English Army.

A report on the progress of typhoid inoculation in the English army was recently made by Lieut. Col. W. B. Leishman before the London Pathological Society, as reported in the British Medical Journal of March 23. The author stated that numerous vaccines had been prepared from typhoid bacteria killed at different temperatures, by various chemical agents, by desiccation, etc., and their effects tested by measurement of the various protective substances which developed in the blood of inoculated animals. In several instances, where the results appeared promising, similar tests were carried out on man. The vaccine at present in use was described, and an account given of the mode of preparation and standardization, which had been somewhat modified from Sir A. E. Wright's methods in the light of the experimental work referred to. The bacteria were still killed by heat, but the temperature had been reduced to the minimum degree which would insure death in one hour—53° C. The deleterious effects of higher temperatures had been clearly brought out by some of the experimental work, and it was suggested that the comparatively poor results obtained in some instances in the past may have been due to overheating of the vaccine. The system adopted for ascertaining the protective value of the inoculations was then described, and the result of the inoculation of one regiment was given. This regiment, the only one which had been exposed to a severe epidemic of typhoid fever since the modified vaccine had been in use, had 147 officers and men inoculated out of a strength of 509. They had 62 cases of typhoid infection, with 11 deaths. All of these occurred among the uninoculated with the exception of 2, both being men who had refused the second inoculation; both of these men recovered.

Indications for Operation in the Presence of Diabetic Gangrene.

From a study of the most recent literature, Klemperer (*Therapie der Gegenwart*, January, 1907) concludes that the presence or absence of acidosis constitutes the most valuable differential sign. Diabetic patients without acidosis are not subjects for surgical interference if gangrene supervenes. An expectant treatment is indicated, carefully restricted diet, and patient waiting for the line of demarcation to form. The latter process may perhaps be hastened by the application of proper dressings and by Bier's procedure. In diabetic subjects who present no acidosis, but have a marked albuminuria or signs of granular atrophy, a high amputation should be undertaken as soon as possible after evidences of gangrene appear. Where acidosis is present the patients are likewise to be immediately operated on, as they are otherwise sure to succumb. It is immaterial whether the acidosis was already present or did not appear until after the introduction of a diet free from carbohydrates and a high amputation must be done, even when the original focus is very small.

The Dangers of Elixirs.

Simple elixir, so called, has been adopted as a common vehicle in prescriptions intended for children, yet it is probable that but few physicians realize that this elixir contains a considerable proportion of alcohol which under other circumstances they would hesitate to administer. It remains for a pharmacist to call attention to this fact, and to show that the ordinary doses of the preparation may be productive of considerable harm in those of tender years. Mr. E. F. Heffner, in a paper read at the twenty-ninth annual meeting of the Pennsylvania Pharmaceutical Association, cited a number of common prescriptions in which this might occur. Thus sodium bromide is very often administered in the proportion of one grain to the teaspoonful of simple elixir, every hour or half hour, which means that the child, often less than a year old, is getting about a quarter of a teaspoonful of alcohol at every dose, or the equivalent of two teaspoonfuls of wine or over half a teaspoonful of whisky or brandy. In older children correspondingly larger doses are given, which are not only harmful in themselves, but also counteract the sedative effects of the bromide. Another common prescription contains chloral and bromides in simple elixir, which makes a bright, clear, and palatable solution. But the fact is overlooked that there is a chemical incompatability of chloral and alkaline bromides in alcoholic solution, for on standing the chloral alcoholate will come to the top in a clear layer of about the same color as the rest of the mixture. Unless shaken, the patient is likely to get all the chloral in one dose. These examples need no comment, for the dangerous effect of alcohol in children is of common knowledge, but as Heffner truly states, it is well that the prescribing mind be occasionally refreshed in cases of this kind. In order to avoid any possible danger he advises the use of an aromatic water and simple syrup as a vehicle in prescriptions of this nature.

News of the Week.

The United States Civil Service Commission announces an examination on June 13-14, 1907, to secure eligibles from which to make certification to fill at least five vacancies in the position of medical interne (male), at $600 per annum each, with maintenance, in the Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in any branch of the service requiring similar qualifications. The department states that it reserves the right to continue or terminate appointment at the end of one

year, or to promote the appointee at the expiration of that length of service. The examination will consist of the following subjects, weighted as indicated: Letter-writing, 5; anatomy and physiology, 15; chemistry, materia medica, and therapeutics, 10; surgery and surgical pathology, 20; general pathology and practice, 25; bacteriology and hygiene, 10; obstetrics and gynecology, 15. Two days will be required for this examination. Men only will be admitted. Age limit, 20 years or over on the date of the examination; candidates must be graduates of reputable medical colleges. This examination is open to all citizens of the United States who comply with the requirements. Intending candidates should at once apply to the United States Civil Service Commission, Washington, D. C., for application form 1312.

Conference of the Illinois State Board of Health with the Officers of Medical Societies of the State of Illinois.—This conference was held in Chicago, April 5. Methods looking toward improvement of the public health, the advancement of medical education, the advancement of the interests of legally qualified physicians in the State, were considered. Committees on the following subjects were appointed: Reciprocity, Medical Education in Illinois, Relation of the State Board of Health to Local Health Boards; Examination of Candidates and the Method Pursued in Connection with the Administration of the Medical Practice Act in the Case of Unlicensed Practitioners; To Promote Cooperation Between State Medical Societies and the State Board of Health; Cooperation Between the Four Schools of Medicine. The conference adjourned to meet again April 24, at which time the chairmen of these committees will submit their reports for discussion and ratification or rejection.

Pennsylvania State Hospital for the Criminal Insane.—Plans are under consideration for a new State Hospital for the Insane in Pennsylvania, and options have been obtained upon several hundred acres of land adjoining the site of 600 acres presented to the State by the Delaware and Hudson Railroad. The sum of $150,000 is to be appropriated by the Legislature for the erection of an administration building, which will contain the offices and quarters for the executive officers and accommodations for probably 100 patients. It is the intention of the commission having the matter in charge to build an institution capable of accommodating 1,000 patients at a cost likely to be more than $1,000,000. The New York State Hospital for the Criminal Insane at Matteawan is to be taken as a model, and such improvements will be made as have been found desirable since the building for that institution was constructed.

A New Milk Commission.—A commission consisting of five members has been appointed by Mayor McClellan to consider the advisability of rendering pasteurization of all or a part of the city's milk supply compulsory. The commission is to investigate the entire subject of the milk supply and make recommendations in regard to whatever measures seem necessary to insure its purity. The commission has the following members: Dr. Joseph D. Bryant, Dr. T. Mitchell Prudden, Dr. Rowland G. Freeman, Dr. L. Emmett Holt, Dr. Abraham Jacobi.

The XVIth International Medical Congress.—At the last International Medical Congress held in Lisbon, Budapest was selected as the next place of assembly, and the preliminaries are already in progress. His Majesty the King has assumed the patronage of the congress, and the State and the municipality have each contributed the sum of 100,000 crowns to defray the expenses. Numerous committees and subcommittees have already been appointed, and it has been decided to have twenty-one sections to the congress. The date of opening has been fixed for August 29, 1909, and the sessions will be continued until September 4. The first circular, which will contain much information in regard to details, as well as the statutes, will be ready for distribution in the course of this year. The President of the Congress is Professor Calman Müller, and the General Secretary, Professor Emil Grósz, announces his readiness to give information to inquirers. His address is Budapest, Hungary, VIII. Esterházy-utcza 7.

Mexican Medical Congress.—The Medical Society Pedro Escobedo of Mexico is organizing its second biennial congress to be held in Mexico City, May 28, 29, 30, and 31. President Diaz is honorary president and will open the congress. The president of the society is Dr. Lopez Hermosa, and the secretary is Dr. Enrique Aragon. There will be eleven sections, each comprising two special subjects.

The XLVth International Congress of Hygiene and Demography.—Those in charge of this congress, which is to be held in Berlin, September 23 to 29, have decided to make a special effort to render it possible for those who take part in the congress to see as much as possible of the various public institutions of Berlin and its suburbs. Accordingly, the scientific sessions will always be over by two o'clock, in order to leave the afternoons free for sightseeing. A list of one hundred institutions has been prepared, which may be visited either informally or in groups under the guidance of a qualified authority. A guide book in three languages has also been composed which contains short descriptions of all these institutions.

The XIIth Congress of the German Gynecological Society.—At the congress of this Society to be held in Dresden, May 21 to 25, the following have been selected as topics for general discussion: 1. "The Indications, Technique, and Results of Operations Increasing the Size of the Pelvic Outlet;" 2. "Asepsis in Gynecological Operations;" 3. "The Midwife Question."

The Second International Congress of Physiotherapy will be held in Rome, Italy, on October 13, 14, 15, and 16, 1907, under the presidency of Prof. Guido Baccelli. The general secretary is Prof. Carlo Colombo, Via Plinio, 1, Rome. The officers of the American Committee have been appointed as follows: *President*, Dr. Francis B. Bishop of Washington, D. C.; *Secretary*, Dr. Wm. Benham Snow of this city; *Treasurer*, Dr. Albert C. Geyser of this city. A special committee has also been appointed as follows: Dr. Fred H. Morse, mechanotherapy; Dr. Margaret A. Cleaves, phototherapy; Dr. Geo. C. Johnston, radiography; Dr. Wm. James Morton, radiumtherapy; Dr. Morris W. Brinkman, rhythmotherapy; Dr. Chas. Denison, climatology; Dr. G. Betton Massey, massive cataphoresis; Dr. David E. Hogg, thermotherapy; Dr. Edward C. Titus, electrotherapy.

Mortality in Chicago.—According to the weekly bulletin of the Chicago Health Department, during the week ended March 30, 744 deaths were reported, equivalent to an annual

death-rate per 1,000 of 18.40. The death-rate for the corresponding week of 1906 was 14.80 per 1,000. Pneumonia caused 172 deaths; consumption, 85; heart disease, 55; nephritis, 45; violence, including suicide, 40; cancer, 34, and acute intestinal diseases, 30.

Mount Sinai Hospital.—A considerable number of adjunct physicians and surgeons will soon be added to the visiting staff of Mount Sinai Hospital. The new appointees will rank as assistants to the present adjunct attending staff. The appointments to be made will increase the visiting staff of the hospital by seventeen men, and will affect the following departments: general medicine, general surgery, gynecology, genitourinary surgery, otology and ophthalmology, pediatrics, neurology, and dermatology.

Osteopathy Bill.—An amendment to the osteopathy bill has been adopted by the Assembly at Albany, providing that osteopaths otherwise eligible under the Whitney bill shall pass an examination in surgery before being allowed to practice surgery.

The City of Montreal, owing, it is alleged, to the expense, has decided to discontinue its medical inspection of the pupils in the public schools.

A New System of Identification.—Dr. Prager, an Austrian army surgeon, who has made a special study of the physical characteristics that may be used as means of identification, suggests a system based on variations in the conformation of the palate. He maintains that this method can be used more effectively than that founded on the finger-print principle.

Fire at McGill University.—The MacDonald engineering building of McGill University, Montreal, which was erected about fifteen years ago at a cost of $500,000, was completely destroyed by fire on April 5. The building was equipped with numerous laboratories containing much expensive apparatus, and the loss is estimated at $750,000. The cause of the fire has not been determined.

Porto Rico Tuberculosis Sanatorium.—The San Juan Tuberculosis Sanatorium, the establishment of which is due to the exertions of the Anti-Tuberculosis League of Porto Rico, was dedicated on April 5 by Governor Winthrop. The league, which raised the money necessary to carry out the project was organized in March of last year. The municipality of San Juan appropriated $2,000 for the purchase of a site, and with this money twenty acres of high ground, overlooking the sea, near San Juan, was bought. The sanatorium was then erected with money raised by means of entertainments and private subscriptions. The insular government will contribute $300 a month and the city of San Juan $200 a month toward its maintenance, besides which a number of private donations have been promised.

Lord Lister's Birthday.—Lord Lister on April 5 celebrated his eightieth birthday and was the recipient of an immense number of messages of congratulation from all over the world. This is also almost the fortieth anniversary of antisepsis, for the first of Lister's publications on the subject appeared in the *Lancet* of March 16, 1867, with the title: "On a New Method of Treating Compound Fracture, Abscess, etc. Observations on the Conditions of Suppuration. By Joseph Lister, Esq., F. R. S., Professor of Surgery in the University of Glasgow."

Christian Science in Delaware.—Governor Lea of Delaware has signed the bill directed against the practice of Christian Science in that State. The new law prohibits healers of this sect from giving treatment for any compensation, gift, or reward. State Senator Dr. Thomas C. Moore of Smyrna was largely instrumental in securing the passage of the bill.

Nicotine-free Tobacco.—Numerous so-called nicotine-free brands of tobacco have been offered for sale from time to time, but these products do not seem to have become very popular. Now the French government, which controls as a monopoly the manufacture of tobacco in France, has put on the market a variety of caporal, the tobacco most used, said to have been deprived of its nicotine. To strengthen this assertion, it is stated that whereas rabbits into whose ear veins infusion of ordinary caporal was repeatedly injected, developed the lesions in the aorta resembling arteriosclerosis which have already been studied by experimenters, other rabbits treated in the same way with the nicotineless tobacco remained alive for months, and when killed were found to have healthy aortas.

Meningitis.—Cerebrospinal meningitis is beginning to appear again in some of the Prussian provinces and in Poland.

Foreign Physicians in France.—The regulations governing the practice of medicine by foreigners in France have recently been modified so that conditions are made easier for alien practitioners. From now on, physicians and students of medicine who have qualified for the final examinations in their own countries, if they intend to become naturalized, will be accorded the French degree of Doctor of Medicine on passing not more than three examinations, provided that they already possess the bachelor's degree or one equivalent to it.

Smallpox in Africa.—It is reported that smallpox has become epidemic in the German possessions in Kameroon, and the health authorities are making an effort to vaccinate the entire native and foreign population.

Industrial Dusts.—The American Institute of Social Service has received from Dr. Sommerfeld of Berlin a valuable antituberculosis exhibit for the department of industrial hygiene in its Museum of Security. There are forty-five specimens of different kinds of dust, mineral, animal, and vegetable, produced in various industries, and likely to be inhaled by workmen. The same number of photographs show the microscopical characteristics of these various dusts. Models in wax represent human lungs as they are affected by occupational dusts; other models show normal lungs for comparison, while still others show the effects of industrial poisons on the system. An advisory committee of the editors of the great technical papers has been organized to cooperate with the Institute in the work of protecting life and limb in industrial workers.

Race Suicide in Germany.—The statistics of the German Imperial Census Bureau relating to the births and deaths of the year 1904, which have just been published, show that the fecundity of married couples, which up to the year 1903 had been gradually declining, was slowly rising again.

The City of Düsseldorf, Germany, has granted a building site on which a local organization of women is to erect a building to serve as a training school for nurses in which young women from any part of the empire will be given free instruction in nursing.

Gift to Syracuse Hospital.—Mrs. Russell Sage has presented $5,000 to the Woman's Auxiliary of the Hospital of the Good Shepherd of Syracuse, N. Y., toward the $10,000 endowment fund for a free bed in that institution.

Bequests to Charities and Hospitals.—The will of the late William C. Egleston of this city, who died on March 25, filed for probate last week, contains charitable and educational bequests amounting to $275,000, of which Yale University and St. Luke's Hospital will each receive $100,000. The bequest to St. Luke's Hospital is to be used in endowing as many free beds, both adult and children's, as possible, these to be known as the "William C. and Ella Egleston beds," in memory of the testator and his wife. The other charitable bequests include $20,000 to the Sisterhood of St. Mary's Society of this city, to be devoted to the uses of St. Mary's Free Hospital for Children, in memory of the dead children of the testator, Louise and Adelaide Egleston. The New York Institution for the Blind will receive $15,000 under the will, and the New York Institution for the Instruction of the Deaf and Dumb $15,000.

Daniel Sheehan, who died in St. Vincent's Hospital on March 20 last, leaves $500 each to Sister Benign of St. Vincent's Hospital, to the Superior of the Little Sisters of the Poor of New York, to the Superior of the House of the Good Shepherd, to the Superior of the House of the Holy Family, to the president of the Mission of the Immaculate Virgin, to the Superior of St. Joseph's Hospital, the Bronx; to the Superior of the Foundling Hospital, East Sixty-eighth street; to the Mother Superior of the Dominican Convent of Our Lady of the Rosary, and to the Superior of the Catholic Hospital for Consumptives at Spuyten Duyvil.

Mount of Olives Hospital.—The foundation stone of the new German hospital on the Mount of Olives was laid April 1 in the presence of the Governor of Jerusalem, the other local officials, and many spectators. The land was given by Emperor William, and he was officially represented at the ceremonies.

Iowa City Homeopathic Society.—On March 28 this Society was organized and Dr. Leora Johnson elected president and Dr. T. R. Hazard secretary.

Boston Society of Examining Physicians and Surgeons.—At a meeting held on April 3 this Society was organized and officers were elected as follows: *President*, Dr. Francis D. Donoghue; *First Vice-President*, Dr. Frank E. Allard; *Second Vice-President*, Dr. Edward M. Greene; *Secretary*, Dr. Charles T. Cutting; *Treasurer*, Dr. Charles O. Kepler. There will be three meetings a year, and all physicians and surgeons in good standing who examine regularly for some association or corporation are eligible for membership.

Hardin County (Ia.) Medical Association.—At its annual meeting held in Eldora on March 29 the following officers were elected for the ensuing year: *President*, Dr. J. J. Miller of Ackley; *Vice-President*, Dr. C. O. Mabie of New Providence; *Secretary*, Dr. W. E. Whitney of Eldora; *Treasurer*, Dr. R. Thornton of Ackley.

For a Dutton Memorial.—A movement is on foot in England to collect a fund of $50,000 to endow a Dutton Memorial Research Professorship in tropical diseases in honor of Dr. Joseph Everett Dutton, the discoverer of the *Trypanosoma gambiense*. He died of tick fever in Kasongo at the age of twenty-nine years, while a member of a commission investigating this disease.

The Graduate Medical School of Cincinnati opens for the first time this spring. The teaching force is the faculty of the Medical College of Ohio, the Medical Department of the University of Cincinnati, with which it is connected.

The Late Dr. George Bingham Fowler.—At the stated meeting of the Medical Society of the County of New York, held Monday, March 25, 1907, the following preamble and resolution was unanimously adopted: *Whereas*, Death has removed from us one of our ex-presidents, Dr. George Bingham Fowler, a distinguished and respected member of this Society; therefore, be it *Resolved*, That we deeply regret the loss we have sustained, not only in our individual relations to him, but also in the various public and consulting positions which he held, and be it further *Resolved*, That we extend our deepest sympathy to the bereaved family of the deceased, and that a copy of these resolutions be spread in full upon the minutes of the Society and be published in the medical papers. (Signed) Wendell C. Phillips, Edward D. Fisher, Charles N. Dowd, Committee.

Obituary Notes.—Dr. M. A. Sheffield of St. John, N. B., died suddenly of heart disease on March 30. He was born in Cornwallis, N. S., in 1837, and received his medical education in the Bellevue Hospital Medical School. For five years he practised in Berwick, but in 1872 removed to St. John, where he had since resided.

Dr. J. N. Knight of Cliftondale, Mass., died on March 30 after an illness of about a year's duration. He was born in Salem in 1862, and was graduated from the medical department of Boston University in 1883. Shortly after graduating he settled in Cliftondale, and had practised there ever since.

Dr. William D. McCarthy of San Francisco, Cal., died on March 14 after a long illness consequent on service in the Philippines during the Spanish-American War. Dr. McCarthy was born in Boston in 1861, and, after receiving his preliminary education in St. Mary's College, was graduated from Cooper Medical College in the class of 1885. At the opening of the Spanish-American War he enlisted in the First California Volunteers, and served as surgeon in the Philippines until the regiment was recalled two years later.

Dr. Edward L. Carpenter of Louisville, Ky., died on March 24, at the age of forty-one years. He was the son of the late Dr. L. M. Carpenter of Louisville, and received his medical education in the University of Louisville.

Dr. Albert M. Warner of Waukesha, Wis., died on March 16, at the age of ninety-one years. He was born at Andover, Vt., and was graduated from the Vermont Medical College at Woodstock in 1842. After practising for a time in New York State, he removed to Waukesha in 1845, and had resided there until about three years ago, when he went to live with a daughter in Chicago.

Dr. A. C. Simonton of Seattle, Wash., died on March 27, at the age of sixty-five years, after a long illness. He had practised for many years in Des Moines, Ia., but eight years ago removed to Roslyn, where he was one of the surgeons at the Northern Pacific mines.

Dr. Charles Francis Reilly of Woonsocket, Mass., died on March 31 of heart disease. He was born in Blackstone in 1872, and received his medical degree from the College of Physicians and Surgeons in Baltimore in the class of 1902. After his gradua-

tion he practised for a time in Everett, Mass., and Millville. About a year ago he removed to Woonsocket.

Dr. Harry E. Burdett of St. Paul, Minn., died of heart disease on March 28 at the age of forty-five years. He was a native of Belleville, Ont., but had practised in St. Paul for over twenty years.

Dr. J. N. Taylor of Lynchburg, Tenn., died suddenly on March 29, at the age of seventy years. He had served with distinction in the Confederate Army and had practised for over thirty years in Lynchburg.

Dr. John M. Winfree of Richmond, Va., died on March 31 at Raleigh, N. C., after a long illness. He was graduated from the Medical College of Virginia some years ago, and at once began to practise in Richmond, but in 1905 was obliged to give up active work on account of ill health.

Dr. J. P. Crawford of Davenport, Ia., died on March 25, at the age of fifty-one years. He was prominent in medical circles, and was for many years surgeon for the Chicago, Milwaukee and St. Paul Railroad Company.

Dr. Clarence E. A. Buckley of Halifax, N. S., died on March 28, at the age of twenty-five years. He was a son of Dr. H. F. Buckley of Halifax, and was graduated from Dalhousie Medical School in 1904. He practised in Thorburn until about a year ago, when forced to give up active work on account of illness.

Dr. James S. O'Sullivan of Randolph, Mass., died on March 25 of pneumonia, at the age of forty-two years. He was a native of Worcester, graduating from Holy Cross College, and later from Harvard Medical School. He practised for a time in West Quincy, but for the past eight years had been a resident of Randolph.

Dr. Frank Swartzlander died at Doylestown, Pa., on March 31, at the age of sixty-four years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1863. During the Civil War he was assigned to the Military Hospital in Philadelphia, and later to the Seventy-fourth Pennsylvania Volunteers. At the battle of Gettysburg he was surgeon of the operating staff of the field hospital of the Eleventh Army Corps. Later he was assigned to join Sherman in his march to the sea, meeting the army at Savannah, where he was placed in charge of the auxiliary military hospital. He remained in the hospital service until the end of the war.

Dr. Ashbell P. Grinnell of this city died on April 6 after a long illness, the immediate cause of his death being septic endocarditis. Dr. Grinnell was graduated from the Bellevue Hospital Medical School in 1860, and was for years Dean of the Medical College of the University of Vermont. Of late years he had interested himself in forensic medicine, and at the time of his death he was vice-president of the Medico-Legal Society.

Dr. George R. Shepherd of Hartford, Conn., died on April 6, at the age of sixty-two years. He was graduated from Yale Medical School in 1866 and was Medical Director of the Connecticut Mutual Life Insurance Company.

Alcohol in Diabetes.—Benedikt and Török in the course of investigations on the rôle of the fats in the formation of the acetone bodies in diabetes studied the effect of alcohol in this disease. They found that on adding about three ounces a day of brandy to the dietary a marked diminution in the amount of acetone bodies resulted. They conclude that alcohol is useful because it reduces the sugar excretion and saves albumin.—*Zeitschrift f. klin. Medizin.*

Correspondence.

THE VENEREAL PERIL.

A POSSIBLE STEP TOWARD ITS REMOVAL.

To the Editor of the Medical Record:

Sir:—"For the safety of the public," is a cry often heard to-day, and truly much is being done in many directions for the betterment of conditions generally. The various boards of health throughout the country have accomplished a great deal by their vigorous fighting to lessen and keep down the spread of tuberculosis, and hope eventually to eliminate that dread disease entirely. The same boards have dealt admirably with many other forms of disease and conditions that have proved a menace to the public health, so that to-day we stand protected, or nearly so, from many of the commoner forms of contagion and infection. There is, however, one subject that has been overlooked, apparently, or possibly it has presented itself, or been presented for consideration, but because of its nature, which necessarily involves much deep thought and attention, it has been impossible for the several boards or commissions of public health to agree upon a suitable course to pursue, and which, in the meantime, has been allowed to run riot. The condition to which I refer is the venereal peril.

When we stop to consider the awful ravages that are continually presenting themselves as a result of infection from gonorrhea or syphilis, the thought—How can we prevent a furtherance of these conditions?—is very apt to arise. The profession is only too well acquainted with the existing state of affairs, but the laity, who know little or nothing of the nature or manner in which these dread diseases are spread—in fact, who are thoroughly ignorant of the awful suffering extant as a result of infection by one or the other condition—are the ones who should in some way be enlightened and thereby better protected. The parent who, because of a sense of what he or she may consider modesty, hesitates to speak to the budding youth or maid on a subject that seems too delicate and complex for the presumably tender and sensitive mind to grasp, is guilty of gross negligence and such neglect on the part of parents who are at all aware of the existence of present conditions is, in my mind, almost criminal. Often the parent hesitates to speak on the subject because of insufficient knowledge, and just here is where the public health commission can begin a most magnificent work. But little or no attention is given—certainly not the proper attention—and why? Is it because the subject, being of the nature that it is, is considered indecent and not fit for public discussion? Should modesty of speech be permitted to stand in the way of the safety of the public health? It is a duty that we (the profession) owe, as protectors of the health and well-being of the community, of the world at large, to see that proper means are taken to obliterate this appalling condition which now exists. Shall the younger generation and those to follow continue to become the innocent recipients of these frightful contaminations, and all simply because of the fact that the public is not sufficiently enlightened? Something must be done and that promptly or the untold sufferings will continue and increase until they shall have reached a stage where it will be almost impossible to offer relief.

If the young man or young woman arriving at a time or age when the sexual appetite begins to make demands on the mental proclivities for satisfaction, were sufficiently well informed and apprised of the possible dangers concomitant with a general disregard for virtue and morality, how much good would result. How many young women would be saved from the tortures of an infected uterus, pus tubes, and inflamed ovaries. How many infants would be spared the agonies of an ophthalmia or the sufferings that follow an inherited syphilis.

As a step toward obliterating all this I would suggest and recommend a graded system of lectures to be delivered to the children of our public schools and institutions as a part of the regular curriculum, beginning with children of an age or sufficiently advanced to understand the principles of contagion and infection. Pamphlets dealing with the subject could also be supplied by health officers to parents for home instruction. Special lectures could be arranged for older boys and girls and men and women, and still others for the unfortunates who have suffered and are now in the throes and who, learning of the enormity of the affair, would prove a factor in controlling the spread of the peril. Much can be done by the health boards in passing amendments to the law, compelling the removal from public use of the cigar cutter, drinking cup, etc., and also in

insisting that all restaurants and hotels, even the inferior ones, of course, boil and properly disinfect all towels, linen, napkins, etc., in public use.

The subject, you will admit, is an all-important one and worthy of serious consideration. Much more can, and doubtless will, be said on the subject, but the time is now ripe, and quick and strong action should be taken in an effort to crush this death-dealing monster that pollutes the race.

W. A. Funk, M.D.,
Assistant Clinician, Dermatological Department of the New York University and Bellevue Hospital Medical College Clinic.
East Orange, N. J.

THE FRESH AIR TREATMENT OF PNEUMONIA.

To the Editor of the Medical Record:

Sir:—Our medical papers are of late advocating a new treatment of pneumonia, namely, the fresh or cold air treatment, representing this treatment as a rather new way of dealing with this disease. In this case, as in a good many others, history repeats itself.

I cite Juergensen in Ziemssen's Handbook of Special Pathology and Therapeutics, Leipsic, 1877, page 174, translated from the German edition: "A pneumonic patient above all needs fresh air. If we can procure air without producing a draught, so much the better; but if we have to choose between foul air and draught, let us choose the draught and our patients will do well. Even if we let them take a bath under these conditions, and their wet skin is exposed to the draught, there is no danger. Very often we have removed a pane of glass from a window, or even the whole window, to let in fresh air, and we never have observed complications, such as bronchitis, pleurisy, and pericarditis; and we have never noticed a bad effect in the sequelæ of pneumonia, such as chronic pneumonia, phthisis, and so on. We would therefore not hesitate to expose our patients to the air until the temperature goes down, if we thought that the temperature should be reduced and cold baths could not be used."

Juergensen, by the way, also recommends cold baths for the treatment of pneumonia.

Arthur Stern, M.D.
Elizabeth, N. J.

ESPERANTO.

To the Editor of the Medical Record:

Sir:—Your remarks in the Medical Record of March 30 relating to the pronunciation of Esperanto are apt to be misunderstood and so create the impression as though Esperanto were pronounced so diversely by the different nations that they hardly understand one another. I would ask you, therefore, to allow me space in your valuable paper for a reply obviating this impression. There is no natural language which is pronounced precisely alike everywhere in its own country. The university professor born in Leipzig pronounces the German differently from the professor born in Berlin, the latter differently from the one born in Munich. The English of a Bostonian college graduate sounds differently from the English of a New York college graduate. Something similar is true of the French language, etc. Now let me tell your readers that the differences in pronunciation of Esperanto are much slighter than those met with in any living natural language. I can make this assertion from my own experience and investigations, as well as from the facts brought out at the two international congresses of Esperantists. At the Boulogne congress in August-September, 1905, 1,200 delegates from twenty-two different countries were assembled. Many of them spoke Esperanto without the slightest difficulty in understanding one another. At the second congress in Geneva in August-September, 1906, twenty-three countries were represented. Many of the delegates of different nationalities conversed in the new language so freely and easily and with such fluency and even loquacity that the uninitiated gained the impression they were speaking their mother tongue. Differences in pronunciation noticeable at the first congress to the trained ear of the student of the subject of pronunciation were much less noticeable at the second congress.

Just because the pronunciation of Esperanto is extremely simple, the first manuals of the language paid little attention to it, and were rather careless in its exposition. Noticing this, I made careful observations of the existing differences and investigated specially the pronunciation by discussion with a European Esperantist living in the United States, but having learned the language in Europe, and who had known and spoken with its inventor; further, by extensive correspondence with the most prominent European Esperanto authorities, including the ingenious creator of Esperanto, Dr. L. Zormenhof. The result of my investigations is laid down in my text book.

Up to the present time Dr. Zamenhof is the recognized incontestible, official authority in everything pertaining to Esperanto, and no author of a text book has contradicted him in matters about which he was explicit. Neither am I at variance with the illustrious inventor of the new language. The passage in my book which seemed to you to contradict Dr. Zamenhof on the contrary shows expressly that he teaches the same pronunciation of a certain diphthong as I do, only that the inference which he, in one of his letters to me, made from this pronunciation was "unintelligible" to me.

The differences in the pronunciation of Esperanto are gradually disappearing, since the Esperanto authorities have begun to pay more attention to pronunciation. But even if they were never to disappear, they are, as stated above, of such a slight degree that they would never disparage the language or even cause it to undergo the same fate as Volapük.

Dr. Max Talmey.
62 West 126th Street.

OUR LONDON LETTER.

(From Our Special Correspondent.)

INSANITY—CHYLURIA—KING EDWARD'S HOSPITAL FUND—INCORPORATION OF KING'S COLLEGE WITH UNIVERSITY—OBITUARY.

London, March 22, 1907.

Insanity has been prominently before the profession and the public during the last few days. The most important contribution to the subject is the course of Lumleian lectures at the Royal College of Physicians by Dr. Geo. H. Savage. He opened with a naive confession of pride at his selection, followed by doubt about his subject, and then a dread of failure. But his life's work indicated to him something connected with insanity and though the field had been partly occupied he happily decided that he might add something from his own special experience. He has thus given us interesting food for thought. Admitting a considerable increase of the insane, he has no dread of the future of the race and he endeavored to show that much insanity does not depend on material brain disease, but has reference to the complexity of society and the numerous social misfits which occur, many persons being treated as insane because they are out of harmony with their surroundings. He proposed no fresh classification, holding with Hughlings Jackson that alienists are more like market gardeners than botanists—have groups for convenience, but no natural orders. Unsoundness of mind often occurred without anything that could be called insanity arising. The medical man looked for brain change, the lawyer for responsibility, society considered only whether a person was a danger to himself or others. There could, therefore, be no common pathological basis for the various classes, and the lecturer maintained that there are many cases in which there is no ground for suspecting any material change in the nervous system. Insanity was not a definite disease, but a negation. There was no fixed standard of sanity, and insanity was often a question of degree. Normal feelings might pass into delusions, and Dr. Savage did not expect to find a seat in the brain for such ideas. He accepted what Hughlings Jackson had written in his "Factors of Insanity" as to the removal of the higher spheres of control and letting loose the lower. Referring then to some typical forms, the lecturer said we may have mental disorder marked chiefly by loss of this higher control, varying in degree from hysteria to acute mania; parallel to this, delirium from toxic agents may be noted, showing hallucinations of the senses. Melancholia ranges from hypochondriacal self-consciousness to profound stupor. This seems increasing, as does dementia, general paralysis, and senile disorders. Dr. Savage believes there is an increase among the simply neurotic, that neurasthenia is also on the increase, and such conditions are at the root of a large number of cases of delusional insanity, chronic recurrent insanity, and paranoiac insanity, which fill our asylums.

In his second lecture Dr. Savage dealt with heredity, combating the common idea that insanity of all forms was inherited. Consanguineous marriages were not dangerous from merely near kinship and the old idea that the deaf and dumb or weak minded owed their infirmity to marriages of cousins had not been confirmed. There was indeed a tolerably definite neurotic stock or type, but in

his opinion insanity as such was not transmitted. Still, in the insane there was a strong tendency to produce offspring who were unduly unstable. But insanity, like genius and all highly specialized mental capacities, tended to extinction or to nervous instability in the following generations. Great inventors, millionaires, and persons of exceptional genius all ran a great risk of having degenerate children. The general tendency of highly gifted parents was either to have no children or to have neurotic offspring. So said Dr. Savage, but the impressions left by reading many biographies seems a different one, though of course such impressions are not to be trusted. The lecturer next remarked that tricks or habits often reappeared in children—even the handwriting of children frequently resembled that of their parents, though here again I might interpolate a doubt as to the cause assigned, for a child often learned from its father or mother, or if not so taught might delight in imitating a parent's rather than a tutor's writing. This imitative disposition seemed to be recognized, if unconsciously, in Dr. Savage's next point, the great danger of association of an insane parent with a child. He had known children living with an insane parent to develop the same or similar delusions. The insane or highly neurotic parent tended to pass on, if anything, special forms of insanity, which might be called habit insanities and a tendency to break down at certain epochs of life, making them incapable of bearing normal physiological stress. But with that there was an extraordinary power of recovery, so that patients of a highly neurotic stock might have dozens of attacks of violent mania and retain till the end of a long life mental ability. The conclusion was that there was no such thing as transmission of any form of insanity direct, but there was a danger of the passing on of a nervous instability which led to mental disorder resulting from slight or even normal physiological strain.

On Tuesday a paper was read at the Royal Statistical Society by Mr. Noel A. Humphreys, dealing with the "alleged increase of insanity." In his opinion no proof whatever had been advanced of such increase. He pointed out the fallacy of regarding the number of certified and registered cases as a proof of increasing prevalence. There was a reserve of mental unsoundness outside the control of the lunacy commissioners, though that had been declining of late owing to greater accuracy of registration and changes in the degree of insanity for which asylum treatment was deemed desirable. Moreover, people appreciated the improvement effected by asylum treatment and were less desirous of resuming personal care of discharged cases. There had been a constant decline of the discharge rate (including deaths), accounting for the accumulation of cases in the asylums. Mr. Humphreys demanded a scientific definition of what constituted insanity as a necessary preliminary to a solution of the question whether the prevalence has increased or decreased.

On Tuesday Mr. Gladstone (Home Secretary) received a deputation from the Lancashire authorities on asylums and the poor law to urge more economical housing of chronic lunatics. He replied to the deputation that he understood the general view of experts to favor a higher standard of medical treatment, diet, housing, etc., for curable cases. Of course special effort was desirable whenever there was a chance of a cure, and he was sure that all reasonable and proper care would be given to others. He therefore considered differential treatment was absolutely justifiable and would cooperate with the deputation in that object.

A case of chyluria in England was described by Dr. A. F. Hertz at the Medico-Chirurgical in a sailor of 66, admitted in October, 1906, with a history of milky urine for about nine months. He had been in India twenty years previously. The opacity was due to fat; proteid was always found, dextrose never. The fat and proteid disappeared with a fat-free diet if he rested after meals. But fat in food gave rise to proteid and fat in the urine as soon as thirty-three minutes—the maximum amount being about five hours later, and the last traces about eight hours. Exercise or the upright position increased the amount. At the post mortem the thoracic duct was obstructed about 7 c.m. above the diaphragm. The abdominal lymphatics were dilated and there was an anastomosis between the lacteals and the lymphatics on the right side of the bladder, inside which fibrin adhered to the mucous membrane at a point where dilated lymphatics were, and which perhaps marked the spot where the contents of the lacteals and lymphatics of the leg had penetrated. It was suggested that the case might be due to an old infection by filariæ which had died out but left the obstruction brought on. Non-filiarial cases might be due to another parasite or to pressure on the duct by a tumor, the most frequent being caseous glands.

The annual meeting of King Edward's Hospital Fund was held this day week, the Prince of Wales as president occupying the chair. The report stated that the total income had amounted to £110,955 and the sum distributed to £111,000. Donations and subscriptions showed a decrease of over £13,900. Of this, £10,000 represents the loss of the generous subscription of the late Mrs. Lewis-Hill, but by her death the fund comes into the capital sum of £250,000, besides a residue of the estate not yet ascertained. Legacies are acknowledged from Mr. Beit, £20,000; Mr. Nicholas, £10,000; Lord Grimthorpe, £5,000, and Mrs. Finnie's estate, £6,700. The League of Mercy contributed £18,000, an advance of £3,000 on the previous year. Every eligible hospital applying to the fund for a grant was inspected and reported upon and the council expressed pleasure at noticing a diminution of expenditure in several hospitals in which the cost per bed seemed to have been excessive. The revision of the uniform system of hospital accounts was brought to a successful conclusion during the year 1906; the three funds have adopted the system which is now in force. Last year H.R.H. the president appointed a finance committee in view of the magnitude of the fund's invested property. He also expressed a desire to place the fund on a defined footing, by incorporation by an act of Parliament. With the approval of the King, steps are being taken to seek the consent of Parliament to a bill for accomplishing that purpose.

King's College issued its appeal on Saturday for funds to carry out its incorporation in the University of London. One hundred and twenty-five thousand pounds is required and an additional £20,000 to keep up the theological faculty, for this is necessarily separated and independent on account of the undenominational character of the university. The council point out that during the last ten years they have made great efforts to improve the college, have reduced the debt by £56,000, and secured £14,000 for the extension and equipment—most of this being provided by private friends. They, therefore, think they may now reasonably ask institutions and individuals interested in higher education in London to help them complete the work. The debt began with the opening of the college seventy-five years ago and has grown with the effort to meet the requirements. The scheme of incorporation follows on the lines of that of University College. This, however, was undenominational, and therefore it is only the secular side of King's that will be completely incorporated. The faculties of Arts, Law, Science, Engineering, Medicine (preliminary and intermediate) and the women's department at Kensington will be continued and governed by the Senate through a committee or delegacy. The hospital and advanced medical school has to be under separate management and is transferred to the new suburban premises toward the building on which £170,000 has been collected and much more is required. The separation facilitates the incoporation, as the university cannot be connected with the management of a hospital, nor can it be responsible for one of the twelve advanced medical schools of London.

Surgeon-General Sir John Harry Innes, K.C.B., died at Florence on the 12th inst., aged 87. He graduated in 1842 and entered the Army Medical Department. He served in the Crimea, through the Indian meeting and later in Afghanistan; was Sanitary Commissioner in the Franco-Prussian war, 1870, and P.M.O. in India from 1876 to 1880. He was appointed Surgeon to Queen Victoria in 1872 and created K.C.B. in 1887.

Dr. Samuel Barker, Consulting Physician to the Children's Hospital at Brighton, and one of its founders, died on the 11th inst., aged 86. He was M.D., St. And., 1858, and had retired for many years. He held some other appointments at Brighton, where he had practised for about fifty years and had the respect of all classes. He made a number of contributions to medical literature, chiefly on subjects connected with the health and diseases of children.

Facial Neuralgia and Radiotherapy.—Béclère and Harrey have reported a case of facial neuralgia in which the pain disappeared after a course of radiotherapy. The patient was attacked seven years ago with an epileptiform facial neuralgia. Several surgical interventions were performed, but were followed by a subsidence of a violent pain for only a few months. Finally recourse was had to radiotherapy. This treatment resulted in the complete disappearance of the pain after four sittings eight days apart. The rays were directed toward the interior of the mouth against the alveolar border. The neuralgia has not returned since April 25, 1905.—*La Tribune Médicale.*

OUR VIENNA LETTER.

(From Our Special Correspondent.)

ANNIVERSARY CELEBRATIONS—INCREASE OF MEDICAL FEES—TUBERCLES OF THE LIVER—SUBCUTANEOUS USE OF GELATIN IN CARCINOMA—LEUKEMIA WITHOUT LEUCOCYTOSIS—AN OPERATION FOR CLEFT PALATE—MORTALITY FROM TUBERCULOSIS AND CANCER.

VIENNA, March 20, 1907.

On March 16 the Royal Institute of Operative Surgery celebrated its centenary. This institution has as one of its functions the education of surgical assistants who later enter the clinics in order to perfect themselves by several years' work under the tutelage of eminent specialists. Many prominent operators have received a portion of their training in the Institute; in fact, nearly all the surgeons of the Austrian clinics of the last decades excepting Prof. Billroth, who himself during his work in Vienna was director of the Institute. A large number of well known foreign surgeons have also been workers in the Institute. Receptions were held in the two university clinics, in conjunction with which interesting cases were presented and the clinics were inspected. At the first clinic the guests were received by Councilor von Eiselsberg, who in a short address outlined the revolution in surgery that had been effected by the development of anesthesia and of antisepsis. He referred to the approaching eightieth birthday of Lord Lister and said that the great English surgeon must today be experiencing the delightful conviction that thanks to his discovery millions of lives had been saved that otherwise would have been lost. Prof. von Eiselsberg then referred to the operation of appendectomy, which he termed the most modern of operations, and he presented a statistical table of 700 cases intended to show its value. The assemblage then passed on into the second surgical clinic, where Councilor Hochenegg spoke on the increase in the scope of operative surgery during the last fifty years. In the year 1841 in this clinic 56 major operations were performed, in the year 1867 120, in 1887 512, and in 1896 713. In the year 1869 no case of appendicitis came to operation, in 1899 there were 14 cases, and in 1896 128 cases. The number of gallstone operations in 1899 was 2 and in 1906 was 20. The speaker then presented several patients who had recovered after unusual surgical conditions. A collation given by the chiefs of the two surgical clinics formed the conclusion of the exercises.

All of the participants in this centenary celebration, on the evening of the same day took part in a testimonial meeting held in the assembly room of the medical society in honor of Lister's eightieth birthday. The meeting was presided over by Councilor Chrobak and the address was delivered by Prof. Fraenkel. He said that two considerations rendered the present celebration a solemn one, one of them was the retrospect over the hundred years of activity of the surgical Institute and the other was the entrance of Joseph Lister, the great reformer of surgery, into the ninth decade of his illustrious life. After pointing out the true altruism that pervades the medical profession in its labors for the good of the populace, he closed with the quotation from the Roman Emperor who said, "Melius est unum servare civem quam mille occidere hostes."

To conclude the centenary celebration the chiefs of the university clinics, Profs. von Eiselsberg and Hochenegg, had invited the guests to a reception in the university. At 9 o'clock in the evening almost all the professors, instructors, and assistants of the medical faculty, prominent members of the three other faculties, as well as a large number of eminent physicians and former graduates of the Institute from all countries assembled in the reception rooms. The dean of the university and his suite entered the hall in solemn procession. From the rostrum, beside which the banner of the university had been planted, the rector delivered an address of welcome. He expressed his pleasure at seeing all the members of the medical school united again in the university, since the separate medical institutes were situated outside of it, and emphasized the value of the spirit of unity conferred by the university. Dr. Scholz then delivered an address of thanks to the academic senate in the name of those who had enjoyed its hospitality. Hereupon the guests formed informal groups in the adjoining rooms in which the supper tables had been placed, and old classmates who had not seen each other for years celebrated their reunion.

All through Austria-Hungary there has been of late such an increase in the cost of living that even the physicians have decided not to hold back any longer and have concluded to increase their fees by 50 per cent. Many circumstances have of late years contributed to cause a diminution in the prosperity of the medical profession, especially overcrowding of the profession, the reduction in fees caused by the lodges, and the foundation of charitable institutions on a large scale by wealthy persons, so that an effort to increase the income of the physician seems fully justified.

Dr. Schnitzler has removed by operation large solitary tubercles of the liver from a young man. The patient, who several years before had been operated on for tuberculous glands of the neck, two years ago began to complain of pain in the region of the liver. The organ was enlarged and on palpation was found to be nodular. Antisyphilitic treatment, founded on a diagnosis of hepatic gummata, was without effect. At an exploratory laparotomy it was seen that the right lobe of the liver contained numerous white, hard tumors resembling gummata in appearance. After the operation a temporary diminution in the pain and in the size of the tumors was noted, but as the improvement was not of long duration laparotomy was performed. From both lobes of the liver a number of hard tumors, some of them almost as large as the fist, were removed: hemorrhage from the incisions into the liver was controlled by packing with adrenalin tampons. On microscopical examination it was found that the tumors were tubercles, the occurrence of which in such size is a great rarity. At present the patient's condition is excellent.

Hauer has made numerous observations on the subcutaneous administration of gelatin in carcinoma, and in the course of the past two years has frequently resorted to injections of a 10 per cent. solution of this substance in the treatment of hemorrhage due to carcinoma of the uterus. The general condition of these patients improved greatly, and in some instances the cancerous process itself was changed for the better. In order to investigate the matter further, observations were made in thirty-eight cases of carcinoma and two of sarcoma. The hemorrhages in most cases ceased after one or two injections and the greater proportion of the patients showed a considerable increase in weight. The pain diminished, the general condition improved, the cachexia was lessened and the mucous membranes regained their color: the odor of the discharges became much less offensive and in some cases the growth itself gave evidence of retrogression. The ulcers became less purulent, their size diminished and in some of the cases clinical changes were observed that appeared to justify the opinion that the primary lesion had been cured. The metastases were less favorably affected, though here also the process was arrested. Gelatin is to be considered as the best palliative remedy in carcinoma, and in inoperable cases is a most useful means of alleviating symptoms. The injections of 40 g. each are given at intervals of one or two weeks for months. To explain the action it is supposed that cytolysins are formed in the body, or that the gelatin causes thrombus formation in the arterioles of the new growth.

A case of leukemia without leucocytosis has been observed by Sluka in a nine-year-old girl. The diagnosis of acute lymphatic leukemia was suggested by the general symptom complex, consisting of pallor, puffiness of the face, general glandular enlargement, cutaneous hemorrhages, and the rapid onset of the condition. The blood picture caused astonishment, therefore, for it presented a leucopenia with a predominance of the lymphocytic elements, which were of the type common in acute lymphatic leukemia. Apparently the number alone of the white cells is not to be considered in the diagnosis of acute lymphatic leukemia, but the most important feature is their morphology. According to Türk, such cases should be termed acute alymphemic lymphomatosis. The prognosis is bad, for in all the cases so far observed death has resulted in less than a year, usually in four to six months. Roentgen ray treatment would hardly be indicated in such a case, since it would not be desirable to decrease still further the small number of leucocytes present.

Moszkowicz has operated on fourteen children with congenital cleft palate by a method that was suggested as long ago as 1824, but which has since fallen into disuse. It consists in the formation of a flap of mucous membrane and periosteum on one side of the defect, which is freed by two incisions running parallel to the cleft and to the alveolar process, and is then stripped up from the bone. The opposite edge of the cleft is freshened and the border of the flap is sutured to this so that it covers the gap. According to this method, it is possible to close wide defects and if necessary a second flap may be formed from the other side. By prolonging the flap backward the defect in the soft palate is closed in a similar way. Two cases which were operated on while only a few days old ended fatally, and it therefore appears to be advisable at first to correct only the harelip and to close

the opening in the palate by means of an obturator. Later on, but before the children begin to speak, the staphylorrhaphy is done. In the other twelve cases the functional result was very good. By injecting adrenalin it was found possible to control the hemorrhage perfectly.

The municipal authorities of Vienna have issued some interesting statistics relating to the mortality from tuberculosis and cancer in the year 1904. Pulmonary tuberculosis forms 17 per cent. of the causes of death, but in the last fourteen years has been diminishing steadily. All ages are attacked, but it is commonest in persons of the productive time of life, from twenty to thirty years of age, and more men than women succumb. Persons in the humbler walks of life suffer more from tuberculosis than those in better circumstances. A somewhat different state of affairs prevails in regard to carcinoma and other malignant new growths. Here the mortality is greatest among those of advanced years, and women predominate. Cancer also is rather a disease of the better classes.

Progress of Medical Science.

New York Medical Journal, March 30, 1907.

Hodgkin's Disease as a Type of Sarcoma.—After a reference to the histological changes in and symptoms of this affection, W. B. Coley presents illustrations of several personal cases together with their clinical histories. He states his conviction based on a study of upward of 600 cases of sarcoma, 74 of which originated in the cervical glands, that Hodgkin's disease is merely a special variety of sarcoma, in containing as a rule a fairly definite clinical and pathological type, but yet, in many cases, shading off into other types that correspond most closely with the ordinary types of round celled sarcoma. The very evidence brought forward by Reed and others in favor of the infectious origin of Hodgkin's disease need not be disproved. Most of it holds true of sarcoma, and all of it but adds to the slowly accumulating mass of evidence in favor of the microparasitic or infectious nature of sarcoma as well as carcinoma. The question of retaining the name Hodgkin's disease is not of great importance compared with the recognition of the true pathological condition, just as it matters little whether we call a certain disease of the thyroid gland exophthalmic goiter or Graves' disease. If the malignant nature of the disease becomes generally accepted, as the author believes it undoubtedly will, it will be hard, he thinks, to find a better name for the disease than lymphosarcoma, which Billroth applied to it many years ago, prefixing multiple to it; or calling it lymphosarcomatosis to distinguish it from the type of sarcoma confined to a single lymph gland.

The Possible Significance of the New Pyloric and Duodenal Lesion Observed in Guinea Pigs Inoculated Subcutaneously with Diphtheria Toxin.—The lesion referred to by W. D. Cannon consists of sharply defined areas of congestion, hemorrhage, or ulceration involving the pyloric end of the stomach and sometimes the duodenum to the extent of half an inch. He refers to the work of Turck, Rosenau, and Anderson who first observed the above change, and calls attention to the possible significance of such lesions in the general study of the induction of artificial gastric ulcer. The author further brings up their possible relation to the familiar duodenal ulcer occurring in the human subject after superficial burns of large skin areas. He asks, does not the intense acute inflammation of the subcutaneous connective tissue in the guinea pig, with its resultant hyperplasia, edema, and sometimes necrosis of the skin, involving from 64 to 100 c.c. of dermal tissue surrounding the site of inoculation, constitute a skin lesion analogous to skin burns of the first or second degree? There is probably impairment if not total arrest of the skin functions, absorption, excretion, respiration, heat radiation, sensation, and protection in the area involved. Just which one, or combination of arrested functions, is capable in inducing duodenal ulcer, and later weath, has not been determined.

Pubiotomy.—R. C. Norris notes the growing popularity of pubiotomy over symphyseotomy, and reports one successful case. The degree of pelvic deformity indicating pubiotomy is the same as that ordinarily given for the relative indication of cesarean section, *i.e.* a conjugata vera to 7 c.m. The majority of operations thus far have been done for cases with contraction between 7 and 8.5 c.m. To replace embryotomy it has also been recommended and performed in cases of impacted face or brow presentation. It has been recommended to place the saw ready for section of the bone as a prophylactic measure when about to extract a difficult breech presentation or after version. The increase in the diameters is as follows: A separation of the cut ends of the bone of 3 c.m. increased the conjugata vera 1 c.m.; the transverse 1.4 c.m.; both oblique diameters 1.3 c.m. A separation of 4 c.m. is likely to damage the sacroiliac joint. One authority declares the conjugata vera in the normal pelvis is increased 8 per cent. of its length; in the rhachitic pelvis over 25 per cent. The space gained is about the same as is gained with symphyseotomy with equal separation of the bones. The advantage of pubiotomy lies in the fact that the supports of the bladder and urethra and the clitoris and structures behind the symphysis are not only not cut, but also are not so likely to be lacerated by the bilateral traction caused by the separation of the bones. Lacerations of the vagina and unavoidable hematomata have been the most frequent accidents thus far reported. Under aseptic conditions these really are not serious and often may be avoided by a proper technique of operation and by a proper method of delivery. Tearing of the vaginal or cervical attachments ought to be avoided by careful delivery after section of the bone. Reference is made to the literature on the subject and noteworthy incidents in various cases reported by the different authors are also referred to.

What Stage in the Development of Cataract, Particularly Senile Cataract, Is the Most Suitable for Its Removal by Extraction?—J. E. Weeks briefly describes the most frequent types of senile cataract. These are: (1) Equatorial (cortical) cataract: (a) imbibition cataract; (b) cataract, always smaller than the normal lens. (2) Cortical (chorioidal) cataract; anterior, or posterior, or both. (3) Nuclear cataract. He adds that extraction of the cataract in the foregoing types described, if done when most propitious for the welfare of the patient, would be performed in the *first type* as soon as liquor Morgagni appeared between the lens capsule and the lens substance; in the *second type*, at the convenience of the patient after vision is reduced below that necessary for the ordinary vocations of life; in the *third type*, when useful vision has been abolished, and the lens is appreciably shrunken. The author also refers to the zonular type where the cataractous portion becomes so dense and is so large that vision is reduced below the point which enables the patient to follow the ordinary vocations of life (particularly when the density of the cataract reaches this stage in adults) and the cases in which calcareous deposits render dissipation of the cataract by needling imprudent or impossible. Extraction in this fourth type should be made at the convenience of the patient after vision is reduced below that necessary for ordinary uses.

Journal of the American Medical Association, April 6, 1907.

Tuberculous Meningitis.—H. Koplik gives an analysis of fifty-two cases of tuberculous meningitis occurring in his hospital practice during the last six years. All the cases utilized in his article were diagnosed clinically and the diagnosis confirmed by post mortem, lumbar puncture, or animal experimentation. The oldest patient was ten years, the youngest six months, the average four years and four months. The onset, in cases in which reliable data could be obtained, was generally insidious, and Koplik is inclined to question the majority of the reports of sudden onset in this disease. Rigidity was absent in fourteen (twenty-seven per cent.); hyperesthesia was lacking in the great majority (ninety per cent.), the patient generally lying dull and giving little attention to surroundings and reacting slowly to irritation. The Kernig symptom was present only in twenty-two cases, and he considers it of comparatively slight diagnostic value. The Babinski reflex, on the other hand, is, he thinks, a more valuable evidence of the tuberculous nature of the disease, as it is exceptional in the cerebrospinal type. Skin eruptions, the *tache cerebrale*, the character of the pulse, and of the respiration have not much value for the diagnosis; vomiting occurs when the ventricles are distended, but is not a leading feature or persistent. Temperature is important; the absence of fever, or persistently low temperature with the cerebral symptoms is strong evidence of tuberculous meningitis. Very high temperature means either a complication or approaching death. Localized pareses only appear toward the close of the disease and then their evanescent character is characteristic. While leucopenia is a presumptive evidence of a tuberculous process the leucocyte count furnishes nothing pathognomonic in this form of meningitis. The eyes of all the patients were examined by experts and some change, varying from optic neuritis to chorioidal tubercle was found present from the beginning in sixty-six per cent. This symptom sharply distinguishes this form from other types of meningitis, especially the cerebrospinal, in which fundamental changes are rare. Skull percussion is of the greatest value

in the early stages of the disorder when the symptoms are still rather equivocal. McEwen's method should be followed; the patient is in an upright position, the head slightly inclined and percussed over the pterion. Koplik found this of value in thirty-four of his fifty-two cases. Lumbar puncture, while admittedly the most valuable precise diagnostic method, is advised only as a confirmatory method after the clinical examination has rendered the presence of tuberculous meningitis highly probable. In other words, Koplik would use it only as a means of confirming or excluding the presence of a disease whose prognosis is hopeless. He believes that careful search will reveal tubercle bacilli by this method in a majority of cases. Although a lymphocytosis of the puncture fluid is not pathognomonic a predominance of lymphocytes is of considerable significance and certainly excludes the diagnosis of certain acute purulent forms of meningitis. Summing up the diagnostic points the author says that the diagnosis of tuberculous meningitis in its earlier stages is possible to-day, whereas it was well-nigh impossible formerly. The slow onset interrupted by periods of irritability, etc., the irregularity of the pulse and respiration, the low or normal temperature, the absence of hyperesthesia, the lack of appetite, and the discovery of hydrocephalus by percussion of the skull will all tend to establish the diagnosis. If after this we can obtain a lumbar puncture, the examination of the fluid in the great majority of cases will put the diagnosis beyond a doubt. The examination of the fundus of the eye is also conclusive in many cases.

Intermittent Tick Fever.—C. F. Kieffer describes what seems to be a new type of fever due to tick bite, observed by him at Fort D. A. Russell, Wyo. The infected region from which all cases originated, partly on the maneuver reservation of the post, is at the head waters of three small streams which together make up Crow Creek. All the patients had been bitten by ticks, specimens of which, sent on to Washington, were identified by Dr. C. W. Stiles as *Dermacentor occidentalis*, the same species which is credited with the causation of Rocky Mountain spotted fever. Kieffer thinks the connection between the tick bite and the fever beyond question. The cases generally correspond to one type. After a short period of incubation (from three to seven days), with brief and ill-defined prodromal symptoms, the attack is ushered in by a chill, with nausea and vomiting and intense and increasing pain in the muscles and joints. The chill lasts two or three hours, and with it a febrile movement begins, the temperature rising to 103° or 109° F., and remaining there as a rule for forty-eight hours, though exceptionally it may last only twenty-four hours. Then a remission occurs lasting about forty-eight hours, the temperature falling nearly to the normal. The disease consists usually of from three to seven such cycles, after which, barring a pronounced anemia, the patient is well. There is another type in which the fever rises ladderlike for two or three days, and there are more marked prodromes and more marked abdominal symptoms (tenderness and splenic enlargement), and the suggestion of typhoid is strong. Blood examination in all cases showed a marked decrease of the red cells and hemoglobin, and the differential leucocyte count gave only a very slight leucocytosis, but a moderate (absolute as well as relative) increase in the number of large mononuclears. Careful search revealed no malarial parasites and nothing like *Piroplasma hominis*. The Widal reaction was always lacking. Quinine, given in all the earlier cases, appeared only to aggravate the discomfort. Kieffer is convinced, however, that arsenic, especially subcutaneously, has a controlling and curative effect on the disease. The best formula is Kobner's; the solution should be sterilized and is used in a dose of from one to two c.c. twice daily. After the acute stage the blood deterioration is to be met by smaller doses of arsenic or the use of the ordinary iron preparation. Five cases are reported.

Is Scarlet Fever a Streptococcus Disease?—From a study of the facts of scarlet fever, L. Hektoen thinks that we are justified in concluding: (1) That the predominant feature of the bacteriology of the throat in scarlet fever is the constant presence of large numbers of *Streptococcus pyogenes;* (2) that the overwhelming majority of the so-called complications and of the deaths in scarlet fever are due to an invasion of the tissues and the blood by this germ; and (3) that in scarlet fever, even when mild, the organism gives evidence of systemic reaction to streptococci by variations in the streptococco-opsonic index and probably also by the formation of streptococco-agglutinins. In spite of all this and of the fact that many of the essential symptoms of scarlet fever can be explained by what we know of the pathogenic powers of the streptococcus, there are serious difficulties in accepting the streptococcal theory of the disorder. There is no analogy in known streptococcus infections with the lasting immunity conferred by even mild cases of scarlatina; there is the reported lack of evidence of streptococcic invasion in certain fulminating cases of scarlet fever; streptococci are scarce in the skin in this disease, notwithstanding the generally accepted infectiousness of the skin lesions; the longevity of the scarlatinal virus, of which there are many reported instances, is contrary to anything known of the streptococcus. The view, therefore, that the germ of scarlatina is yet unknown and that the streptococcus is a concomitant or secondary invader, seems to Hektoen to harmonize better with the facts. We may infer that the throat conditions in scarlet fever are particularly favorable to the *Streptococcus pyogenes,* and the chief significance of the pure scarlatinal virus would seem to be to open the door, so to speak, to streptococci. The need for potent antistreptococcus remedies is as urgent as if it were a purely streptococcus disease. Especially in view of the fact that streptococci grow in virulence in the susceptible animal organism, it is our duty to guard against the transfer of especial virulent strains from patient to patient by insuring adequate measures of isolation.

Pulsus Paradoxus in Pericarditis with Effusion.—W. J. Calvert has had the opportunity of studying two cadavers of patients dying with pericardial effusion. The cadavers were injected and hardened with formalin and then transversely sectioned in such a way as to preserve the position of the organs at the time of death. The conditions found are described by Calvert, and he deduces from them the following explanation of the occurrence of pulsus paradoxus in pericarditis with effusion. 1. Pericardial effusion produces stenosis of the vena cava. 2. This stenosis is relatively compensated by a rise in venous pressure. 3. This compensation falls when the pericardial pressure is greater than the venous pressure. 4. Owing to respiratory change in venous pressure the degree of broken compensation varies in inspiration and expiration —greatest in inspiration, least in expiration. 5. The variation in compensation carries varying quantities of blood to the right heart (and to general circulation)—least in inspiration, greatest in expiration. 6. The respiratory variation in quantity of blood passing to general circulation is sufficient to explain pulsus paradoxus.

Synthetic Chemicals and the Food and Drugs Act.—L. F. Kebler remarks that an entirely new meaning has been given to the word "synthetic," applying it not to the production of new chemical compounds alone, but also to mixtures, and in some cases for the purpose of deceiving the public, as in the well-known case of certain coal-tar preparations. In the Food and Drugs Act the very comprehensive term, "derivative and preparation of same," is purposely employed to cover such cases, and Kebler discusses certain of the synthetic chemicals as they are affected by this law and the changes that have been made by manufacturers to meet the new conditions. Manufacturers are making frequent requests to be allowed to use other names for some of these drugs than those specifically mentioned in the act, and substitutions of drugs less familiar to the public, such as acetphenetidin in place of acetanilid in headache powders, etc., are common. While there was question about including certain chemicals and products in the list of those to be specified on labels, at the time of the passage of the law, the general consensus of the best authorities seems to be at the present time that the list was hardly large enough and that other drugs should be included. He also remarks on some of the food preservatives, noticing the established harmfulness of the salicylates. While benzoic acid and benzoates are claimed by some to be less harmful, this, he says, is yet to be established. Saccharin is another commonly employed agent which should be specified on labels.

Tincture of Strophanthus.—R. A. Hatcher enumerates the advantages possessed by strophanthus over digitalis and digitoxin, and notices as somewhat remarkable the fact that it has not rivaled digitalis more in the favor of the profession. It is prompter in its action, is said to be less cumulative in its effects, is more soluble in water, is less irritant, and, therefore, can be used hypodermically, while at the same time it is much more active and less expensive than digitoxin. It produces much less vasoconstriction in the splanchnic area than digitoxin, and while this is a disadvantage in shock, it is better for diuresis; according to Gottlieb and Magnus, in contrast to digitoxin it produces no constriction of the coronary vessels, which is also an important point when cardiac hypertrophy is desired. Of late years strophanthus has been used with satisfactory results in Holland, Belgium, and France, showing that a fair degree of uniformity of the drug has been obtained. In order to test the conditions here in this respect, Hatcher procured and tested a number

of samples of tincture of strophanthus from the east side drug stores in New York City, comparing them with other samples carefully prepared by himself from the best obtainable seed, as well as with specimens prepared from seed which had been on hand for different periods of time. The physiological test advocated by Fraenkel of determining the amount required to produce systolic standstill of the ventricle per 100 grams of frog in one hour was employed, which has been satisfactorily demonstrated to be an index of therapeutic activity. Cats and dogs were also used in the tests as well as frogs. The experiments are detailed and their results prove, he thinks, that we have a much more uniform product in the tincture of strophanthus, even when obtained from the poorer class of drug stores of New York, than is the case with the digitalis preparation. It may be stated, positively, he says, that there is no difficulty in obtaining tincture of strophanthus in the open market of quite as nearly uniform potency as obtains in the case of tinctures of other drugs which are not standardized, and that the seeds do not undergo deterioration on being kept for several years, possessing in this respect a great advantage over digitalis leaves, which deteriorate rapidly despite care on the part of the pharmacist.

The Lancet, March 23, 1907.

Tests for Acetone in the Urine.—B. J. Jackson Taylor says with reference to the sodium-nitroprusside test, which consists in the darkening which takes place on the addition of acetic acid to a solution of sodium-nitroprusside, urine, and liquor potassæ, that the test is rendered more simple, delicate, and accurate by a slight modification—namely, the substitution of strong ammonia for the liquor potassæ and the elimination of the use of acetic acid. In the ordinary test when the solution of potash is employed there is a uniform reddening of the whole solution which on the addition of acetic acid in the presence of acetone becomes darker when the acid comes in contact with the urine, the darkening passing down as the acid sinks. Therefore, with this test the addition of liquor potassæ to the urine and sodium-nitroprusside yields a red coloration whether acetone is present or not, and it is only after the final addition of acetic acid that the presence of acetone is recognized and then only when there is a fair amount of the latter present. The detection of the presence of acetone is therefore dependent on the darkening of an already darkish red fluid by the final reagent, acetic acid, and the degree of darkening, when acetone is present only in small quantities, is not altogether easy to determine. If, however, strong ammonia replaces the potash solution the test for acetone is as follows: On adding the ammonia to a solution of sodium-nitroprusside and urine the ammonia solution remains on the top; thus there is a clear solution uppermost with the urine solution below. Should acetone be present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta (or petunia) appears within from one to three minutes at the junction of the two fluids and gradually *spreads upwards* pervading the whole of the ammonia solution if acetone is present in considerable amount. In the absence of acetone usually no coloration occurs, but sometimes an orange-red ring forms at the junction of the urine and ammonia solution, but this bears no resemblance to the "acetone ring" described above, hence the presence or absence of the latter is easily ascertained by the method which the author believes has not been generally recognized. The strength of the solution of sodium-nitroprusside is not important, but it is important that it should be prepared fresh and a few crystals dissolved in a test-tube of water are sufficient.

Carcinoma Mammæ in the Mouse.—E. F. Bashford and J. A. Murray describe certain anatomical and pathological features of sporadic tumors occurring in the mouse. Several illustrations are included setting forth their findings in their series of animal experimentations. They believe that these growths are epithelial in nature, are malignant, and are identical with similar malignant new growths in the human subject. This being the case, they claim that their methods have an important practical bearing on the present work of cancer research. They describe the arrangement of the mammary structures in the mouse and present a section illustrating the histology of the normal structures. The tumors first appear as roughly spherical swellings, usually placed asymmetrically with reference to the nipple as in the human subject. The looseness and elasticity of the skin may permit growth to proceed without invasion of the chest wall, although the lungs may be almost completely replaced by metastatic growths. Lymphatic glands in the neighborhood may also show secondary deposits. These mammary growths frequently appear on the removal of the skin to be completely encapsulated by a fibrous layer of varying thickness, but this capsule is usually invaded by strands and columns of tumor cells. The illustrations demonstrate, the authors claim, that they are dealing with new growths of the mammary region of the mouse, which grow progressively (recur after incomplete removal), infiltrate the surrounding normal tissues, and produce metastases of the same histological type in the lungs and lymphatic glands. They lead to the death of the animal. The conclusion is inevitable that they are malignant new growths of the mamma.

Opsonins and Immunity.—J. L. Bunch says that the opsonic index of a patient to a given microorganism is simply the expression of the relative power of the patient's opsonins to influence the taking up of the germ by phagocytes as compared with that of a healthy individual. In other words, the opsonic index is a definite expression of the patient's relative immunity. An increase of the opsonic content of the blood in disease is brought about by the injection of the appropriate vaccine. If the right dose is given a short "negative phase" will be followed by a well marked positive phase, during which the antibacterial power of the blood is increased and the resistance of the patient to the disease is increased. After tubercle inoculations this improved power of resistance may be maintained for several weeks, but, as a rule, it falls back again after ten days or a fortnight, and a further dose of the vaccine is necessary. Only the minimal dose must be employed which will produce a satisfactory response and this must not be increased until it ceases to produce its effect. The dose, moreover, must not be repeated until the effect of the preceding dose is passing off. If it were possible to produce a summation of positive phases it would be advantageous to give successive doses at short intervals, so as to produce a maximal favorable effect, but such summation is not possible in the case of tubercle. Each inoculation, therefore, produces its effect independently and it remains to take the greatest advantage possible of the increased elaboration of protective substances which the artificial stimulus has produced.

French and Italian Journals.

Protective Function of the Liver Against Intestinal Toxins.—G. A. Petrone and Aurelio Pagano describes the functions of the liver as protective against the vegetable alkaloids, many mineral poisons, foreign substances that occasionally find their way into the intestine, such as ammonia and the aromatic substance due to putrefaction of albuminoids, peptones, albumins, soaps, and alcohol. Also against saturated solutions of bicarbonate of soda, sulphate of soda, chloride of soda, adrenalin, sulphuric ether, chromic acid, and phosphorus. It protects against some microorganisms, and does not against others. It acts against tetanus toxin, cholera, bacillus, coli, alcoholic extracts, putrid materials, and alcohol typhoid materials. The action against bacteria is due to phagocytosis exerted by the epithelium of the blood-vessels, according to some. Others refer it to the amount of glycogen contained in the liver. The authors have made experiments to ascertain whether there is a protective action against the ordinary intestinal toxins. The toxic substances were injected into a mesenteric vein and into a peripheral vein and the results compared. The results lead them to conclude that the liver exerts a marked protective action against ordinary intestinal toxins. The first barrier against these toxins is furnished by the walls of the gastrointestinal tube, and many of them are thus removed. Those that are left meet a second obstacle in the hepatic gland, with its rich circulation and innumerable endothelial elements. The lung then acts on those that have escaped the liver, and last of all the blood by means of circulating leucocytes continues the action.—*La Presse Médicale*, February 13, 1907.

Chromatophore Cells and Langerhans Cells in the Skin.—E. Bizzozero has made examinations of many condylomatous growths of the skin, of elephantiasis, and matophore cells and Langerhans cells in the skin. He presents these conclusions: That the interepithelial chromolluscum fibrosum to determine the presence of chromatophore cells are connective tissue cells containing pigment, which have immigrated from the cutis. That the structure of the nuclei varies according to the conditions of nutrition in which they existed. That the nucleus in inflammatory processes may multiply by direct division without any division of the protoplasm, or by indirect division followed by division of the protoplasm. That the chromatophore cells progressing toward the surface of the skin may be broken up into minute detritus and the pigment spread in the interepithelial spaces, or may be gradually destroyed later. That in the group of Langerhans cells must be included pigmented chromatophores, unpigmented chromatophores, and those whose granules are only brought out by nitrate of silver; excluded should be epithelial cells, migrating cells, and nerve cells.—*Archivio per le Scienze Mediche*, Vol. XXX, Part 6.

Book Reviews.

Nouveau Traité de Médecine et de Thérapeutique. Publié en Fascicules sous la direction de MM. P. Brouardel et A. Gilbert, Professeurs à la Faculté de Médecine de Paris. XI. Intoxications. Par P. Carnot, E. Lancereaux, M. Letulle et R. Wurtz, Professeurs Agrégés à la Faculté de Médecine, Médecins des Hôpitaux, Paris: J. B. Baillière et Fils, 1906.

The System of Medicine of Brouardel and Gilbert has, in the new edition, been made much more accessible by its publication in small sections, each complete in itself and separately purchasable. The volume on "Intoxications" is in every way an admirable contribution to the literature of the subject. Paul Carnot, in a brief review of the chemical and physiological mechanism underlying poisonings in general, has written an excellent introductory chapter. While there is a certain uniform thoroughness in the treatment of all the following sections, by far the most satisfactory are the one on "Lead Intoxications," by Letulle, and the truly masterful treatise on "Alcoholism," by Lancereaux. There have probably been no more excellent studies made of this important subject than this one of Lancereaux, who, without neglect of the purely medical aspects of the matter in hand, deals at length with the statistical and sociological problems involved, the subdivision on "Hereditary Alcoholism" and the one on "Legislative Prophylaxis" being particularly good. The authors have made a very thorough use of the literature of all countries, and the book gives the impression of bringing its subject completely up to date. Throughout there is a literary quality and skill of treatment which make its pages easy and pleasant reading, a feature which may well be recommended to many of our American writers of text-books.

Who's Who, 1907. An Annual Biographical Dictionary. Fifty-ninth Year of Issue. London, Adam and Charles Black; New York: The Macmillan Company, 1907.

This is the original of all the Who's Whos, national, municipal, professional. It is not strictly national in its scope, but includes biographies of some of the most prominent men in science, letters, arts, finance, and politics in the countries of Europe and America. Chiefly, however, it gives information concerning residents in the United Kingdom and its colonies. The book will be found very serviceable to all readers of newspapers and reviews who want to know something about the men of Great Britain and Ireland who are, without the information here given, only names to most of us. The data about Americans mentioned in the work appear to be in the main correct, though we notice that the name of the late Albert Bierstadt, the artist, is retained in the book as though he were still living.

The Toxins and Venoms and their Antibodies. By Em. Pozzi-Escot. Authorized translation by Alfred I. Cohn, Phar. D. First Edition. New York: John Wiley & Sons, 1906.

The first part of this book deals with generalities regarding toxins and antitoxins; the second half treats of the toxins proper—vegetable and animal toxins, microbial toxins, and the venoms. The book is small, and only the merest outline is given; but it will serve as a useful introduction to the more detailed study of an important subject. The value of the book is increased by numerous footnotes, which refer to fuller sources of information.

The Practice of Obstetrics. Designed for the use of Students and Practitioners of Medicine. By J. Clifton Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College; Visiting Obstetrician to the Emergency Hospital of Bellevue Hospital, New York City; Surgeon to the Manhattan Maternity and Dispensary; Consulting Obstetrician to the New York Maternity Hospital. Third Edition, Revised. With 1,270 illustrations, including five colored plates and 38 figures printed in colors. Philadelphia: P. Blakiston's Son & Co., 1907.

It would seem that there is no need to do more than announce the appearance of a new edition of this standard work. Still, admirable as were the two former editions, the present volume contains new matter that adds to its value. There are new sections on appendicitis complicating pregnancy, tapeworm complicating pregnancy, hematoma of the vulva, fibroma molluscum gravidarum, lactation atrophy of the uterus and breasts, brachial birth paralysis, vaginal incision and drainage, new history charts for institution work. In addition the following subjects have been more or less rewritten: The development of the ovum, embryo, fetus, fetal membranes, and fetal structures; chorioepithelioma malignum; the treatment of placenta prævia; the toxemia of pregnancy; the etiology of eclampsia; ectopic gestation; the treatment of pelvic deformity; morbidity in the puerperium; indications for the induction of abortion and premature labor; the forceps; cesarean section; vaginal cesarean section; Porro-cesarean section; complete and incomplete abdominal hysterectomy. Although much new matter and 140 new illustrations have been added, the size of the present volume has been reduced by about one hundred pages; this has been accomplished by rewriting, condensation, the omission of obsolete matter, and a reduction in the size of some of the illustrations.

Self-Propelled Vehicles. A Practical Treatise on the Theory, Construction, Operation, Care, and Management of All Forms of Automobiles. By James E. Homans, A.M. Sixth Edition, Revised and Enlarged. With Upwards of 500 Illustrations and Diagrams, Giving the Essential Details of Construction and Many Important Points on the Successful Operation of the Various Types of Motor Carriages Driven by Steam, Gasoline, and Electricity. New York: Theo. Audel & Co., 1907.

Thanks to the skill of designers and makers, the construction of motor vehicles is each year becoming simpler and at the same time more effective. Even the least complex, however, demands of its driver a considerable degree of technical knowledge if it is to be operated profitably, and the present is an admirable text-book for tyros, and work of reference for the more experienced. In accordance with its practical importance the greatest amount of space is given to the gasoline vehicle, though the application of steam and electricity as motive powers is adequately described. The more important structural features of most of the well-known foreign and domestic cars are discussed and illustrated, and much practical information is given, both in regard to routine driving and also concerning the unexpected happenings for which automobiles are so notorious. The book is well indexed and is paragraphed with side heads in such a way as to make it convenient for reference, and it may warmly be commended as a complete, easily comprehensible handbook on the anatomy, physiology, pathology, and therapeutics of motor vehicles.

Manuel d'Histologie Pathologique. Par V. Cornil, Professeur à la Faculté de Médecine, et L. Ranvier, Professeur au Collège de France. Avec la Collaboration de A. Brault, Médecin de l'Hôpital Lariboisière, et M. Letulle, Professeur Agrégé à la Faculté de Médecine. Troisième Édition. Tome Troisième. Avec 388 gravures en noir et en couleurs dans le texte. Paris: Felix Alcan, Éditeur, 1907.

The first volume of this very elaborate system was devoted to the principles of pathology, to tumors, and to the pathology of the bones, joints, and serous membranes. The second volume contained the discussions of the pathology of the muscles, blood, and marrow, and in the present work the central nervous system, the cardiovascular system, the lymphatic system, the spleen, and the larynx are considered. The volume is a very large one of 1,170 pages, with 388 illustrations, many of them in colors, and nearly all of unusual interest and excellence. The first 850 pages comprise a series of exhaustive articles on the pathology of the brain, cord, and peripheral nerves by Gombault, Riche, Nageotte, and Durante. The vascular system is treated of by Marie in 150 pages; Bezançon covers the lymphatic system in 100 pages more, and the volume is closed by an article on the larynx by Legry. This last does not seem properly to belong with the other subjects included in this section, since it forms the beginning of the work on the respiratory system which is to follow in the fourth and last volume of the system shortly to be published. The eminence of the two editors-in-chief sufficiently guarantees the quality of the text, and the work is an important addition to the literature of pathological histology.

Mercer's Company Lectures on Recent Advances in the Physiology of Digestion. Delivered in the Michælmas Term, 1905, in the Physiological Department of University College, London. By Ernest H. Starling, M.D., F.R.S., Jodrell Professor of Physiology. With twelve illustrations. Chicago: W. T. Keener & Co., 1906.

One of the most important of the recent advances in our knowledge of the physiology of digestion concerns the nature of the stimuli which evoke the gastric and pancreatic secretions when food or chyme enters the stomach or duodenum. Formerly supposed to be due to reflex nervous activity it now appears that the secretory stimulus is largely a chemical one depending on the formation of a hormone at the seat of stimulation which then reaches the gland in question through the blood stream. The steps which have led up to the discovery of these gastric and duodenal secretins are traced in detail in these lectures, as well as many other phases of digestion which have been made the subjects of recent investigation.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

208th Regular Meeting, Held March 1, 1907.

THE PRESIDENT, DR. ROBERT ABBE, IN THE CHAIR.

A Case of Cervical Rib, with Symptoms.—Dr. LEWIS A. CONNER presented a girl, seventeen years old, with bilateral cervical ribs, who had been shown to the society one year ago. At that time she complained of occasional slight pains in her left shoulder, but it was impossible to tell whether or not the pains were related to her supernumerary rib. Since that time the pain had become more constant and severe, and now was present most of the time. It no longer was felt only in the shoulder, but frequently radiated to the elbow. There was no evidence of muscular atrophy on the affected side, and the left deltoid showed only slight diminution in faradic irritability. Power in the two arms was equal, but the left tired more easily. The skin sensibility was not disturbed. In the light of the developments of the past year there was now little doubt that the symptoms were the result of pressure of the cervical rib upon the nerve trunks, and if these symptoms increased, the question of operation would have to be considered. In reply to a question, Dr. Conner said this condition of cervical rib was frequently bilateral, but not always. The operation for the removal of the rib was regarded by surgeons as sometimes quite a difficult one. The symptoms associated with the condition were apt to develop during early adult life, which was perhaps due to the elongation or increasing rigidity of the ribs at that time.

Local Thermotherapy.—By Dr. W. GILMAN THOMPSON. (See page 592.)

Dr. BEVERLEY ROBINSON said that in spite of the undoubted accuracy and scientific value of the investigations of Dr. Thompson along the lines indicated in his paper, his findings were not in entire accord with clinical experience in the use of local thermotherapy, and until the art of medicine could be reduced to an exact science, such discrepancies would doubtless continue to exist. For example, the use of ergot to control pulmonary bleeding was generally regarded as utterly unscientific; still, Dr. Robinson, said, he invariably gave the drug in such cases, and had a certain amount of faith in its efficacy.

Dr. ANDREW H. SMITH said that very early in his medical career he had been instructed to the effect that when heat or cold was indicated as a local application, either one could be selected, the choice depending on the personal comfort of the patient and the therapeutic effect apparently varying with the subjective sensations. That general rule was still more or less observed by practitioners. When theory failed we resorted to practical results. When, in a certain case, we found that cold aggravated the pain, while warmth apparently allayed it, we were justified in resorting to the later, or *vice versa*. The practical utility of thermotherapy could not be doubted, whatever the scientific basis for it might be. For instance, a toothache was always aggravated by cold applications, and usually eased by hot ones. The same was true in the pain accompanying inflammations of the middle ear.

Dr. JOHN WINTERS BRANNAN inquired whether in Dr. Thompson's opinion the abdominal ice coil was of use in typhoid fever, apart from cases in which there was intestinal hemorrhage. The speaker said that last autumn, when he was endeavoring to induce the physicians of Harlem Hospital to place their typhoid patients on the balconies to get the benefit of the fresh air, they objected on the ground that it interfered with the use of the ice coil. In cases of sprained ankle, Dr. Brannan said, he had seen the swelling and pain rapidly disappear under the use of hot applications.

Dr. GEORGE L. PEABODY recalled Dr. Thompson's previous work in connection with this subject, and stated that he had long been in entire accord with the views expressed, which contained nothing antagonistic to the use of local thermotherapy in the treatment of certain conditions. Personally, Dr. Peabody said, he confessed great faith in hot applications for pleuritic pains. In certain other similar conditions cold seemed more efficacious than heat, and both seemed to accomplish the same result in different ways. While local thermotherapy did not affect the internal temperature directly, still in a reflex manner it influenced the blood supply of the part, reducing it either by constriction of the afferent vessels, thus preventing the inflow of blood, or increasing the outflow of blood by its effect on the efferent vessels. In both cases there would be a diminution of the amount of blood at the site of the inflamed part. The speaker said he had an abiding faith in the relief of appendicular pain by the continuous application of an ice bag, and under its use he had seen many cases in which the acute symptoms subsided, permitting a subsequent interval operation.

Dr. FRANCIS P. KINNICUTT said that while he was unable to offer any scientific explanation of how heat and cold acted, respectively, in relieving pain, their efficacy in that regard had been borne out by clinical experience. The pain of appendicitis for example was often materially diminished by cold applications. The same was true of the pain of pericarditis and even of deeply seated organs. The explanation by Dr. Peabody of the similar results effected either by cold or heat was of much interest. While the laboratory tests bearing on this subject made by Dr. Thompson were very thorough and interesting, Dr. Kinnicutt said he did not think they were entirely conclusive. For example, in trying to ascertain the effect of local thermotherapy upon the blood supply of a part, mere visual inspection would be insufficient, as the human eye would be incapable of recognizing slight changes either in the caliber of the vessels or in the rapidity of the blood current. Slight blanching or reddening of the parts were difficult to recognize, yet slight changes in the local circulation might suffice to relieve the pressure on the nerve filament, to which the pain in many cases should be ascribed.

Dr. CHARLES L. DANA thought Dr. Thompson had certainly established the fact that our therapeutic results from local heat and cold were not due to any direct transmission of the heat or cold to the internal organs. The inference to be drawn from his investigations was that there was a very intimate relationship between the cutaneous nerves and the vascular condition of the internal organs. Dr. Head had shown that variations due to acute pathological processes in the deep viscera were reflected very quickly upon the cutaneous organs. In chronic conditions this relationship was less intimate, as a certain degree of equilibrium was established. It could be legitimately inferred, however, that external applications likewise produced definite reflex effects on internal organs, and the subject of local thermotherapy therefore resolved itself into a study of how much we could effect by such reflex action. The speaker recalled the time when Chapman's ice bags were very much in vogue as a therapeutic measure, and he had resorted to the use of long ice bags and short ice bags on the spine in the treatment of locomotor ataxia and spinal irritation and various other nervous affections. In chronic conditions he had never seen any results from the use of such applications, but in acute conditions, such as headache and some forms of spinal pain and paresthesia, he had seen relief follow the use of such applications. After cerebral apoplexy it was the usual thing to apply an ice bag to the head, and while this rendered some of these patients more comfortable by relieving the headache and the constricting sensations, it had no direct effect on hemorrhage. In local pains, such as the various types of neuritis, the application of heat or cold was often very grateful, and in such cases the benefit was due, per-

haps, partly to direct transmission and partly to reflex action. Dr. Dana said he was in hearty accord with the reader of the paper that intelligent local thermotherapy should be more generally adopted and carried out in our general hospitals.

The President, Dr. Abbe, said that from a surgical standpoint he thought there was no doubt that local applications of heat and cold had a controlling influence on deep inflammatory processes. For instance, in synovitis of the knee-joint, the application of an ice bag was of undoubted value, reducing the inflammatory process and diminishing the size of the distended joint. In appendicitis the application of cold was frequently followed by a rapid reduction of the engorgement of the deep-parts which were the seat of inflammation, sometimes to such an extent that the strictured condition of the appendix, swollen to the point of obstruction, yielded and the attack would be over for the time being. In looking for a possible explanation of the beneficial effects of local thermotherapy, Dr. Abbe said he would be inclined to ascribe them to vasomotor influences. This was evidenced in the, at times, almost magical effects of hot applications to the forehead or nape of the neck in migraine, resulting, apparently, in relieving the local congestion of the vessels.

Dr. Robinson said that in certain cases where heat was indicated, he had found the electric pad more serviceable than the hot water bag. He also referred to the value of the actual cautery in old heart cases with dilatation and pain.

Dr. Thompson, in closing, said that in his paper he had admitted the value of local thermotherapy in various conditions of pain, but his chief contention was that it was difficult, if not impossible, to reach deep-seated hemorrhage, congestion, or inflammation by the ordinary methods of applying heat or cold, and that whatever effect such applications had in those cases, they were certainly not due to direct thermic transmission. This, of course, did not apply to cases of toothache, alveolar abscess, etc., where the heat or cold came in close contact with the source of irritation. The electric pad, to which Dr. Robinson had referred, was superior to the hot water bottle only because in the former the source of the heat was constant. The heat of the thermocautery was only momentary, and its beneficial effects were the result of its stimulating rather than its heating properties.

He said the changes in the circulation referred to by Dr. Kinnicutt were probably brought about by reflex action, perhaps distantly transmitted. For example, any stimulus applied over the precordium, in order to affect the deeper parts, might travel through the spinal centers and from thence be transmitted to the pleura and pericardium, and perhaps to the heart itself. The speaker said he was inclined to doubt that heat iself had any deep penetrating influence. Our knowledge of cutaneous stimulation and its effect on the internal circulation was slight. It was a far cry from the cutaneous circulation to the renal circulation, and a long distance for the nerve currents to travel. It was curious that there was such a close relationship, apparently, between certain cutaneous areas and some organ immediately underneath with which they had no direct physiological or nervous connection, although the clinical relationship was undoubted.

In speaking of the use of the abdominal ice coil in typhoid fever, Dr. Thompson said he had formerly employed it in patients who were too ill to be given tub baths, or where a hemorrhage had occurred and it was undesirable to disturb the patients. He had become convinced, however, that the ice coil was of little practical utility in these cases.

Dr. Dana said that the connection between the reflex effects of local stimuli and deep-seated pains, like those of pericarditis, was perhaps not as complicated as Dr. Thompson had suggested. On the contrary, a very close relationship had been shown to exist between the heart and pericardium and segmental areas of the overlying skin, and applications of heat or cold to the latter would influence corresponding sympathetic nerves. Dr. Dana said that at times the simple application of methyl chloride to the skin relieved pain which appeared to lay in one of the internal viscera. The only explanation he had to offer for this phenomenon was that this stimulation of the cutaneous nerves gave rise to inhibitory influences, thus producing interfering currents.

Dr. Conner said that if deep visceral pain produced definite and constant areas of skin hyperesthesia, as Head had so clearly demonstrated, the deduction seemed perfectly reasonable that grateful applications of those cutaneous areas might tend to relieve pain located in deep-seated organs.

Dr. Peabody referred to the value of the alcohol poultice, even in cases where the pain was deep-seated, as in acute peritonitis. In making these applications it was essential to have the epidermis absolutely saturated with alcohol, which could be applied upon several thicknesses of cheese-cloth, properly covered. The method was not advisable in areas where the epidermis was very thin, as in the scrotal region. He had often found it very efficacious in relieving the pain of phlebitis. The alcohol apparently paralyzed the blood-vessels, increasing their lumen and producing a blanching of the parts. In regard to the electric pad, to which Dr. Robinson had referred, Dr. Peabody said he had recently had two of these pads take fire while in use, and in one instance the patient's bed was set on fire. The conflagration was explained by the manufacturer on the ground of improper voltage.

Dr. Robinson said that in some cases of deep-seated pain he still had faith in the old-fashioned method of drawing blood by the use of leeches, which he regarded superior to wet cupping.

Dr. Andrew H. Smith suggested that the lymphatics possibly played an important rôle in the more chronic forms of pain that were relieved by the application of heat or cold.

Dr. Thompson said he also had seen a conflagration of one of the electric pads. This possible danger attending the use of the pads should not be lost sight of.

Aneurysm of the Arch of Aorta, which Ruptured into Esophagus in a Young Woman without External Evidence of Syphilis.—Reported by Dr. George L. Peabody, with specimen. (See page 595.)

Dr. Andrew H. Smith said that in a case of aortic aneurysm observed at the Presbyterian Hospital about fifteen years ago it was possible to detect a distinct souffle by placing the bell of an ordinary stethoscope in the patient's mouth, with the lips firmly closed around the tube. In that case the souffle could not be heard by the ordinary method of auscultation.

Dr. Abbe recalled one case of aortic aneurysm where the tumor imparted a marked impulse to the stomach tube.

Tuberculosis of the Iris Cured by Tuberculin Injections.—Dr. Charles Stedman Bull reported this case.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held February 28, 1907.

Dr. Howard C. Taylor in the Chair.

Degenerating Fibroid Complicating Pregnancy; Myomectomy, with Resection of Adherent Omentum; Continuation of Pregnancy.—Dr. F. A. Dorman presented a degenerating fibroid which he had removed from a patient thirty years old. She had been married thirteen months. Her childhood was healthy, her menses were regular, flowing five days, normal in amount, and without pain. Within the past year a miscarriage occurred at the third month; this was brought about possibly by over-exertion. At the

time of operation she was nearly five months pregnant. In the early months of pregnancy there had been fairly constant paint over the lower mid-abdomen, worse upon exertion, but this had gradually lessened for the past two months. A week before operation she began to have cramping pains over the lower abdomen, so severe that she was obliged to stay in bed part of the time. She had some nausea and vomiting. There was no constipation, no chills, or fever. On admission to the hospital two days before operation, the pain had lessened, the temperature was 99.8° F. and the pulse 98. The next day the pain was more severe and operation was decided upon. The abdominal examination showed a five months pregnant uterus, with a protruding mass, fairly firm, about the size of a small orange, extending forwards and near the apex of the fundus to the left. A median abdominal incision was made exposing the uterus, and the tumor was exposed in the wound. It was found to be a fibroid attached to the left side of the uterus near the anterior surface of the left horn by a broad base. It was also attached quite firmly to the omentum and to several loops of small intestine. The adhesions were separated and the fibroid removed by a circular incision about its base, and shelled out by careful enucleation. The depth of the uterine wound was nearly that of the thickness of the uterine muscle. The bleeding was profuse, but controlled by pad pressure, and the wound was sewed up by layer catgut sutures. The matted section of the omentum was removed by chain ligature. The patient was kept quiet for two days by morphine and until the fifth day by codeine. The convalescence, except for a temperature of 102.6° on the fourth day, was normal. She was discharged on the seventeenth day. Labor came on, following a rupture of the membranes, just before the eighth month. The pains were very insufficient and the cervix rigid. After nearly forty-eight hours' labor, with the cervix two-thirds dilated, he placed her under chloroform, completed the dilatation digitally, and delivered her of a four-pound baby by medium forceps. Both mother and child did well.

Dr. Brooks H. Wells said this report was interesting on account of the condition being a rare one; ordinarily fibroids in the fundus of the uterus in the pregnant woman did not require any interference. It was unusual to find, too, a fibroid undergoing degeneration in a uterus so well nourished. As to the way these women stood operation, his experience was that they continued in the pregnant state provided the operation was done cleanly, and if the uterine cavity was not punctured. His experience was limited to four cases. In one the woman was about five months pregnant, and she had a dermoid cyst of each ovary. The ovaries and tubes were taken out close to the uterus. She was seen with Dr. Mundé and it was believed that she would abort. The baby was delivered at full term. He then saw another case with Dr. Mundé where there was a large ovarian cyst; this was removed and the woman went on to full term. He had had two other cases in his own experience; in both there was a large cyst, which was removed during pregnancy, and the patients went on to full term without difficulty.

Dr. S. M. Brickner said that in two years they had had four cases at the Mount Sinai Hospital where operations were undertaken during pregnancy and none had aborted or miscarried. With regard to the point raised as to the rarity of necrosis, which was the most common form of degeneration, where the fibroid was pedunculated or twisted, or where there was a submucous fibroid, the fibroid was most likely to become necrosed. He recalled one case where the woman aborted at six and a half months; she ran a temperature of 101° before and after the abortion for some days, with tenderness and pain in the right iliac region. An examination failed to disclose any exudate or involvement of the appendages. He decided then to examine her under an anesthetic and he was surprised to find a good sized submucous fibroid, which was easily enucleated. She made a good recovery. He had seen within the last year a rather large subperitoneal fibroid which occupied the fundus uteri, which became necrotic and which was removed at the fourth month of pregnancy. The symptoms were similar to those presented in Dr. Dorman's case.

Dr. George H. Balleray said that he never operated for fibroids in pregnant women. He had seen several cases, but none had degenerated. After delivery they disappeared within eighteen months or two years. He said he had operated during pregnancy for the removal of ovarian tumors in six cases, and all went on without aborting. He had also operated for leaking pus tube in the fourth months of pregnancy. The tube was removed and she did not abort, but went on to the sixth month, when premature delivery occurred. He asked Dr. Dorman what the change was that occurred in the fibroid presented by him. He thought it was rather firm and had rather a healthy appearance.

Dr. Dorman, in reply to Dr. Balleray, said he had not had the pathological examination made, but the tumor as shown differed now from what it appeared to be in the fresh state. It was then acutely inflamed at the point of attachment. The incision made was about one-half to three-quarters of an inch in depth in the uterine wall. It was a circular one, converted into a longitudinal one. He had at present a case of double dermoid cyst in a five months pregnant woman; both ovaries were prolapsed and there was the irregular feeling of the dermoid ovarian cyst. There was one twist in one of them.

Fibroid Tumor of Large Size; Operation; Continuation of Pregnancy.—Dr. Edward J. Ill of Newark presented this specimen, which weighed sixteen pounds, and was removed from a woman who was in the fifth month of pregnancy, with no miscarriage following. In twelve years he had had forty-five cases of uterine fibroids complicating pregnancy, and in only one case was it necessary to remove the tumor. He said he had often wondered if the old country doctors had ever seen such cases, where the presence of the tumors was the cause of death. One old doctor he questioned had never seen one case in thirty-five years' practice and he had records of over two thousand cases of labor. He had often wondered what became of these tumors and how they behaved. The specimen he presented was of special interest. The woman was delivered one year ago in a Western State. She was thirty-eight years old and this was her first child. Then followed a long siege of pain and fever, which was attributed to an autointoxication. She got perfectly well and it was thought she was pregnant again. An examination proved that she was not pregnant and she menstruated again. After that the tumor appeared to become soft and, fearful of having trouble during pregnancy, Dr. Ill agreed to remove the tumor for her. The indications were not well drawn, except that the tumor was soft. When he got down to and into the tumor he found a large pocket containing yellowish-gray grumous material, of which he removed at least one pint. He presented the remains of the uterine fibroids. The uterine cavity was small. She had no temperature and no annoying symptoms. The fluid must have been sterile because there was no temperature. This case might have gone on to cure if it had been left alone and if she had not again become pregnant.

Some Causes of Failure in Plastic Operations.—Dr. Samuel M. Brickner read this paper. He asked what constituted a failure in the results of a plastic operation. It might be anatomical, functional, or symptomatic failure. Three important elements entered into the performance of a plastic operation, namely, the patient, the operator, and the technique of the operation, including the after-treatment. The selection of patients for a plastic operation was the first important step. Diabetes, chronic nephritis,

exophthalmic goiter, an active tuberculosis, were contraindications to operation, except in cases of rectal or vesical fistula, or complex lacerations of the perineum, which threaten the patient's life or which made her life a burden. Aged women, who could be made comfortable with the aid of pessaries, were better treated thus than by operative intervention. Unless a perineal laceration could be repaired within a few hours or a few days after the birth of the child, it was far better to wait a full eight months; before this period had elapsed the tissues were not only exceedingly vascular, making hemostasis difficult, but they were more brittle. Women who were "run down" should first be subjected to the proper sort of tonic treatment. Plastic operation upon the vagina should be employed only by those thoroughly familiar with gynecological work. Gynecologists could prepare themselves for this plastic work only by unremitting toil and ceaseless work. The operator should be born with, or must acquire, a "plastic imagination." No factor contributed to failure more frequently than incompleteness. To attempt to correct a complete laceration of the perineum by the flap-splitting method without denuding and repairing the invariable vaginal laceration, involved inevitable failure; and yet this was not an uncommon blunder. Perhaps the most common error in this category was the suture of the vaginal mucosa in either anterior or posterior colporrhaphy without including the fascia in the former case and the muscles and fascia in the latter. An operation for cystocele was not complete unless it included pushing back the bladder and its retention in its new position by some method of suture. The denudation or the suture of the underlying tissues must be so done that the suture of the mucous membrane would lie in the median line. It was also important that like tissues be joined. Many an extensive and well-performed plastic operation had been ruined because the patient's bowels had moved during the procedure. If the finger was to be inserted into the rectum while suturing the posterior vaginal wall, it should be protected by a sterile finger-cot or glove; but the tying of sutures should then be done by an assistant. A too liberal use of antiseptics and a too vigorous scrubbing of the vagina might so injure the mucous membrane that it would not readily heal. A prominent cause of necrosis of tissue following plastic operation lay in tying the sutures too tightly, especially if they were of chromic catgut. Sutures should not be placed too near each other. Personally he did not believe that it made much difference what kind of suture material was used, provided the stitches were placed at proper intervals, were not tied too tightly, and, if of silk or silkworm gut, were removed before they had torn through, or if they strangulate the tissues, or when they became loose. Perfect hemostasis was an important desideratum in plastic operations. A frequent source of functional failure in plastic operations lay in the too tight closure of the vulvar outlet; the reverse was also true. With regard to the after care of plastic cases, there was one blundering error of permitting a full-sized rectal tube to be passed in cases of complete laceration of the perineum. A suitable length of time should pass before the bowels were permitted to be moved. Catheterization must be rigidly aseptic, for a woman was not cured who left their hands with chronic cystitis. This again was a subject for scrupulous teaching to nurses.

Dr. Brooks H. Wells said that he subscribed most heartily to everything the doctor had stated, and emphasized the fact that the patients should be properly prepared before operation. To get the best results, the patient should be in the hands of a well-trained gynecologist. He emphasized the importance of a wide separation of the bladder from the underlying tissues in order to get the most perfect results. He called attention to the persistent and sometimes serious hemorrhage that occurred from the veins at the base of the bladder; this happened when the operator went a little deeper in the tissues than was necessary. He did not like to tie vessels in plastic operations. The smaller the number of ligatures used in plastic operations the better the healing. In operations upon the posterior wall it had always seemed to him that the shape of the denudation was the least important thing; the most important thing was to recognize the nature of the injury in that particular case and to try to overcome it. In nearly all these cases, where the indications were clear for operation upon the posterior wall, one would find marked relaxation of the fibers of the levator ani muscle. In examining such a case one should insert the finger and the muscle bundle would be found quite well up. Unless the sutures were placed so as to bring these fibers together good results would not follow. The fingers should be kept out of the wound and away from the business ends of the instruments. If gauze pads were used, they should be used at once. One should irrigate with normal salt solution. In complete lacerations of the perineum an important point was to make the incision above the angle of the tear between the rectum and the vagina, a little way up in the mucous membrane of the posterior wall, and dissect down, turning down and making this apron cover the rectum. This avoided sutures in the mucosa of the rectum and the infection of the wound. In cases of complete prolapsus the method which gave the greatest success was a high amputation of the cervix, as Kelly did, following it up with an operation upon the anterior and posterior wall; then make an incision in the median line of the abdomen and do a ventral fixation, picking the uterus up from the front and stitching it against the anterior wall.

Dr. George H. Balleray said that it was a great mistake to operate too soon after delivery, when the parts were not in proper condition for healing. That was the fault frequently found in the cases sent to him. Preparatory treatment was certainly indicated. In many of the rebellious cases of prolapse it seemed to him better to remove the uterus per vaginam and then to do an anterior and posterior colporrhaphy if necessary.

Dr. L. J. Ladinski said that plastic work was underrated as a rule, not only by men with proper training and ability and technique, but even by those who were looked upon as gynecologists. Such work was usually handed over to members of the house staff. Personally he felt that his plastic work in the gynecological department had been more satisfactory than in others, and the patients were more grateful. The patients were always grateful. Whereas patients operated upon for tumors, with their lives saved, always had some cause for complaint subsequently, either from loss of function or some little pelvic trouble, going from one physician to another, and they were not at all grateful. Sharp rather than blunt dissection should always be done; it removed less tissue and left a better surface behind.

Dr. Wells said that when he spoke of sharp dissection it was in reference to the perineum.

Dr. S. M. Brickner said in reference to the point raised by Dr. Wells in operations for complete prolapse of the uterus, that no operation would be a successful one unless one precaution was taken, viz., after amputation of the cervix and when the sutures were taken in the continuance of the plastic operation, as each suture was tied the cervix should be pushed back a little. If that was not done when the posterior colporrhaphy was done, the stump of the cervix would become strangulated between the sutures above it in the anterior and posterior wall and slough away.

The Diagnosis of Early Pregnancy.—Dr. L. J. Ladinski read this paper. (See page 597.)

Dr. E. McDonald said that in a discussion on the early signs of pregnancy held in Philadelphia the speakers, among whom were Hirst, Baldy, and others, depended upon one

sign for the diagnosis of early pregnancy, and this Dr. McDonald thought was a mistake. In a study he presented there he gave the findings in 100 cases and he thought that a résumé might be of interest to the members of the Section. This was as follows:

Week.	5	6	7	8	9	10	11	12	13	
No. of Examinations.....	6	8	12	12	15	15	12	12	8	
Enlargement Symmetrical..	..	4	9	3	9	3	9	11		5—53
Left	2	1	2	3	3	6	2	..		2—21
Right	4	3	1	6	3	6	1	1		1—26
Softening Symmetrical....	..	4	9	3	9	3	9	11		5—53
Left	2	1	2	3	3	6	2	..		2—21
Right	4	2	1	6	3	6	1	1		1—25
Jacquemier's, Slight.....	..	2	3	6	9	4	2	4		1—34
Marked	..	..	..	3	..	6	6	4		1—23
Absent	6	6	9	3	6	5	4	4		.—43
Hegar's, Moderate.....	2	6	6	6	9	8	4	3		1—45
Definite	2	1	3	6	6	7	8	9		7—49
Absent	2	1	3	..	..	..	..	..	..	.— 6
Cervix, Blush.....	2	1	3	6	9	10	10	12		8—61
Absent	4	7	9	6	6	5	2	..	..	.—39
Cervix, Softening.....	2	2	6	6	8	12	10	12		8—66
Absent	4	6	6	6	7	3	2	..	..	.—34
Intermittent Contractions..	3	6	12	12	19	13	11	12		8—88
Absent	3	2	..	..	4	2	1	..	..	.—12
McDonald's, Definite.....	2	6	8	9	18	12	10	10		8—76
Moderate	2	2	3	3	4	3	2	2	..	.—21
Absent	2	..	1	..	..	..	..	..	..	.— 3

Dr. Sidney D. Jacobson said there was no occurrence in the whole life history of woman which so profoundly affected her body and mind as the advent of pregnancy. Every organ in the body was influenced directly or indirectly by constructive metamorphosis which went on within the uterus. Thus the thyroid gland enlarged, the heart hypertrophied, the kidneys, liver, and digestive tract showed the strain of increased metabolism. The skin became pigmented and both the cerebrospinal and sympathetic nervous systems gave evidence of functional disturbance. The blood also was altered profoundly in its character; it became hydremic, and a leucocytosis was found. This leucocytosis was progressive and reached its highest point just before delivery of the child and then dropped below normal for several days or weeks. Rokitansky pointed out that during pregnancy calcareous plates were deposited upon the inner table of the patient's skull, and he called these puerperal osteophites. Because they were rather elementary Dr. Jacobson said that he would refrain from describing the minute histological changes which took place in the genital tract of the pregnant woman, but would point to some interesting facts which perhaps were not so well known or so constantly taught. (1) The uterine and ovarian arteries enlarged so that at term they were the size of a crow's quill, while the veins became as thick as a man's little finger. (2) The unstriped muscular fibers which composed the bulk of the uterine musculature became elongated to ten times their previous size, viz., 500 microns. (3) According to Levret the surface of the virginal uterus was about 16 square inches; at the end of pregnancy this had enlarged to 339 square inches. (4) According to Krause the capacity of the uterus at term was 519 times as great as that of the virgin uterus. Roughly, this would be like the difference in size of a rowboat and an ocean steamer. (5) The weight of a nonimpregnated normal uterus was about 50 grms.; at term it was 1,000 grms. The laity could diagnose a pregnancy in an advanced stage; but in its beginning the diagnosis of pregnancy was very difficult. There was a multiplicity of signs of pregnancy, but not one of them was decisive before the third month. Dr. Jacobson said that he felt indebted to Dr. Ladinski for having brought forward a new sign which was decisive of early pregnancy, and if it proved such Dr. Ladinski would have earned great merit and deserve the gratitude of the whole profession.

Dr. Brooks H. Wells said that in 1884 Dr. Collyer and himself made the diagnosis of pregnancy by this same sign, but they had called it by other names. These signs, like others, were discovered, became popular, and were then forgotten. Then they were, as it were, rediscovered. Therefore, Dr. Wells objected to calling a sign by the name of an individual, but preferred to give it a descriptive name. He believed it was perfectly possible to diagnose pregnancy in certain cases as early as the fourth, the sixth or the eighth week. A number of cases had been positively diagnosed in the fifth and sixth week.

Dr. Herman L. Collyer said that he believed Hegar to be the first to discover or suggest this early sign of pregnancy and, in this country, Dr. Grandin wrote the first article on Hegar's sign, but he had added to that sign what Dr. Grandin had discovered himself but without taking the credit. Hegar's sign was merely the softening of the cervical tissue. Dr. Collyer called it an elastic enlargement at the fundus, as though a rubber ball had been shoved up the uterus. Dr. Dickinson had written an excellent article on this and gave an interesting description. In addition to the elastic enlargement, discoverable at four weeks, there was also a softening at the tip of the cervix. There was also beginning softening of the cervical tissue, but this was not so early as the elastic enlargement at the fundus. If the ovum was impregnated at the cornua, the elastic enlargement would be at that cornua of the uterus. It seemed to him that the uterus enlarged at the site of the ovum, where it was apt to remain. Dr. Collyer said there was another sign equally important, but only corroborative—the pulse sign of Janet of Paris; in this the pulse beats were the same whether the patient was standing or sitting.

Dr. William S. Stone said that at the Vanderbilt Clinic since September every man who had examined a certain woman said, "She is about four months pregnant." Dr. Stone had said the same thing only yesterday (March 27). Therefore, there was some uncertainty about this sign. He asked if this elasticity was felt just above the internal os and then called attention to the explanation of this softening occurring in Winter's book on "Gynecological Diagnosis." McDonald's sign depended upon the same anatomical condition as did Hegar's sign. There was one thing that they could rely upon, namely, the asymmetrical uterus in the early part of pregnancy.

Dr. F. A. Dorman said there were cases in which every sign would fail, and the more one examined these cases the less willing would he be to swear absolutely that a woman was pregnant at the sixth week. The sign offered by Dr. Ladinski was a valuable one and, from the strong statements made, he would study it more.

Dr. Ladinski said that he had been teaching the importance of this sign for fifteen years and that he had always told his students that the sign was *not* original with him. He had had a splendid opportunity to examine for this sign at the Beth Israel Hospital, where on some days as many as seventy or eighty women were examined, and the sign was found without any questioning of the patient. He believed that the sign was infallible.

SECTION ON PEDIATRICS.

Stated Meeting, Held March 14, 1907.

Dr. Godfrey R. Pisek in the Chair.

Angioneurotic and Other Essential Edemas in Children.—Dr. Herman Schwarz described in brief some of the theories as to the causation of general and local edema. The works of Weltzer and Inincke were mentioned. He then went on to the clinical portion of this paper. The first case was one of general edema following scarlet fever, without albumin or casts in the urine. The edema occurred in the second week of the disease, during what

appeared to be a normal convalescence, it lasted about two weeks, and at no time was there albumin in the urine. The patient made a perfect recovery. The second case was one of giant urticaria following scarlet fever after the exhibition of quinine. There was swelling of the hands, face, and feet, occurring one after the other and disappearing rapidly. The urine was and has been perfectly normal. The third case was one of general edema following erysipelas neonatorum. Here the signs of the erysipelas had almost entirely disappeared, and it was only with the help of the previous history and the condition of the skin (bleb-desquamation, etc.) that the cause of this edema was discovered; urine negative—recovery in two weeks. Finkelstein and Hensch mention similar cases. The fourth case was one of general edema, following gastroenteritis. The uranalysis was negative. This case was interesting inasmuch as the child was given a mixture of fennel tea and barley water for three weeks. During this time it had no edema. Then it was put upon a mixture of equal parts of milk and barley water—seven bottles a day and a pinch (10 grs.) of salt in each bottle—in other words, the child received 70 grains of NaCl in 24 hours. After being on this mixture for three days the edema began to appear. Very probably the atrocious mixture of fennel tea and barley water and the resulting poor condition of the child had a great deal to do with the edema, yet in the light of our new theories as to the connection between the retention of chlorides and the appearance of edema, the large amount of salt taken by the baby might also be taken into consideration and probably be an exciting factor in this case. The fifth and last case was one of angioneurotic, or better, acute circumscribed edema, in a girl of eleven years. The attacks had been coming since her sixth year—face, hands, and feet, were involved at different times. She had had edema of the glottis twice during the past three years. With and without these swellings there were attacks of abdominal pain and vomiting. These attacks lasted twelve to twenty-four hours. There was no family history. Neither diet nor drugs had had any effect in diminishing the frequency or severity of the attacks.

Dr. Attilio Caccini reported the case of a girl, seven years old, who was taken ill and developed general anasarca, and died without presenting any kidney lesions so far as the urinary findings were concerned. The examination of the blood showed 7,000,000 red cells, and 120 per cent. hemoglobin. This was a case probably of angioneurotic edema. He said that he had at present a boy, twelve years old, under observation, whose attacks came on with the slightest disturbances, as of the tonsils or the intestines. There was much itching, especially of the head, neck, and chest. After two or three days lumps would appear on his forehead, then all over the head, their size being about that of half an orange. These lumps at times made him appear as a monster. Another case he had seen was that of a boy who was suddenly taken with great dyspnea and, in spite of intubation and tracheotomy, died. At autopsy nothing was found to account for the death except the edema of the larynx. He related the history of another case of a superintendent of a hospital who complained of toothache, and who was advised to go to a dentist. For some reason he was given phenacetin, walked from the hospital, and in fifteen minutes dropped dead on the sidewalk. His eyes were so swollen that he was hardly recognizable.

Dr. Louis Curtis Ager of Brooklyn believed that in the first two cases reported by Dr. Schwarz, the so-called angioneurotic edema following scarlet fever, there might have been some kidney lesions behind to account for the edema which had not been recognized. He called attention to Dr. Cabot's long series of investigation in relation to the urinary findings in the various forms of nephritides, and how careful one should be to exclude nephritis because of negaitve urinary findings. A large number of cases that came to autopsy showed kidney lesions when there were only negative urinary findings during life. One should bear in mind too that all sorts of irritating conditions of the skin were produced in children under one year of age by slight reactions or mild infections. Again, in true angioneurotic edema there was apt to be an eosinophilia. Most of these cases he thought were due to some toxic condition.

Dr. Godfrey R. Pisek recently was called to see a case of primary edema of the lungs. Under large doses of strychnine and adrenals by the mouth, the condition cleared up. The child was two and a half years old.

Dr. George Dow Scott reported the case of a child with acute bronchitis and edema of the larynx. The patient quickly became moribund and died.

Dr. Eli Long said that many of the cases of edema were due to nephritis, whether anything was found during life in the urine or not. In those poorly fed, in marasmatics, edema appeared sooner or later. Also, it was seen in children with congenital specific disease. He thought that angioneurotic edema should be placed in a class by itself, where there was no etiological factor. Dr. Long told of the case of a child fed on condensed milk; when placed on proper food the edema cleared up and a good recovery followed.

Dr. E. H. Bartley of Brooklyn asked for a distinction between angioneurotic edema and giant urticaria. He reported the failures made in attempting to cure a man, forty years old, who had what was diagnosed as giant urticaria or hives.

Dr. Schwarz said that he had tried to find a distinction between giant urticaria and angioneurotic edema, but had not been successful. Cases of urticaria, however, were almost always associated with some form of digestive disturbance. Packard had mentioned a case of urticaria associated with asthma. Dr. Schwarz could not find any mention of the violent attacks of colic, vomiting, or diarrhea in angioneurotic edema, as occurred in some forms of urticaria. Light attacks of edema following gastrointestinal disturbance he believed to be quite common, and they disappeared very rapidly on change in diet. The cases he reported were not very common, especially that one of erysipelas neonatorum. In the case of enteritis the question arose whether or not the salt given might not have had some effect in the production of a nephritis.

The Indications for and the Technique of Paracentesis of the Drum Membrane.—Dr. John McCoy read this paper. He first took up the anatomical considerations, believing that for the intelligent understanding of the causes and effects of suppuration of the middle ear, it was absolutely essential to have a comprehensive knowledge of the anatomy of this region. It was of special interest to note that the roof or vault of the tympanic or middle ear cavity was formed by the osseous lamina of the squama and had lying above it a portion of the brain of the middle fossa. In infants the petrosquamous suture was still patent, and there was an intimate relation of the blood-vessels of the dura and of the middle ear. This explained why so many infants manifested meningeal symptoms when they had a suppuration in the middle ear, and why it was so easy for them to develop a meningitis. The following points should be looked for in a normal drum: (1) A lustrous pearl-gray, slightly concave, membrane. (2) A bright reflex of light at the anterior inferior quadrant of this membrane. (3) A prominent white projection about the size of a small pin head situated in the center of the upper portion of the drum. (4) Two whitish bands running from this prominent white spot in a horizontal direction, one to the anterior circumference, and the other to the posterior circumference of the drum. These were known as the anterior and posterior folds, and marked the dividing line between the relaxed and the tense portion of the drum. Aside from traumatic rupture of the drum and infection of the middle ear from the external auditory

canal, the cause which led in the great majority of cases to a suppurative inflammation of the middle ear cavity, was an extension of an inflammation from the nose or pharynx through the Eustachian tube. Occasionally, however, the inflammation in the middle ear was primary. It had been demonstrated that streptococci were found in the healthy middle ear free from all inflammation. The diseased conditions which conduced to an involvement of the middle ear through the Eustachian tube were such as occurred in any of the exanthemata, especially scarlet fever, diphtheria, measles, pneumonia, and influenza. It frequently followed the ordinary catarrhal cold, and it might follow the introduction of fluids through the nose into the Eustachian tube. Following the changes to be seen in the drum membrane from the inception of the inflammatory process to the time when it became necessary to incise it, there would be seen, first, that the drum was losing its luster; following this there would take place a congestion in the upper relaxed portion of the drum which would gradually spread over the whole drum. Then would be noticed a slight bulging of outward, usually in the upper posterior portion of the drum. It was then time to incise it. In examining an ear for this condition it was well to bear several points in mind, as follows: (1) In infants, the auricle should be drawn downward and backward to separate the inferior from the superior wall of the meatus. In older children the auricle should be drawn upward and backward. (2) One should be prepared with an applicator and cotton to remove particles either of wax or dead epithelium or medicaments, such as oil or other substances that might have been introduced into the canal. (3) One should remember that instead of seeing a red bulging drum, one might see a drum of a dull whitish-gray color. This was due to necrosis of the epithelium of the dermal layer of the drum, and if this was gently swabbed it would come away and reveal the congested drum beneath. (4) It was always well to examine both ears. Many children gave no subjective symptoms of ear trouble. Earache was frequently produced by decayed teeth, without any change in the ear whatsoever. Fever was really the only constant symptom, and in the absence of all other physical signs to explain it, the ears should always be examined. Prior to a paracentesis the external auditory canal should be sterilized by irrigation with 1-2000 bichloride solution. The hands should be sterilized and the instruments boiled. In infants it was better not to give an anesthetic. For older children nitrous oxid gas was safe and efficient. Beginning at the lower posterior segment a small straight, or sickle-shaped knife should be plunged into the membrane, and this should be carried directly up to the superior margin of the drum and in withdrawing the incision should be carried outward for about one-eighth of an inch. This gave free drainage to the whole cavity; the loss of blood and fluid relieved the pressure and pain; there was more rapid healing of the cut surface than if a small opening was made or a spontaneous perforation was allowed to take place; there were also minimized the chances of mastoid involvement. The dangers of paracentesis were that if too much force was used, or if the operator did not know the direction in which his knife was cutting, he might enter some of the structures he had enumerated; cases had been reported where the jugular bulb, the carotid artery, or the internal ear had been entered.

Dr. Louis C. Ager, Dr. Herman Schwarz, Dr. Eli Long, and others discussed this paper.

Dr. McCoy closed the discussion.

Chicago Medical Society.

At a regular meeting held February 20, 1907, there was a symposium on Influenza. Dr. Joseph L. Miller discussed the etiology, diagnosis, symptoms, and treatment, with special reference to the cardiac, pulmonary, and gastrointestinal complications. Dr. Wm. G. Stearns pointed out the complications affecting the nervous system, and discussed their treatment. Inasmuch as the primary effect of the influenzal toxin upon the nervous system is always irritative, he said opium and bromides were found to be of the greatest use. Calomel and soda, if given with opium, would aid the diuretic and hepatic stimulation. Where the wet pack was properly used, its effect was most beneficial. Dr. William Lincoln Ballenger, in discussing the treatment of acute mastoiditis due to scarlet fever, diphtheria, and influenza, presented the following conclusions: (1) The reaction of inflammation consisted of an increased hyperemia, increased cell nutrition (increased resistance), and an increased migration of leucocytes. (2) The reaction of inflammation was an increased physiological activity for the purpose of eliminating certain noxious irritants, notably bacteria and their toxins, from the tissues. (3) In acute inflammations the reaction of inflammation was usually inadequate to accomplish the destruction of the bacteria and their toxins within a short time. (4) The reaction being inadequate, it should be promoted, and experience had shown such promotion to be effective. (5) In acute otitis media incision of the ear drum promoted the reaction of inflammation in the quickest and surest way, and thus often prevented destructive processes of this important organ. Incision also provided for adequate drainage, and thus favored the elimination of the bacteria, and raised the resistance of the tissues. In acute mastoiditis, leeching, in addition to incision of the ear drum, if spontaneous perforation had not already occurred, was the best available means of promoting the reaction of inflammation. Heat followed by a dash of cold water was another effective means of promoting the reaction of inflammation. Dr. H. Manning Fish discussed the complications of influenza resulting from infection of the nasal accessory sinuses. The author said that the cerebral and ocular symptoms which either accompanied influenza or appeared in a patient with a history of influenza should suggest a sinus disease. Certain symptoms, as vertigo, cephalalgia, optic neuritis, and other ocular lesions that were often attributed to circumscribed meningitis, or to a brain tumor, might be due to a sinus disease. A recurrent inflammatory condition in the eye that was aggravated by a cold, or was worse in the winter months, suggested a chronic sinusitis. In all cases with cerebral symptoms the accessory sinuses should be examined as well as the ear. Sinus disease should not be excluded on account of a negative nasal finding, or by the absence of pain, either spontaneous or on pressure. In the discussion Dr. Theodore Tieken said he had noticed irritable bladder in many cases of influenza, and in these microscopic examination disclosed a catarrhal cystitis. He mentioned a young girl, with influenza, who urinated every ten or fifteen minutes. Dr. Adolph Gehrmann referred to the wide distribution of the bacillus of influenza, saying it was relatively easy to find on mucous surfaces and in pus that had recently formed. Apparently this bacillus died when the pus remained for any length of time, and we probably had the effect of the influenzal bacillus through its toxin from disintegration. He had found this bacillus on every mucous membrane in the body. Dr. Aemerin W. Baer deprecated the frequent use of coal tar preparations in treating cases of influenza, believing that nothing was more debilitating to sick patients than the addition of such drugs to their already diseased condition.

Nervous Lesions Accompanying Exophthalmic Goiter.—Poggio describes the autopsy on a woman [illegible] years, suffering from exophthalmic goiter, who died in coma. Except for slight cardiac hypertrophy the organs were normal. The central nervous system was congested and in the medulla, pons, the floor of the fourth ventricle and in the nuclei of several of the cranial nerves there were degenerative changes.—*Clinica Medica Italiana.*

Surgical Suggestions.

Gunpowder Marks. An ointment of beta naphthol, 10; sulphur, 45; lard, 24; and green soap, enough to make 100 parts, is useful in removing gunpowder not too deeply situated in the skin. It must be employed cautiously, however, to avoid a destructive dermatitis.—*American Journal of Surgery.*

Epididymitis.—Johnson reports excellent results following the application of adhesive strips, which latter are so placed that they form a sling. The technique follows: After shaving the parts, the patient being in dorsal decubitus, a strip of zinc oxide plaster two and one-half to three inches wide is applied to the lower abdomen, from one and one-half to two inches from the median line; the strip, face upward, is taken around and under the scrotum, elevating the testicles to a level at least as high as the penopubic angle, and forming, as it were, a sling; the other end of the strip is passed upward on the opposite side of the median line of the abdomen. A second strap is similarly applied, and adjusted about the scrotum; a few short straps are placed across the anterior portion of the scrotum. Johnson emphasizes the fact that there should be no pressure made on the inflamed tissues.—*St. Louis Courier of Medicine.*

Removal of Adenoids.—The following position of the patient is recommended by Holmes in the *Laryngoscope:* The patient, when thoroughly anesthetized, is placed on his left side on an operating table, the foot of which is slightly elevated. The left arm and shoulder of the patient are drawn back, so that the former lies on the table behind the patient, and the right shoulder is drawn back by an assistant with a view to increasing the breathing space and at the same time steadying the child. The face is brought even with the edge of the table or slightly over the edge, and the operator, equipped with an electric forehead mirror and seated on a stool of medium height, performs the operation in the usual way. By this method of performing the operation, first, the position of the patient adds nothing to the ordinary dangers of the anesthetic; the force of gravitation does not add to the burden of the heart; the neck is straight; the respiration is not embarrassed by "embracing" the chest or "fixing" the arms or by the pharynx filling with blood which is likely to find its way into the windpipe. Second, the position of the head is such that all of the hemorrhage finds its way out of the nose, or out of the mouth. In this way the field of operation is kept clear so that the operator can at all times see the posterior pharyngeal wall or can easily clear it with a wad of cotton on a sponge holder, and can detect and remove any shreds that tend to make the operation imperfect; and, third, the amount of blood lost can be accurately appreciated.—*Fort Wayne Medical Journal.*

Rectal Hemorrhage.—Mason says that when blood is passed from the bowel it is nearly always due to some form of internal hemorrhoids, generally of the capillary variety. Well-formed venous tumors, when constricted by the internal sphincter muscle, often bleed profusely, due to the blood being forced out through a small opening in the tumor wall. In either case the blood is lost at stool. If the amount is small and is noticed immediately following a bowel movement and is accompanied by pain of a lacerating, aching character, it probably comes from a fissure. If it comes on independently of a bowel movement it may be due to a carcinoma or ulcer. If it comes on suddenly and has not been noticed before, it may be due to a foreign body.—*American Journal of Clinical Medicine.*

Ankylosis of the Elbow.—Hoffman has successfully transplanted a flap of periosteum from the tibia to the freshened surfaces of the humerus and ulna in a case of ankylosis at the elbow and in this way secured a satisfactory result.—*Archiv für klinische Chirurgie.*

Milk as a Hemostatic.—Salt states that in a number of cases he has found that milk given by rectum served as a hemostatic in cases of uterine, gastric, and pulmonary hemorrhage. From eight ounces to two pints of milk, to which a little salt had been added, were injected. Salt explains the effect by referring to the fact that milk contains a number of substances, such as calcium and iron salts, that are ordinarily used as hemostatics, as well as the products of the degeneration of leucocytes. When the milk is given by mouth the digested processes interfere with this hemostatic action.—*Therapeutische Monatshefte.*

Retroversion of the Uterus.—The following modification of the many similar operations for this condition is suggested by Liepmann. The peritoneum at either side of the median incision is buttonholed and through each of the small openings a loop of the corresponding round ligament is drawn and fixed by a suture passing through the fascia of the rectus muscle.—*Zentralblatt für Gynäkologie.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NEVADA.

August 7, 8, and 9, 1905.

ANATOMY.

1. What valves guard the auriculoventricular opening in the left side of the heart? Those in the right?
2. Between the cartilages of what ribs would you locate the apex of the normal heart? What is the average weight of the heart of an adult male?
3. What is the average weight of the brain in the adult male? In the adult female?
4. Name the three principal arteries of the forearm.
5. Of what artery is the nutrient of the tibia a branch?
6. Describe a sesamoid bone, its development, and function. Name the largest in the body.
7. What muscles are attached, wholly or in part, to the trochanter major?
8. Name the nerve that supplies the tongue with the sense of taste; of sensation; of motion.
9. Name the three muscles of the tibiofibular region (superficial) that form the calf of the leg.
10. Name the ligament implanted near the center of the head of the femur.

PHYSIOLOGY.

1. Describe a cardiac cycle, and give the phenomena attending it.
2. Describe the reflex centers.
3. Describe the phenomena of blood clot.
4. What is the function of bile?
5. What is the normal ratio of heart pulsations to respiration in a healthy adult?
6. Give the physiological cause of sleep.
7. What is the function of the cerebellum?
8. Give a brief description of the portal circulation.
9. Give principal events in gastric digestion.
10. Define blood pressure.

PATHOLOGY.

1. Give the pathology of arteriosclerosis.
2. What diseases are attended with ulceration of the intestines?
3. What diseases are attended with cardiac hypertrophy?
4. Describe pus, and give its essential elements.
5. Differentiate fatty degeneration and fatty infiltration; give cause of each.
6. Describe briefly the pathological changes taking place in acute lobar pneumonia.
7. Describe lipoma, and give its most frequent locations.
8. State the most important sequel of diphtheria, and describe to what extent it may occur.
9. What is the significance of hyaline casts in urine? Of granular casts?
10. Give pathology of embolus; of thrombus.

BACTERIOLOGY.

1. Give Koch's rules in regard to bacterial cause of diseases.
2. Describe the Klebs-Löffler bacillus.
3. Name four pathogenic bacteria that do not stain by Gram's method.
4. Describe the Widal serum reaction.
5. What is the commonest microorganism found in empyema?

MATERIA MEDICA AND THERAPEUTICS.

1. Give the adult dose of three opium preparations. Name its principal alkaloids.
2. Name three mercurial preparations. Give dose and use of each.
3. Name five emetics with dose of each.
4. Name two drugs incompatible with tannic acid. Give reasons.
5. With what preparations should the iodides *not* be combined?
6. Why should pepsin and pancreatin not be used together?
7. When is turpentine contraindicated?
8. From where are the following alkaloids obtained? Quinine, strychnine, physostigmine, hydrastin, atropine.
9. Outline treatment of a case of acute pneumonia.
10. Outline treatment of a case of typhoid fever.

CHEMISTRY AND TOXICOLOGY.

1. What is a mechanical mixture? A chemical compound? Give three examples of each.
2. Describe briefly the three acids most used in laboratory.

3. State the occurrence and properties of oxygen, hydrogen, and nitrogen.
4. State the occurrence and properties of arsenic, mercury, and iron.
5. Describe respiration from a chemical point of view.
6. Describe the toxic effect of carbolic acid. Outline treatment for same.
7. Give symptoms of and antidote for arsenic poisoning.
8. Give symptoms of and outline treatment for a vegetable poison.
9. Name antidote for nitrate of silver, opium, phosphorus, corrosive sublimate, wild parsnip.
10. Give inventory for contents of antidote bag.

THEORY AND PRACTICE OF MEDICINE.

1. Give the symptoms of typhoid fever in first, second, third, and fourth weeks, and treatment of same.
2. Give diagnosis, pathological anatomy, symptoms, and treatment of chronic parenchymatous nephritis.
3. Give symptoms and treatment of cerebrospinal meningitis.
4. Give stages and symptoms of acute lobar pneumonia, and treatment.
5. What are the symptoms, complications, and differential diagnosis of acute articular rheumatism and treatment?
6. What are the causes of, morbid anatomy, symptoms and treatment of rickets?
7. Give differential diagnosis of chronic gastric catarrh, gastric ulcer, and gastric cancer.
8. Give the forms of endocarditis, pathological anatomy, and physical signs.
9. Give definition, etiology, symptoms, complications, prognosis, and treatment of erysipelas.
10. Give the causes and symptoms of pneumothorax.

OBSTETRICS.

1. What is tubal pregnancy? Differentiate it from normal pregnancy. What are the three greatest dangers to the mother in tubal pregnancy?
2. What foramen unites the right and left auricles in the fetal heart?
3. In twin births how many placentas are there?
4. What membranes invest the fetus? Define their relations to it from within outward.
5. What veins carry arterial blood in the fetus?
6. What are the two most reliable diagnostic indications of abortion? How would you treat a case of threatened abortion?
7. What position does the uterus assume during the first three months of pregnancy?
8. What is the average period of pregnancy, computed by days? What were the extremes that legitimized a child under the Code Napoleon?
9. Diagnose a placenta previa. How would you treat such a case?
10. What are the most grave gynecological diseases to anticipate after delivery?

GENITOURINARY DISEASES.

1. Give differential diagnosis of anterior and posterior urethritis, complications of each, and write six prescriptions for treatment, three internal and three local.
2. What are the causes of orchitis, and give treatment of same.
3. Give treatment for gleet.
4. Describe a case of gonorrheal rheumatism, give causes, treatment, and prognosis.
5. Give history and description of syphilitic dermatitis.
6. Make differential diagnosis of hard and soft chancre and treatment of each.
7. Give causes, symptoms, and treatment of organic urethral stricture.
8. What is syphilitic dactylitis, the varieties, and tissues involved in each variety?
9. Describe the general course of syphilis, giving stages, symptoms, and treatment of each stage.
10. Give causes, symptoms, prognosis, and treatment of pyosalpinx.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF NEVADA

August 7, 8, and 9, 1905.

ANATOMY.

1. The mitral or bicuspid valve, on the left side; the tricuspid valve, on the right side.
2. Between the fifth and sixth, on the left side. Average weight is ten to twelve ounces.
3. In the male, forty nine ounces, in the female, forty-four ounces.
4. The radial, the ulnar, and the posterior interosseous.
5. The posterior tibial.
6. Sesamoid bones are cartilaginous in early life, but later become osseous. They are developed in the tendons of muscles at points where these latter are exposed to pressure upon the parts over which they glide. Their function is to increase the leverage of the muscles. The largest sesamoid bone in the body is the patella.
7. Gluteus medius, gluteus minimus, pyriformis, obturator externus, obturator internus, gemellus superior, gemellus inferior, and quadratus femoris.
8. The tongue is supplied with the sense of *taste* by the chorda tympani and the glossopharyngeal nerves; of *sensation*, by the lingual branch of the inferior maxillary division of the fifth cranial nerve; of *motion*, by the hypoglossal nerve.
9. The gastrocnemius, soleus, and plantaris.
10. The ligamentum teres.

PHYSIOLOGY.

3. When blood is withdrawn from the blood-vessels of the living body, it first becomes viscid, then sets, and is converted into a jelly-like mass. This is due to the formation of fibrin. The jelly contracts forming the clot; and at the same time the serum is squeezed out from the clot. Various circumstances and conditions will hasten or delay the process of coagulation. In man, the blood generally becomes viscid in from two to three minutes; it forms the jelly-like mass in from five to six minutes; a few minutes later the serum begins to appear; and the whole process is completed in from twenty-four to thirty-six hours. The clot then floats on the serum. The process is thus summed up by Halliburton: In the plasma a proteid substance exists, called Fibrinogen. From the colorless corpuscles a nucleo-proteid is shed out, called Prothrombin. By the action of calcium salts prothrombin is converted into fibrin ferment, or Thrombin. Thrombin acts on fibrinogen in such a way that two new substances are formed: one of these is unimportant and remains in solution; the other is important, viz., Fibrin, which entangles the corpuscles, and so forms the clot.
4. The functions of the bile are: (1) to assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach, and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.
5. About four or five heart pulsations to one respiration.
6. "There are several hypotheses as to the causation of sleep. It has been attributed to cerebral anæmia; to chemical changes in the brain cells or neurons, such as an exhaustion of their intramolecular oxygen, or an accumulation of fatigue products; to a contraction of the dendritic processes, and a consequent break in the transmission of nervous impulses; to an expansion of the neuroglial cell processes insulating the nerve cell processes, and producing the same effect; and to a purely psychological condition, namely, loss of consciousness apart from any physical or chemical change. This last explanation is simply a cloak for our ignorance. The most probable hypothesis is that of an altered metabolism of the cerebral cells dependent upon exhaustion and diminished influx of stimuli." (Allbutt's *System of Medicine*.) Two new theories have recently been promulgated. One claims that sleep is due to an internal secretion of the pituitary gland, whereas the other makes it depend upon the phenomena of osmosis.
7. Coordination and equilibrium.
8. The principal events in gastric digestion are the conversion of the proteids into proteoses and peptones, which are more soluble and diffusible. Starches are [illegible], and fats are not altered chemically.
10. Blood pressure is the pressure on the blood. Due to the ventricular systole, the elasticity of the walls of the arteries, and the resistance of the capillaries.

PATHOLOGY.

2. Typhoid fever, tuberculous enteritis, dysentery, chronic nephritis, extensive burns, syphilis, cancer, enteritis in children, actinomycosis, and anthrax.
3. Chronic nephritis, emphysema, tuberculosis, aortic stenosis, aortic regurgitation, mitral regurgitation, chronic myocarditis, arteriosclerosis, gout, lithemia, pericardial adhesions, exophthalmic goiter, hysteria, lead poisoning, and syphilis.

4. Pus is a thick, creamy fluid, alkaline in reaction, with a specific gravity of about 1030, and containing from eighty to ninety per cent. of water. On standing it separates into two layers, the upper part being fluid, and consisting of serum, a little proteid matter and liquefied tissue; the lower, or solid part, contains dead and living pus corpuscles, fatty and granular débris, and sometimes microorganisms, and a few red blood cells.

5. In *fatty infiltration* the tissues contain fat brought from without; there is no change in the cell protoplasm, and such damage as the tissue undergoes is due to the mechanical pressure caused by the fat.

In *fatty degeneration* the cell protoplasm undergoes change; the fat is in the cells, and not between them.

Fatty infiltration may be due to obesity, lack of exercise, overeating, or drinking, carcinoma, diabetes, chlorosis, fracture, or disease of bones, or it may be hereditary.

Fatty degeneration may be caused by poisoning (chiefly by phosphorus, lead, mercury, or arsenic), anemia, prolonged fevers, diabetes.

7. A lipoma is a benign tumor composed of fatty tissue. It is roundish, soft, generally circumscribed and encapsulated, and lobulated. On section the fat is seen to be divided by septa of fibrous connective tissue. It is of slow growth, and generally appears in adult or middle life, but may also appear in childhood.

The most frequent locations are the subcutaneous tissue of the shoulders, limbs, back, and buttocks, the mammary gland, and kidney.

8. Paralysis is the most important sequel of diphtheria. It is due to toxic neuritis, and is found as a rule during convalescence, and occurs in from about ten to fifteen per cent. of all cases. It may follow either a mild or a severe attack of diphtheria; and the pharynx, uvula, muscles of the eyes, face, one or both extremities, respiration, or heart may be affected.

9. "*Hyaline casts* are common to all diseases and disturbances of the kidney, and not pathognomonic of any one abnormal condition. They are, however, predominant in the sediment in cases of chronic interstitial, chronic diffuse nephritis, amyloid infiltration, and in passive hyperemia; while their relative proportion is much smaller in comparison with the other forms of casts present in active hyperemia, acute nephritis, and subacute glomerular nephritis."

"*Finely granular casts* are found in every disease or disturbance of the kidney; they, therefore, cannot be considered pathognomonic of any one disease or class of diseases." (Ogden, *On the Urine.*)

BACTERIOLOGY.

1. Koch's rules in regard to the bacterial cause of disease are: (1) the microorganism must be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal.

2. The Klebs-Loeffler bacillus is a short rod, about three to six microns in length, and about a half to one micron in breadth; the extremities may be rounded or clubbed. The bacilli are slightly curved, and may occur singly, in pairs, or in groups; they are non-motile, have no flagella, are aerobic, and contain granules which take on a deeper stain. The bacillus stains with the analine colors, by Gram's method, and with Loeffler's alkaline methylene-blue.

3. *Bacillus coli communis, Spirillum choleræ asiaticæ,* Friedlander's *Bacillus pneumoniæ,* and Obermeier's spirochete of relapsing fever.

4. The Widal serum reaction "depends upon the fact that serum from the blood of one ill with typhoid fever, mixed with a recent culture, will cause the typhoid bacilli to lose their motility and gather in groups, the whole called 'clumping.' Three drops of blood are taken from the well-washed aseptic finger tip or lobe of the ear, and each lies by itself on a sterile slide, passed through a flame and cooled just before use; this slide may be wrapped in cotton and transported for examination at the laboratory. Here one drop is mixed with a large drop of sterile water, to redissolve it. A drop from the summit of this is then mixed with six drops of fresh broth culture of the bacillus (not over twenty-four hours old) on a sterile slide. From this a small drop of mingled culture and blood is placed in the middle of a sterile cover-glass, and this is inverted over a sterile hollow-ground slide and examined. . . . A positive reaction is obtained when all the bacilli present gather in one or two masses or clumps, and cease their rapid movement inside of twenty minutes." (From Thayer's *Pathology.*)

5. The microorganisms most commonly found in empyema are the *Streptococcus pyogenes* and the pneumococcus; others commonly found are the *Staphylococcus pyogenes* and the tubercle bacillus.

MATERIA MEDICA AND THERAPEUTICS.

1. Pulvis Ipecacuanhæ et Opii, dose gr. vijss. Acetum Opii, dose ɱviij. Tinctura Opii, dose ɱviij. Vinum Opii, dose ɱviij. The principal alkaloids are: Morphine, codeine, thebaine, narcotine, papaverine, pseudomorphine, and narceine.

2. Hydrargyri Chloridum Corrosivum, dose gr. 1/20; used chiefly, externally, as an antiseptic and parasiticide. Hydrargyrum cum Creta, dose gr. iv; used chiefly as a mild laxative, an alterative, and antisyphilitic. Hydrargyri Subsulphas Flavus, dose gr. ij to iv; used as an emetic.

3. Apomorphinæ hydrochloridum, dose gr. 1/16, hypodermatically; or gr. 1/10, by mouth. Zinci Sulphas, dose gr. xv to xxx. Cupri Sulphas, dose gr. iv. Alumen, dose a teaspoonful. Antimonii et Potassii Tartras, dose gr. j to ij.

4. Ferric Salts and Alkaloids. With the former, ink is formed; with the latter, an insoluble precipitate.

5. With mineral acids, alkaloids and their salts, metallic salts, and ammonia.

6. Because pepsin requires an acid medium in which to exercise its powers, and pancreatin requires an alkaline medium.

7. In diseases of the kidneys, cardiac hypertrophy, hemorrhage, and plethora.

8. Quinine, from Cinchona. Strychnine, from Strychnos Nux Vomica, and Strychnos Ignatia. Physostigmine, from Physostigma (Calabar bean). Hydrastin, from Hydrastis (Golden Seal or Yellow Puccoon). Atropine, from Atropa Belladonna.

CHEMISTRY AND TOXICOLOGY.

1. *A chemical compound* is a substance made of two or more elements, chemically united, in definite proportions. Examples: water, sulphuric acid, iodoform.

A mechanical mixture is the product obtained by uniting into a more or less homogeneous whole two or more substances, whether elements or compounds, in any proportion, and without any chemical union. Examples: air, sugar adulterated with sand, salt in water.

2. *Hydrochloric acid:* when pure this is a colorless gas with a sharp, penerating, and irritating odor; it is very soluble in water; it does not support combustion nor does it burn in air; it is very corrosive. The ordinary hydrochloric acid is a solution of this gas in water, and is found in three varieties: the commercial, the pure, and the dilute acids.

Sulphuric acid is a colorless, thick, oily liquid, odorless, very corrosive; has a great tendency to unite with water; it chars organic matter.

Nitric acid is a colorless or faintly yellow liquid, has a sour taste, a suffocating odor, and is very corrosive. It is a strong oxidizing agent, and stains animal tissues yellow.

3. *Oxygen. Occurrence:* free in the air and in combination in water, rocks, minerals, etc. It is more abundant than any other element, forming about forty per cent. of the total weight of the earth. *Properties:* It is a colorless, odorless, tasteless gas, heavier than air, slightly soluble in water, has an intense affinity for other elements, combining with almost all of them except fluorine. It is necessary to life, and is a supporter of combustion.

Hydrogen. Occurrence: free in volcanic gases, in fire damp, and the gases of the intestines; and in combination in water, all acids and in many organic compounds. *Properties:* A colorless, odorless, tasteless gas, the lightest known substance; it has a great affinity for oxygen; it supports neither combustion nor respiration; it is a necessary constituent of all acids; the gas will burn with a pale blue flame, giving little light, but an intense heat.

Nitrogen. Occurrence: free in the air, in combination in nitrates, ammonia, and in many organic substances. *Properties:* A colorless, odorless, tasteless gas, it neither burns nor supports combustion nor respiration, it has no tendency to unite with other elements.

4. *Arsenic. Occurrence:* free in very small quantities; chiefly in combination with sulphur as realgar, orpiment, and mispickel. *Properties:* It is a gray solid, is easily powdered, if pure it is odorless and tasteless; it is a good conductor of electricity, and is easily oxidized. There are four atoms to the molecule of arsenic.

Mercury. Occurrence: Usually found in combination with sulphur, as cinnabar. *Properties:* It is liquid metal, is slightly volatile, the molecule contains only one atom; it unites directly with chlorine, bromine, and iodine; it is a necessary constituent of amalgams.

Iron. Occurrence: free, in small quantities only; in

combination as oxides, carbonates, or sulphides, in hematite, magnetic iron, spathic iron, pyrites, etc. *Properties:* Pure iron is white and soft, and crystallizes in cubes or octahedra; it is unaffected by dry air at ordinary temperature; in damp air it is converted into iron rust (a hydrate of iron); at red heat it is oxidized. It is dissolved by the strong mineral acids.

6. *Symptoms:* "Those portions of the skin and mucous membrane which have been in contact with the poison are whitened and hardened. There are burning pains in the mouth, esophagus, and stomach, and vomiting; lowering of the pulse and temperature, contraction of the pupils, stupor, syncope, and collapse, terminating in death. The urine, clear and of the normal color when voided, becomes rapidly greenish, and finally dark olive-green or almost black." (Witthaus.)

Treatment: White of egg should be administered; also sodium sulphate, and the stomach should be gently washed out. Alcohol is said to be antidotal.

7. *Symptoms:* "In acute cases the symptoms usually begin in from twenty to forty-five minutes. Nausea and faintness. Violent, burning pain in the stomach, which becomes more and more intense, and increases on pressure. Persisting and distressing vomiting of matters, sometimes brown or gray, or streaked with blood, or green (Paris green). Purging. More or less severe cramps in the lower extremities."

In Chronic Cases: "Inflammation of the conjunctivæ, with intolerance of light. Irritation of the skin, accompanied by an eruption (eczema arsenicale). Local paralyses. Great weakness and emaciation. Exfoliation of the cuticle and falling out of the hair." (Witthaus.)

The *antidote* is freshly prepared ferric hydroxide.

9. The *antidote* for *nitrate of silver* is salt and water; for *opium*, there is no one substance which is a complete antidote, washing out the stomach with a dilute solution of potassium permanganate is the best treatment; for *phosphorus*, old French oil of turpentine; for *corrosive sublimate*, white of egg; for *wild parsnip*, emetics, lavage, and purgatives.

10. The following is mentioned in Potter's *Materia Medica*, etc.: Dialyzed iron, syrup or chloral, chloroform, spirits of chloroform, calcined magnesia, aromatic spirits of ammonia, oil of turpentine, acetic acid, tincture of digitalis, tannic acid, amyl nitrite, zinc sulphate, ipecacuanha, potassium bromide, potassium permanganate. Also a hypodermic syringe and solutions or pellets therefor of: morphine sulphate, atropine sulphate, apomorphine hydrochlorate, pilocarpine nitrate, strychnine nitrate. To the above should be added a stomach tube and a soft rubber catheter.

THEORY AND PRACTICE OF MEDICINE.

7. *Chronic gastric catarrh* is generally caused by indiscretions in diet, or by mental worry, it may occur at any time of life, and is characterized by pain in the epigastric region which generally comes on after eating; there is apt to be morning vomiting, the vomitus consisting of mucus with undigested particles of food; there is seldom hemorrhage; the stomach may be enlarged, and examination of the gastric contents shows free HCl diminished or absent, and the digestive ferments diminished.

Gastric ulcer is generally caused by injury or bacteria, is most apt to occur between the ages of twenty and forty-five; after eating there is pain localized in the stomach, vomiting occurs soon after eating, hematemesis is common, there is localized tenderness over the stomach, and examination of the gastric contents shows an excess of free HCl.

Gastric cancer does not usually occur before forty years of age, is more common in males, the pain is localized and constant, vomiting is copious and occurs some time after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; severe anemia and cachexia are also present.

OBSTETRICS.

1. Tubal pregnancy is a pregnancy in which the ovum is arrested in the Fallopian tube and develops there instead of in the uterine cavity.

In differentiating this condition from a normal pregnancy the following signs and symptoms are of most reliance. "When extrauterine pregnancy exists, there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility. Nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy. Pains are often very severe, with marked tenderness within the pelvis. Such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating. This tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The os uteri is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 *are positive signs.*" (*American Text-Book of Obstetrics.*)

The three greatest dangers to the mother are: hemorrhage, peritonitis, and death.

2. The foramen ovale.

3. If the twins are from two ova from separate Graafian follicles there will be two placentæ; if from two ovules from one Graafian follicle, there will be one placenta; if from a single ovule with two nuclei, there will be one placenta.

4. The membranes investing the fetus are, from within outwards, the amnion, the chorion, and the decidua.

5. The umbilical veins.

6. Hemorrhage and a dilated os.

Absolute quiet and rest in bed, with the head lowered, and in a darkened room. Nerve sedatives should be administered in large doses; opium is indicated, either laudanum in fifteen or twenty minim doses, or the extract of opium in suppository. After the cessation of the hemorrhage the patient should be kept in bed for one or two weeks.

7. Increased anteflexion and descent.

8. About 278 to 280 days.

The extremes that legitimatized a child under the Code Napoleon were 180 and 300 days.

10. "Tears of the perineum destroy the integrity of the pelvic floor and result eventually in rectocele, cystocele, hemorrhoids, and displacements of the pelvic organs. If the tear involves the sphincter ani, incontinence also results. Lacerations of the cervix retard or check involution of the uterus and predispose to endometritis, menorrhagia, displacements, eversion of the cervical mucous membrane, cystic degeneration, and malignant disease. Deep lacerations of the vaginal vault may open into the base of the broad ligaments, and in the majority of instances genitourinary fistulas are caused by traumatisms of labor. All lacerations are immediately dangerous on account of the increased liability to sepsis, while the remote results are generally due to interference with involution or the pelvic circulation and to the destruction of the normal supports of the pelvis." (Ashton's *Gynecology.*)

GENITOURINARY DISEASES.

1. "*The symptoms of acute anterior urethritis* are: An incubation period of twenty-four hours, a tickling or an itching sensation at the meatus, which is red, glazed, and often colored with grayish, opaline mucus; the discharge is scanty at first, but gradualy increases. At the end of three or four days the redness and congestion about the meatus increase and may cause edema, phimosis, and paraphimosis. Lymphangitis is present. The discharge becomes thick and purulent. Ardor urinæ, chordee, and frequent urination are now present. At this stage, when the urine is passed into two glasses, in the first glass the urine will be cloudy; in the second, clear. The symptoms just mentioned usually last for about four weeks, when they gradually abate.

"*The complications of acute anterior urethritis* are phimosis, paraphimosis, chordee, painful erections, penitis, lymphangitis, adenitis, balanitis, periurethral abscess, Cowperitis, hemorrhage, and preputial folliculitis.

"*Symptoms of acute posterior urethritis.*—The discharge decreases; the frequency of urination increases; vesical tenesmus may be present; there is considerable pain; hematuria, albuminuria, and retention of urine are also symptoms. When the urine is passed into two glasses, both specimens will be cloudy.

"*Complications of posterior urethritis* are prostatitis, seminal vesiculitis, inflammation of the cord, epididymitis, orchitis, cystitis, nephritis, pyelitis, abscess of the prostate, abscess of the kidney, peritonitis, uremia, retention of urine, gonorrheal rheumatism. The sequels are hypochondriasis, sexual neurasthenia, stricture, impotence, sterility, hyperesthesia, spermatorrhea, and melancholia." (Gould and Pyle's *Cyclopedia of Medicine and Surgery.*)

2. *Causes of orchitis:*—Traumatism, inflammation of the urethra, epididymitis, rheumatism, mumps.

Treatment:—Rest in bed, elevation of the parts, hot or cold applications, pain is to be relieved by opiates or leeches, lead water and laudanum should be applied, salines or cathartics are to be administered. Sometimes strapping

the testicle is of service; so too, is the application of ichthyol and lanolin.

6.

HARD CHANCRE.	SOFT CHANCRE.
First lesion of a constitutional disease, viz., syphilis.	A local disease.
Due to syphilitic infection.	Due to contact with secretion from chancroid.
Generally a venereal infection.	Always a venereal infection.
May occur anywhere on the body.	Nearly always on genitals.
Period of incubation never as short as ten days.	Period of incubation always less than ten days (generally about three).
Generally single.	Generally multiple.
Not autoinoculable.	Autoinoculable.
Secretion slight.	Secretion profuse and purulent.
Slightly or not at all painful.	Generally painful.
As a rule only occurs once in any patient.	May reoccur in same patient.
Buboes are painless and seldom suppurate.	Buboes are painful, and usually suppurate.

8. Syphilitic dactylitis is a specific gummatous infiltration of the tissues of the digits, occurring in the tertiary stage of syphilis. It tends to undergo necrosis and ulceration, or inflammation and subsequent pyogenic infection.

There are two varieties: (1) In which the subcutaneous fibrous tissues and the ligaments are involved; and (2) in which the periosteum and bone are specially affected.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION		
Alabama*	W. H. Sanders, Montgomery	Montgomery	May	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July	1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July	9
California	Chas. L. Tisdale, Alameda	San Francisco	April	16
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	9
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W. C. Woodward, Washington	Washington	July	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E. R. Anthony, Griffin	Atlanta / Augusta	April / May	30 / 2
Idaho	I. L. Conant, Jr., Genesee	Boise	October	1
Illinois	J. A. Egan, Springfield	Chicago	April	17
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	—
Kansas	T. E. Raines, Concordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	April	23
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Augusta	July	9
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	W. S. Fullerton, St. Paul	St. Paul	June	4
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	St. Louis / Kansas City	April	16
Montana*	Wm. C. Riddell, Helena	Helena	October	1
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May	6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May	21
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	June	—
Oregon*	B. E. Miller, Portland	Portland	May	8
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia, Pittsburg,	June	—
Rhode Island	G. T. Swarts, Providence	Providence	July	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T. Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	7
Vermont	W. Scott Nay, Underhill	Burlington	July	9
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne		

*No reciprocity recognized by these States

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 6, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	386	211
Diphtheria	319	38
Measles	415	21
Scarlet Fever	392	16
Smallpox	4	—
Varicella	73	—
Typhoid Fever	92	18
Whooping Cough	74	12
Cerebrospinal Meningitis	18	10
Malarial Fever	.	.
Totals	1773	326

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 5, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS
California, San Francisco	Mar. 16–23	2	..
Florida, Duval Co., Jacksonville	Mar. 23–30	1	.
Hillsboro County	Mar. 23–30	6	.
Polk County	Mar. 23–30	4	.
Suwanee County	Mar. 23–30	1	..
Georgia, Augusta	Mar. 26–Apr. 2	0	..
Illinois, Chicago	Mar. 23–30	2	.
Galesburg	Mar. 23–30	3	.
Indiana, Indianapolis	Mar. 24–31	3	..
Marion	Mar. 1–31	11	.
Iowa, Clinton	Mar. 16–23	2	.
Kansas, Kansas City	Mar. 23–30	1	.
Louisiana, New Orleans	Mar. 23–30	15	1
Massachusetts, Boston	Mar. 23–30	1	..
Michigan, Detroit	Mar. 2–9	11	..
Mississippi, Gulfport	Mar. 18–25	1	1 imported
Missouri, St. Joseph	Mar. 2–9	23	1
St. Louis	Mar. 23–30	2	..
New Jersey, Hoboken	Mar. 23–30	1	..
Newark	Mar. 23–30	2	..
North Carolina, Charlotte	Mar. 23–30	1	..
Ohio, Cleveland	Mar. 22–29	1	..
Texas, Houston	Feb. 3–Mar. 30	76	..
Washington, Seattle	Mar. 17–24	1	.
Spokane	Mar. 16–23	18	..

SMALLPOX—FOREIGN.

Canada, N. S., Colchester County	Mar. 25	.	Present
Pictou County	Mar. 25	..	Present
B. C., Vancouver	Mar. 16–23	1	.
Manitoba, Winnipeg	Mar. 16–23	1	..
China, Hongkong	Feb. 2–16	27	26
Shanghai	Feb. 9–23	..	5
Ecuador, Guayaquil	Mar. 2–16	..	8
France, Dunkirk	Feb. 6–Mar. 8	12	5 imported
Marseille	Mar. 6–13	Still present	
Paris	Mar. 9–16	12	2
Germany, Bremen	Mar. 9–16	3	..
Metz	Mar. 3–16	33	..
Great Britain, Manchester	Mar. 9–16	2	..
India, Bombay	Feb. 27–Mar. 5	..	3
Calcutta	Feb. 16–23	..	48
Madras	Feb. 23–Mar. 1	..	1
Italy, Turin	Mar. 2–9	1	.
Mexico, Aguas Calientes	Mar. 16–23	..	3
Mexico	Feb. 16–Mar. 2	..	20
Portugal, Lisbon	Mar. 9–16	12	.
Russia, Odessa	Mar. 2–9	32	6
Riga	Mar. 9–16	6	.
St. Petersburg	Feb. 23–Mar. 9	3	3
Warsaw	Feb. 9–16	.	4

YELLOW FEVER.

Africa, Dahomey, Grand Popo	Jan. 15	..	Present
Brazil, Para	Mar. 2–9	4	2
Ecuador, Guayaquil	Mar. 2–16	..	21
Mexico, Vera Cruz, Tampico, Progreso	Mar. 2–9	1	1

CHOLERA.

India, Calcutta	Feb. 16–23	..	42
Madras	Mar. 1	..	3
Rangoon	Feb. 16–23	..	4

PLAGUE.

Hawaii, Honolulu	Mar. 2–9	..	1

PLAGUE—FOREIGN.

China, Hongkong	Feb. 9–16	1	1
Yuchwang	Feb. 9	2	..
Egypt, Assiout Province	Mar. 1–7	10	7
Girgeh Province	Mar. 1–7	46	31
Ismailia	Mar. 4	1	1
Keneh Province	Mar. 2–7	23	16
India, General	Feb. 16–23	2),253	2,,242
Bombay	Feb. 27–Mar. 5	..	306
Calcutta	Feb. 16–23	..	27
Rangoon	Feb. 16–23	..	55

Medical Record

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Original Articles.

THE REFRACTION-CHANGES DEPENDENT UPON GLYCOSURIA.*

BY GEORGE M. GOULD, M.D.,

PHILADELPHIA.

THE majority of oculists have long but vaguely known that glycosuria produces changes in the refraction of the healthy eye, but no one seems to have gathered the facts to a focus or gleaned the lessons derivable from their study. When a perfect illustration of the condition came into my practice I was therefore astonished to find that the few reports of cases observed in the past were mostly badly reported, a portion probably incorrectly reported, and a series of eight absolutely irreconcilable with another series of eight. Moreover, the theories as to the mechanism of the refraction-changes were as numerous as vague, and as irreconcilable as the reports of the cases themselves. As I tried harder and harder, in my first studies of these cases and theories, to understand them and resolve the mysteries, I found myself always deeper in doubt and amazement. But when I faced a final charting of the cases, the problem seemed to me to be suddenly resolved. The report of my case is as follows:

Gould's Case.† Dr. M., a busy physician carrying on a large practice, had for many years been a patient of mine, and by frequently repeated examinations I had kept close watch of his refraction-errors, because the least eyestrain in so severe a worker and student meant a vast deal for him. I may add that this patient also took a great deal of personal interest in the eyestrain problem, and had learned by bitter experience, subjective and objective, that certain theories as to the ocular origin of much systemic disease were true. He was, therefore, admirably fitted to help me correlate the facts to be described. Another condition to be noted is that the patient is now 58 years of age and myopic, so that the chance of error from incorrectly diagnosticated accommodation is quite out of the count.

In December, 1902, Dr. M. had been wearing

R. −Sph. 2.62 −Cyl. 0.75 ax. 35° = 20/20+
L. −Sph. 2.62 −Cyl 1.25 ax. 167° = 20/20+
B. E. −Sph. 0.87 and Cyls. for near work, in bifocals.

This error of refraction, although frequently tested had not materially changed for many years. On the 18th of the month my patient appeared with clearly marked symptoms of eyestrain. I found a sudden increase of myopia, measured by

R. −Sph 3.25 −Cyl. 0.75 ax. 25° = 20/20+
L. −Sph. 3.25 −Cyl. 1.50 ax. 166° = 20/20+
B. E. −Sph. 1.12 and cylinders for near.

There was also a noteworthy limitation of the range of accommodation. This increase of myopia in a man of 53, in one apparently healthy, although explainable, perhaps, in other ways, aroused my suspicions. Rigid questioning brought out the confession of several symptoms, which made me urge careful urine analysis. Quickly came the answer: "The urine is loaded with sugar."

The strictest dieting was immediately carried out, and within a few days every trace of sugar was eliminated from the urine. But then, as promptly, there was again eyestrain. A reexamination of the refraction showed that the errors had returned almost exactly to the point of seven days before.

In the next four years the total of the myopic corrections increased slowly and more in the last year, when Dr. M.'s health began to show some instability. I warned in vain. The sequel proved that he had simply grown more careless as to his food, eating sweets and starches with thoughtless indifference. In December, 1906, the errors were demonstrated to be

R. −Sph. 2.87 −Cyl. 0.87 ax. 25° = 20/20+
L. −Sph. 3.00 −Cyl. 1.50 ax. 172° = 20/20+
B. E −Sph. 0.50 and cylinders for near.

By February 18, 1907, symptoms of ill-health began to grow manifest, even to the careless-of-self mind of the patient, and he resumed the long-neglected analyses of the urine. The first one showed again an extremely high percentage of sugar. He was also having eyestrain, ignored for the time being, in his interest in other things. Of course the rigid diet was again put into force, and in two or three days not a sign of glycosuria could be detected. Then the patient returned to me with greater eyestrain than ever, and again there was the astonishing reduction in myopia measured by

R. −Sph. 2.00 −Cyl. 0.62 ax. 20° = 20/20 + } Distance
L. −Sph. 1.87 −Cyl. 1.37 ax. 170° = 20/20+ }
R. Cyl. alone } Near
L. +Sph. 0.12 and cylinder }

These corrections brought perfect visual acuity for distance and near, absence of all eyestrain, and the ocular conditions, with unessential changes, will probably remain the same so long as there is no glycosuria.

Grimsdale's Case,[1] of a woman aged 45, who came October 7, 1897, wearing for some years, for near vision,

R. +Sph. 1.00 +Cyl. 0.75 ax. 160°
L. +Sph. 1.75

Fourteen days previously the woman had noticed that her refraction had suddenly changed, so that her reading glasses were no longer needed, and distant objects were not seen so clearly as formerly. Vision, natural, was 6/60 in each eye. Without mydriasis the errors were estimated as follows:

R. −Sph. 2.00 −Cyl. 0.50 ax. 180° = 20/20
L. −Sph. 2.00 = 20/20

With this correction the patient at once said, "That is how I used to see." No mydriatic was used, nor was the range of accommodation tested. The right lens had scattered central opacities, the left was clear. At this time there were 26 grains to the ounce of sugar in the urine. Treatment was now instituted, and in ten days the report of the oculist was

R 6/18 −0.5 = 6/12, not improved by cylinder
L. 6/6 No Hm.

*Read before the Ophthalmic Section of the College of Physicians, Philadelphia, April 16, 1907.

†Hitherto unpublished report.

"She now required + Sph. 2.50 to enable her to read 0.3 Sn. at one foot." "She was on strict diet, and the total amount of sugar had much diminished." "The right lens presented considerable irregular astigmatism." In a few weeks death occurred following diabetic coma.

De Schweinitz's Second Case was that of a girl 20 years old, with no organic lesions except congenital posterior capsular opacity in each eye. Under cycloplegia the errors were determined

R. + Sph. 0.25 − Cyl. 0.75 ax. 135° = 6/10
L. − Cyl. 0.62 ax. 15° = 6/7 ½

Six months later the patient returned, complaining of rapidly deteriorating vision following some prolonged illness. It was learned that diabetic symptoms came on shortly after the first visit, and that large quantities of sugar had continued in the urine ever since, despite treatment. No mydriatic was now used, one judges, but a myopia of 3.00 D. in the right eye, and 2.00 D. in the left was demonstrated, with vision of 6/22 and 6/12 respectively. Systemic treatment was continued, and in three months the visual acuteness was holding its own. But edematous choroid and vitreous opacities had now become manifest. In another month the myopia of the right remained the same, but that of the left eye had become 5. The patient died not long after this. Dr. de Schweinitz concludes that a diffuse edematous affection of the choroid is the underlying pathological process in such cases.

Appenzeller's Case (Graefe-Saemisch) was of a patient 43 years old, who had 1.00 D. myopia while the glycosuria existed, but when under treatment the urine was normal emmetropia again returned.

Hirschberg's Case.[2]—Hirschberg gives a brief résumé of the case of a man 48 years old, who had for many years seen plainly with — Sph. 9", *i.e.* — Sph. 4.62 D., but who now complained of dimness of vision. With his old lenses he could not read any longer. There was no paralysis of the accommodation. The proper correcting lenses were now found to be — 8" Sph., — Cyl. 40" ax. 180°. Diabetes had been present for 14 days, followed by some (doubtful) loss of weight. The eye-grounds were normal. The urine contained 6¼ per cent. of sugar.

Dujardin's Case[3] was of a woman 69 years of age, applying April, 1899. There was high glycosuria, and despite treatment the percentage of sugar remained between 70 and 80 grams per liter. The media were clear and the eyes healthy. She could no longer see well at a distance, although formerly she had had sharp acuteness. For reading she had required + Sph. 4. D., but could not now read with these lenses. The pupils would not widen under atropin. By retinoscopy about 5. D. of myopia was made out. Homatropin was ordered as a collyrium and belladonna given internally on the theory that a spasmodic condition of the ciliary muscle existed. A month later conditions remained the same.

Risley's First Case.[4]—A woman of 49, having had glycosuria in the past, complained that, with the suppression of the glycosuria, and consequent improvement in general health, her vision had grown rapidly worse. She was wearing + Sph. 2.75. The dimmed vision had been observed only within a few days. Under mydriasis the errors were

R. + Sph. 5.00 + Cyl. 1.25 ax. 75° = 20/20
L. + Sph. 6.00 + Cyl. 0.75 ax. 105° = 20/20

In ten days glycosuria returned, and with it dimness of vision again, and the correction (nonmydriatic, one gathers) was

R. + Sph 3.00 + Cyl. 1.25 ax. 75° = 20/20
L. + Sph 3.50 + Cyl. 0.75 ax. 105° = 20/20

Fifteen days after this she chose (nonmydriatic, probably)

R. + Sph. 1.25 + Cyl. 1.25 ax. 75° = 20/20
L. + Sph 1.50 + Cyl. 0.75 ax. 105° = 20/20

Risley's Second Case.[4]—A man, 74, suffering from saccharin diabetes for at least six years, was the subject. In August, 1896, the errors were

R. + Sph. 1.50 + Cyl. 1.25 ax. 180° = 6/7 1/2
L. + Sph. 1.25 + Cyl. 1.25 ax. 180° = 6/10

The lenses were cataractous. In April, 1897, the vision in each eye remained the same, presumably, with the same errors of refraction. Fourteen days later dimness of vision was complained of, and the visual acuteness with his distance-glasses was with each eye 6/30. No sugar, or but a trace, was present, and the man now selected

R. + Sph. 2.50 + Cyl. 1.25 ax. 180° = 6/7 1/2
L. + Sph. 2.00 + Cyl. 1.25 ax. 180° = 6/10

Within three days of a month later the patient had been compelled to return to his old glasses within a few days, and he now chose this correction, the first above given, with almost the same visual acuteness. Sugar was again found—4.20 per cent., and a specific gravity of the urine of 1,027.

*Carpenter's Case** was of a woman, 51 years old; consultation was for dimness in reading during last six months. There was no local ocular disease. Refraction (without a mydriatic) was diagnosed

R. − Sph. 0.25 − Cyl. 0.50 ax. 90° = 20/20
L. − Cyl. 0.50 ax. 90° = 20/20
+ Sph. 1.75 added for reading. Reading glasses only ordered.

Six years later the patient returned, stating that her reading glasses had proved comfortable until within a few weeks. Her correction was now found to be

R + Sph. 1.50 = 20/20 } Distance
L + Sph. 2.50 = 20/20 } Distance
With + Sph. 2.25 added for reading } Bifocals ordered.

Four weeks before this last visit glycosuria had been diagnosed by her physician, and treatment begun, with great decrease of the percentage of sugar. Still no local disease of the eyes was found. In three weeks she returned to her original careless diet (rich food, sugar, etc.), and convex lenses made vision worse, but R. — Sph. 0.75, L. — Sph. 0.50 again brought the distant acuteness to normal.

De Schweinitz's First Case[5] was of a patient, a man of 47. The man had fairly healthy eyes, but the report does not state whether the first refraction was made under cycloplegia, or not. "Each eye was hyperopic, + 1.25 D. The complaint was of failing vision in presbyopia. One gathers that glasses were ordered for presbyopia only. Four years later the complaint was of dimness of vision for distance, "scarcely one-half" what it had been four years previously, *i.e.* normal, and — Sph. 0.50 was now required to give normal acuteness. Glycosuria was suspected and demonstrated. By June 14, 1895 (a month later) sugar had been extinguished. Although the static refraction does not seem to have been determined—a matter of regret—the inference is that the change of refraction from + Sph. 1.25 to — Sph. 0.50 was due to the glycosuria. As there was no decided lesion to be discovered by the ophthalmoscope, etc., the inference seems justified, and another case of displacement of the focus forward is to be added to the list.

Neuberger's First Case.[6]—A 50-year-old woman who had been emmetropic and able to read the finest print with + Sph. 2.00, came four months later, reduced in flesh and with a myopia of R. 1.5 D., L. 2.00 D. Smallest print could now be read with + Sph. 1.5 D, and L. + 1.00 D. Weakness of the accommodation was also present. The lenses were,

*Not published. MS. report kindly loaned by Dr. Carpenter of Philadelphia.

and remained clear. The urine contained 3.5 per cent. of sugar. In about three weeks emmetropia returned and + Sph. 2.5 D. was required to read fine print. The myopia had thus disappeared, *although at this time the glycosuria had increased to 7 per cent.* Diabetic retinitis later appeared, but the lenses continued clear and the refraction emmetropic.

Neuberger's Second Case[6] was of a woman of 48, who two years before had a hyperopia of 0.75 (+ 1.5 for near), but now was myopic, R. 1., L. 2.5 D., and no glass for reading. The lenses were clear at first, but later became obscure. Six months later the myopia was R. 3.00, L. 8.00 D., with cataract progressing.

Alexander's Case.[7]—The patient was a man of 57 years of age, who had felt a decrease of visual acuteness for distance during the last 14 days. A myopia of 1.00 was diagnosed. For near + Sph. 0.75 was sufficient when 1.75 was before demanded. The sugar was 5.7 per cent. In 8 days dieting brought the urine to normality, emmetropia returned, but this in 5 days changed to a hyperopia of 1.75 D., the urine continuing free from sugar. In epitomizing this history Groenouw* rightly says the original refraction was probably hyperopia, which later became manifest.

*Groenouw's Case.**[8]—A woman of 55, suffering from diabetes, suddenly acquired a myopia of 1. D., which in 3 weeks became emmetropia. The lenses were clear. This is given by Groenouw as a case of latent hyperopia becoming manifest.

Doyne's Case† was of a physician of 40 who consulted the oculist for failing sight. The man was suffering from acute diabetes. Three diopters of hyperopia were found, and this correction was ordered and the glasses were worn without discomfort. Practice was discontinued and a sea voyage undertaken, but upon his return he complained of dimness of vision for distance. The hyperopia had lessened and + Sph. 2.50 each eye again gave normal vision. Soon afterwards dimness of distant objects again recurred and the strength of the glasses had again to be reduced, "and later on, when the sugar disappeared, under homatropin freely used, only 0.75 of hypermetropia existed."

Horner's Case[9] was of a woman of 55. The hyperopia had rapidly increased; it was 1/14" at the time of the visit, but with improvement in the general health it sank to 1/48".

Cohn's Case (Graefe-Saemisch) was one of increase of the hyperopia in a 68-year-old woman, from 1.50 to 3.00 D.

Landolt's Case.[10]—"We have observed, among others, a most interesting case of this kind. A lady had a fall and became diabetic as a consequence of this traumatism, although her general condition was not much affected by it. At the same time she commenced to no longer see well at a distance, and found the spectacles, that she had previously worn on account of her presbyopia, to be insufficient. The refraction could be determined, in this case, with the utmost accuracy, not only because the patient was very intelligent, but because she had reached an age at which the accommodation is almost *nil*. I made out a hyperopia of 0.5 D., which certainly had not previously existed. It increased and then diminished, according to the amount of sugar excreted, and finally disappeared entirely. So that, when this traumatic diabetes was cured, the patient could dispense with her distance-spectacles, and substitute, when reading, her former spectacles for the stronger glasses which she had been obliged to resort to. I have seen the patient for several years, and it has been extremely interesting to note that each little recurrence of diabetes has announced itself at once by a diminution of refraction, to such a point that the curve of hyperopia was, so to say, parallel with that of the quantity of sugar eliminated with the urine."

Gallus' Case.[11]—A man aged 51, under treatment for diabetes for two weeks, noticed impairment of vision for distance. Sph. + 2.00 for reading had become too weak, although he "could see well through them into distance." Examination revealed R. + Sph. 1.50 + Cyl. 0.50 ax. 180° = (What?) L. + Sph. 2.00 + Cyl. 0.50 ax. 180° = (What?) With + 2. added he could read the smallest type. Under treatment glycosuria ceased, and in two months the hyperopia had subsided so that the patient needed only cylinders and could read again with + Sph. 2.00 + Cy. 0.50.

Lichtenstein's Case[12] occurred in a man seventeen years old. The refraction is given as + Sph. 1.50, estimated without a mydriatic, but 12. D. + Sph. lenses were required to enable the patient to read from print at 9 cm. The paralysis of the accommodation is said to have been "complete." He had suffered from no diseases (except glycosuria) which would cause this paralysis. Despite treatment his glycosuria had increased in severity, and urinalysis now showed 4.5 per cent. of sugar present, and some six liters of urine were voided daily. The patient was sent to a colleague, and the next day the hyperopia was found to be 2.5 D., with 13 D. lenses required for near. Homatropin now showed the same 2.5 D. of hyperopia. Five days later it was 3.5 D., demonstrated by atropinization and skiascopy. For 14 days the conditions remained the same, but the young man felt better. Now 3.5 D. was required for distance, but only 11 D. for near. But this was soon reduced to 6 D., and in about two weeks from the first visit it had fallen to 5 D. The hyperopia gradually fell from 3 D. to 2.5 D., then to 2 D., and finally to 1.5 D., the point whence it started on March 8, 1906. Lichtenstein says the doubt as to the latency of hyperopia was excluded by his atropinization. L. explains that in this case two factors united to produce the result, paralysis of the accommodation, and transitory hyperopia. He explains this as due to loss of water by the contents of the globe and a resultant shortening of the anteroposterior axis.

Sourdille's Case.—In an emmetropic woman, 53 years old, S. observed a hyperopia of 2.00 D. occur, which again disappeared with the disappearance of sugar.

Lundsgaard's Case.[13]—The patient was a woman, who in 1892 was found to have + Sph. 0.50; "the ophthalmoscope showed emmetropia." In the summer of 1905 there was great thirst and polyuria, but according to the general physician no sugar or albumin existed in the urine. In 1906 traces of sugar appeared, and in a month the percentage was 7¾. Dieting reduced the sugar somewhat, but sudden dimness of vision called attention to the eyes when a hyperopia of 2.50 and 2.00 was found. The media were clear. Accommodation accorded with the age. The percentage of sugar was now reduced but not extinguished, and the hyperopia fell; finally the sugar was eliminated entirely and on the 19th of November, 1906, the hyperopia returned to the figure of 1902.

These twenty-two cases are not all those which, by more rigid search or less rigid rules of exclu-

*Reported in the discussion of Mr. Grimsdale's case.[1]

†Augenleiden bei Diabetes Mellitus, Groenouw, 1907, p. 46.

sion, might possibly be included as data.* If we arrange them in three series we find the first, composed of those in which myopia is increased by glycosuria (or decreased by its extinction) is made up of six—those of Gould, Grimsdale, de Schweinitz's Second, Appenzeller, Hirschberg, Dujardin.

The second series, those in which hyperopia is decreased by glycosuria (or increased by a return to normality) is made up of eight—those of Risley's Two, Carpenter, de Schweinitz's First, Neuberger's Two, Alexander, and Groenouw.

The third series, those in which hyperopia is reported as increased by glycosuria, is composed of eight—Doyne, Horner, Cohn, Landolt, Gallus, Lichtenstein, Sourdille, Lundsgaard.

Principles Governing the Determination of the Refractive Conditions.—It is of first importance that in the report of a case the precedent static refraction must be the basis of any comparison. In all persons under 60 years of age, except occasionally in myopia, the accommodation, unless paralyzed, would make a possible error rendering all comparisons inaccurate, and if under 50 years almost wholly untrustworthy. The reports of glycosuric refraction change in hyperopes under 50, unless the diagnostic tests have each been made under cycloplegia, are of little value, except that the physician believed and reported his belief that the presence or absence of sugar in a general way indicated certain refraction changes. If the presbyope is highly myopic that gives an added element of accuracy. Still greater precision is to be predicated in cases in which previous accurate refractions have been made frequently and over a long period of years. The astigmatic error, once correctly determined, may be discarded in speaking subsequently of the cases because this changes but slightly in cases of paralyzed accommodation, so that the statement of the relative myopia and hyperopia is practically all that is necessary. In no case so far reported has there been any exact mathematical relationship stated between the varying amounts of the sugar and the degrees of the resultant refraction-change. This valuable aid must therefore be left out of the count. In the reports of future cases it should be made out and reported upon. The absence of local ocular disease that would obscure the nature of the refraction changes must also be insured. When glycosuria has set up extensive choroidoretinitis, pronounced cataract, etc., a new factor is added which may be the cause of so much doubt that the report is made suspicious. The tests, to be of the best value, must be in cases with acute glycosuria, in which the eyes are so far healthy, the media sufficiently clear, the funduses so nearly normal, the acuteness of vision so good, etc., that the measure of refraction is not in doubt. The shorter the period of time between the tests of the glycosuric and the nonglycosuric refraction the more valuable will be the data obtained, and the more convincing the deductions made from them. Lastly, the oculist must be a refractionist, believing in the value of accurate refraction tests, habituated to make them, and seriously aware of the evil results of bad and slipshod refraction to eye and general system. There is little or no possibility of securing a trustworthy estimate of the refraction in all Europe, where the refraction is pronounced alike in both eyes, astigmatism ignored, etc., and whenever a report comes to us wherein the refraction has been estimated with the ophthalmoscope, and bearing ludicrous internal evidences of bungling, and contradicting the reports of careful and keen-witted refractionists, there may be no delay in speedily setting it aside as worthless, or of little scientific value.

Exclusion of reports according to the foregoing principles becomes easier when we notice that there is no reported case of myopia in which glycosuria has not had the effect of increasing the myopia—that is, of bringing the focus of the dioptric system forward. All such cases are logical, one may say, as naturally the effect of glycosuria must be to affect the focus in that way. Whatever be the mechanism intermediating the change it is impossible to comprehend how glycosuria can displace the focus posteriorly. Now, as the myopia of an eye is far more easily and accurately measured than the hyperopia, and without a cycloplegic, it is not surprising that all observers, good or bad, unite, in their reports, that glycosuria, if it changes the refraction at all, increases the preexisting myopia.

Confirming this result we find that the reports of eight cases of change in hyperopia also say that the effect of glycosuria is to advance the focus exactly as happens in myopia. And in this series occur the names of such trustworthy refractionists as Risley, Carpenter, de Schweinitz, etc.

It is simply inconceivable that the mere accidents of the location of the retina in the path of the refracted cone of light-rays should have the reverse effect in displacing the focus in hyperopia, from what it does in myopia. Therefore when eight reporters find such an illogical if not impossible reversal of the natural consequences as testified to by fourteen, it behooves us to doubt the accuracy of the oculists' tests and reports rather than to indulge a belief in the inherently improbable and impossible. Let us briefly glance at the cases critically of those reporting increase of hyperopia:

In Doyle's case, the patient was 40, no mydriatic was used at first and as the only true basis of comparison, and the squint of the corner of the mouth becomes visible when it is said that three diopters of hyperopia were found! The case was pretty plainly one of latent hyperopia, astigmatism, etc., becoming manifest "later on," because of the frequent effect of glycosuria on the accommodation, or because of advancing presbyopia. It should therefore be set aside. No wonder that Mr. Doyle had no explanation to offer.

Graefe and Saemisch explain Horner's case and that of Cohn as due to latent hyperopia. Schmidt-Rimpler, and Groenouw also explain similar cases in this way.

In Landolt's case there is too much vagueness in the report and too little increase of the hyperopia—only 0.50 D.—to make us heed the claim of "utmost accuracy," made in behalf of the improbable.

The patient of Gallus was 51, the acuteness of vision was not noted, no mydriatic was used, etc. The change was probably in the accommodation, not in the (untested) static refraction.

Of Lichtenstein's case one doesn't know what to say, except that the inherent absurdity of 2.5 D. hyperopia with 13. D. required for near vision is so great as to make us smile with incredulity. Then it must not be forgotten that atropin in Dujardin's case did not even widen the pupil. Until competent refractionists report other cases similar to this one it must remain as a single and anomalous empiric fact in which other factors than glycosuria were present. This is the only case reported of one so young as 17 years, a fact to be remembered.

Sourdille's case was in a patient 53 years of age, and no mydriatic was used. *Exit!*

In Lundsgaard's case, "the ophthalmoscope

*Kako's case of developing + astigmatism, *e.g.* is omitted for evident reasons.

showed emmetropia," and with that admission "the defence may rest its case." (In speaking of his own case Schmidt-Rimpler (*Die Erkrankungen des Auges, etc.*, Wien, 1905), says, "the upright image demonstrated a hyperopia of 0.5 D.," so that case may also go to the Jury forthwith.)

We may therefore feel no compunctions in excluding on the ground of erroneous diagnosis due to failure to estimate correctly the static refraction almost all of the cases so far reported in which it is claimed that glycosuria removes the focus of the dioptric system to a position posterior to that occupied in the previous nonglycosuric period.

It would require an entire paper and a long one, to enumerate and critically judge of the theories advanced to explain the modus operandi of the effect of glycosuria upon the refraction. I doubt if the most capable mind could do much toward clarifying the obscure subject. I had made a list of these numerous theories, but I do not think it would be edifying to read it. The arguments point toward a consensus of opinion favoring increased density of the ocular fluids, functional disturbances and paralysis of the lens and ciliary muscle, etc., rather than to changes in the corneal curves, changes in volume of the contents of the globe, or displacement of the macular region of the retina.

As to the significance of the phenomenon, everybody has emphasized the importance of the recognition of the refraction and accommodation changes as warnings of the existence of the systemic disease. In the days of life insurance examinations, of routine urinalyses by the general practitioner in almost all cases of ill-health, of the striking evidences to the patient of thirst, polyuria, etc., the warnings seem somewhat antiquarian, at least not of the first importance. The wideawake American oculist would prefer to doubly emphasize the overlooked truths: (1) That the eyestrain preceding the glycosuric refraction-change may have been a prime factor in producing the functional dietetic and nutritional disease called glycosuria; most significant is the fact that the great majority of the cases occur during the presbyopic period; (2) that the secondary refraction-change serves as a perfect illustration of the increase of the diseases due to overstrain by the proverbial vicious circle, increasing the irritation and nutritional abnormalism by the secondarily induced refractional changes caused by the glycosuria: (3) the necessity of preventing quick-following ocular disease, both functional and organic, by heeding the accurate warnings given by the refraction changes consequent upon early and curable glycosuria. But whatever the point of view, and whatever the injuries done or threatened, the accurate diagnosis of the static refraction overtops and conditions every measure of prevention and every step of progress either in science or in therapeutics.

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SOME UNUSUAL RESULTS OF INTRATHORACIC COMPRESSION.

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Collateral venous circulations of unusual extent, following compression and thrombosis of the superior vena cava and of the left innominate vein respectively, and an uncommon physical sign of bronchial compression, are the points of interest about the three cases here reported.

Case I.—The first case is one of gradual narrowing and obliteration of the superior vena cava by probably a mass of sclerosed and caseous bronchial glands.

The patient, male, white, sixty-two years old, a watchman, of Irish nativity, was first seen in March, 1906. He had had measles, whooping cough, and gonorrhea. About twenty years ago he had noticed a swelling of the superficial abdominal veins. The onset was apparently gradual, and there was no history of thrombosis or phlebitis of the veins of the face, neck, or arms. Since July, 1905, he had suffered from cough, mucopurulent expectoration, hoarseness, and loss of weight.

He was an emaciated old man, pallid and dyspneic. All of his superficial arteries were sclerosed. There were slight varicosities of the veins of both legs. The anterior portion of the chest, the front and sides of the abdomen, and the left lumbar region showed extraordinarily large and tortuous veins, of which the superior and inferior epigastric were the most prominent. The blood current in these veins was downward. His lungs showed consolidation of the upper right lobe and infiltration of the remainder of that lung and of the upper left lobe. The heart was slightly enlarged, intermitted occasionally, and showed an accentuated aortic second sound and no murmurs. His sputum contained numerous tubercle bacilli.

The fluoroscope showed, in addition to the lung lesions, a shadow about 4 c.c. in diameter, just at the right of the heart shadow, and a chain of enlarged bronchial glands at the left. The shadow did not pulsate and was taken to be a mass of sclerosed bronchial glands. The enlargement of the abdominal veins is shown in the illustration.

The size of the veins involved in the collateral circulation and the downward current of blood therein, led us to make a diagnosis of obstruction in the superior vena cava. This history of a slow onset, and the absence of any history of sudden edema and cyanosis of the arms or face, enabled us to exclude a thrombosis of the cervical or arm veins, which sometimes precedes a thrombosis of the cava superior, and made probable a gradually increasing compression as the cause of the obstruction. This cause would permit the gradual and uneventful establishment of a collateral circulation which ensued in our case. The identification by the fluoroscope of what was probably a mass of sclerosed and caseous glands just to the right of the heart, at the site of the superior cava, revealed the compressing factor.

Osler has reported three cases of obliteration of the superior vena cava,[1] together with a very com-

plete summary of cases found in the literature up to 1903. Eppinger[2] reports a case in which the autopsy showed the superior cava changed into a thick fibrous cord, surrounded by degenerated bronchial glands. Schrotter[3] also reports a case of marked narrowing of this vein by a group of sclerosed and caseous bronchial glands in a tuberculous patient.

In cases of complete closure of the superior cava, the blood regurgitates from the obstruction, through the cava to the innominate vein, to the internal mammary, to the superior epigastric, to the superficial and the deep epigastric, to the iliac veins, and so to the inferior cava and the heart. Many other collateral circulations may be brought into play, depending somewhat on the site of the obstruction—whether above or below the opening of the azygos vein into the superior cava. If below, the blood passes from the superior cava through the azygos vein, to the lumbar and renal veins and thence to the inferior cava. The enlargement of one of the

left lumbar veins in our case showed that the vena azygos was concerned in the collateral circulation and that therefore the obstruction was below the opening of that vein.

Rapid closure of a vein is attended by marked vascular disturbances, as edema, cyanosis, etc., and only after a period of time are these overcome by the formation of a collateral circulation. The gradual closure of the vein in our case prevented the appearance of any sudden circulatory incompetence.

Case II.—The second case exemplifies the effect of sudden venous obstruction. The patient was a mattress maker, thirty-three years old, who had never had any serious illness. He denied syphilis, but had always been a heavy drinker. On February 16, 1906, immediately after a paroxysm of coughing, he felt a "snap" near the left "collar bone." That afternoon the left shoulder felt sore, and the soreness gradually extended down to the left arm and left side of the chest. The next day he noticed swelling of the left side of the neck just above the clavicle, of the left side of the chest around the nipple, and of the left arm and forearm. The swelling and soreness have gradually increased. The pain is now (four days after the onset) most marked over the upper inner portion of the left arm.

The patient is an obese plethoric man, who is slightly dyspneic. The left side of the neck just above the clavicle is distinctly swollen and cyanosed. The upper left chest as far as the nipple, and the left shoulder, arm, and forearm are also swollen and cyanosed. The swelling does not pit on pressure. There are numerous small dilated veins on the left chest and shoulder. There are redness and tenderness along the lower portion of the left axillary vein. There is decided dullness over the manubrium and in the second left intercostal space next to the sternum. There is slight dullness over the upper left chest as far as the third rib in front and the spine of the scapula behind, and over this area the tactile fremitus, breath, and voice sounds are decreased; also over the left supraspinous fossa the expiration is distantly bronchial—all of which are evidences of compression of the left bronchus. The heart is negative. The left radial pulse is slightly smaller than the right. There is slight trachial tugging. The movements of the vocal cords are normal.

The fluoroscope shows a small pulsating shadow above the heart to the left of the sternum, and a diagnosis was made of aneurysm of the transverse arch compressing the left brochus and the left innominate vein.

The edema and cyanosis disappeared a few weeks later. Ten months later the small veins on the chest and shoulder observed during the first visit showed a marked increase in size and number. The blood current in these large veins was downward. The fluoroscope showed that the aneurysm had increased markedly in size, the shadow extending almost 8 cm. to the right of the sternum. There were no evidences of bronchial compression.

In this case the aneurysm first produced a narrowing, but no complete obstruction of the left innominate vein. Following this narrowing numerous small varicose veins developed on the chest and shoulder and were observed at the time of his first visit. These may be regarded as evidence of the beginning collateral circulation, and had probably been present a long time. Then a thrombosis of the innominate vein suddenly supervened, as was evidenced by the sudden venous congestion of the arm, chest, and neck. That the thrombosis completely closed the vein is shown by the present extensive collateral circulation.

The non-pitting character of the edema in these cases is to be explained by a greater involvement of the subfascicular rather than the subcuticular veins.

The compression of the left bronchus showed the usual physical signs of bronchial stenosis and will be contrasted with some unusual signs of this condition observed in our third case.

Case III.—This patient was a driver, twenty-nine years old, of American birth. His family history was negative and he had had no infectious diseases. When seventeen years old he had had a chancre, but no secondary symptoms. He had smoked and used whiskey to excess for years. In August, 1905, he began to suffer from a "croupy cough," with scanty expectoration, and at times slight pain under the sternum. He also had noticed some shortness of breath on exertion and some cardiac palpitation, which have continued. On November 15, 1905, his physical examination was as follows: A well-nourished, muscular young man, somewhat dyspneic, with a frequent, harsh, brassy cough. His heart was of normal size, with rapid and regular action,

and showed no murmurs. His pulse was 132 to the minute, regular, of fair tension, and corresponded in the two radials. The respirations were 32 per minute, and the lungs, of normal size, showed everywhere many sibilant râles.

On November 22, 1905, the patient was seen again. He was dyspneic, and examination of the lungs showed a remarkable condition. The left lung moved very slightly with respiration, transmitted a very feeble fremitus over the upper lobe, gave a markedly hyperresonant note, and was much increased in size, entirely obscuring the heart dullness. Breathing over the left apex, anterior, was heard *only* during the latter half of inspiration and then it sounded as if air were rushing through a narrowed bronchus. Posteriorly the breath and voice sounds were almost absent. There was no tracheal tugging. The larynx was not examined.

Excepting the peculiar character of inspiration over the left apex in front, the physical signs were those of marked emphysema of the left lung. While we suspected an aneurysm pressing on the left bronchus, these physical signs were most puzzling.

He was sent up to the hospital ward where he died ten days later from profuse hemoptysis, losing about a liter of bright red blood. Shortly after admission the peculiar physical signs over the left lung disappeared and evidences were found of an aneurysm of the transverse arch presenting at and to the right of the manubrium sterni. Unfortunately, no radiograph was taken, nor was an autopsy secured. The diagnosis was made of an aneurysm of the transverse arch which had compressed the left bronchus and trachea, producing the dyspnea and unusual physical signs.

The signs of compression of a bronchus, as given in the half-dozen books on diagnosis we have consulted, are dullness, feeble or absent tactile fremitus, and diminished or absent breath and voice sounds over the corresponding portion of lung. These signs were present in the preceding case, but this case showed a hyperresonant note and a marked increase in size of the lung, so we were obliged to conclude that other conditions than those ordinarily found in bronchial stenosis must have been present.

A hyperresonant or tympanitic note over an organ can be caused by an increase in the air content of the organ or by a relaxation of the enclosing walls, which latter produces a decrease in the tension of the contained air.[4] Relaxation of the alveolar walls as a result of the absorption of air from the lung tissue corresponding to a stenosed bronchus, might be evinced by a hyperresonant note, but in our case the lung was decidedly increased in size, so, following the above law, the air content of the affected lung must have been increased.

The explanation given by Hoffman[5] of the anatomical conditions in cases of bronchial stenosis seems very rational and explains why there is an increase in the air content of the corresponding lung, producing a localized emphysema. He says: "The *gradual narrowing* of a bronchus favors accumulation of air and increased pressure in the peripheral section of the corresponding lung, and as long as the condition remains comparatively aseptic, emphysema is the chief result. *Sudden closure* of a bronchus results in atelectasis, and if there is no infection, atrophy and cirrhosis of the corresponding lung tissue. In a gradual narrowing, the air, during inspiration, is sucked through the stenosed place, but the expiratory power is not sufficient to expel it, for the driving power during expiration is only the elasticity of the lung tissue lying below the stenosis. The great expiratory pressure, produced by the muscles of expiration, has, in this case, but little effect, for it can never act so uniformly from all sides, as does the elastic tug which draws air into the bronchus—it acts spasmodically and presses equally on all parts of the thorax. Also, any tough mucus present may act like a valve, permitting the air to enter easier than to escape."

The condition obtaining in bronchial asthma affords another illustration of Hoffman's explanation. Here we have a stenosis of the smaller bronchi due either to spasm or to turgescence of the mucous membrane, and very frequently an extensive emphysema.

Irvine[6] concludes as a result of his clinical and post-mortem experience that (1) emphysema follows compression of a bronchus; (2) bronchiectasis may be associated with this emphysema; (3) destructive pneumonia may further ensue; (4) collapse of the lung may occur early in the stage of compression. He reports four cases of aneurysmal compression of the left bronchus, and in but one of these were the physical signs suggestive of emphysema of the left lung. Autopsy showed that in two of these cases the left lung was enlarged and the seat of various infective processes, that in one case the left lung was partially collapsed and partially emphysematous, and that in one case the left lung was normal in size. The right lung in all of the four cases showed a compensatory emphysema.

One would judge from the statements of these authors that pulmonary emphysema, following bronchial stenosis, is a very frequent occurrence, and yet none of the leading English authorities on physical diagnosis mention it. The percussion note is uniformly described as normal or dull, but no reference is made to increase in size of the lung.

The probable explanation for this is that the conditions for rapid development of emphysema, namely that degree of stenosis which will permit of free ingress and but little egress of air, or the presence of a viscid, valve-acting secretion immediately below the stenosis, are rarely present. The emphysema generally develops slowly, and the concomitant infectious processes obscure the emphysematous signs. Nevertheless it should be borne in mind that localized pulmonary emphysema, although rarely seen, points to a bronchial stenosis.

These three cases were seen in the Second Medical Division of the Bellevue Hospital, Out-patient Department, and it is through the courtesy of Dr. N. R. Norton, Chief of the Dispensary, that I am enabled to report them.

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34 West Eighty-fourth Street.

The Bier Treatment.—Too prolonged or too rapid and vigorous use of the pump in the Bier apparatus will frequently cause a rupture of the superficial blood-vessels, and in many cases severe sloughing of the superficial parts ensues, the result of the treatment being worse than the primary cause of the trouble. Application of the Bier cup to an abscess for four to five minutes twice a day is more beneficial than a single ten-minute application.—*American Journal of Surgery.*

DERMATOLOGICAL TRANSITIONS.

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In the practice of medicine to-day, we are often prone to be too specific in our diagnoses, too apt sometimes to overlook the fact that there may be a gradual evolution of one process or disease into another—in short, a transition. In no branch of medicine probably, do we find these changes occurring so frequently, and with such marked emphasis, as in dermatology. Broadly speaking, there are two types of transitions encountered in the practice of cutaneous medicine: (1) The transitions of diseases; (2) the transitions of lesions. The former has two main subdivisions: False and True.

False Transitions.—Under false transitions we class certain conditions in which a new lesion or a new chain of symptoms has been added to or grafted upon a preexisting disease or lesion. Cases are reported from time to time where, for example, epithelioma has developed upon the site of an old chancre or gumma; lupus vulgaris has been followed by epithelioma; lupus erythematosus has assumed an epitheliomatous tendency in its later stages,* while cases of scabies, terminating in eczema, and initial lesion supervening upon herpes preputialis are of everyday occurrence.

Transitions due to Traumatism.—Many hold that most of these changes are to be classed in the category of "cause and effect." The pruritus of scabies, relieved by constant scratching, changes into eczema, in patients predisposed to this disease—the inflamed, thickened, weeping condition being due to the mechanical irritation.

Chronic eczema of the palms often changes into keratosis palmaris from a similar cause. The small warty papule, picked, scratched, or otherwise irritated, becomes epitheliomatous. Cases have been reported in which the primary lesion of syphilis has developed on the site of an old scabies lesion, or in which a herpes preputialis has been followed by a definite indurated chancre. The report of such a case may be of interest:

Case I.—Andrew L., age 28, born in United States. Seen first in April, 1905, with herpes preputialis, on dorsal surface of the foreskin. While under treatment the patient became exposed to syphilitic infection, and about three weeks later, a typical indurated chancre developed on the site of the treated herpes. This was followed in due time by general adenopathy and the secondary roseola. Here, then, we had the two conditions existing conjointly, the herpetic lesion being the avenue of entrance of the specific virus.

Psoriasis is particularly liable to have pseudo-transitions occurring in the natural course of the disease. The following case is a pertinent example:

Case II.—Rebecca H., age 20, native of Russia. In September, 1902, the patient was first admitted to clinic, suffering from an acute generalized psoriasis. The disease, under dispensary treatment, improved for a time, but in 1905 the condition seemed to come to a standstill, and the patient was admitted to the hospital. Here she has remained for two years, with intermittent outbreaks of the disease. Periods of quiescence, with apparent clearing up of the symptoms, would be followed by a very acute attack, during which hardly a square inch of the patient's body would be free from lesions. During one of these exacerbations, following the appearance of large hypertrophic plaques, almost verrucous in nature, the patient developed an acute exfoliative condition, which was most marked on the back. Papery scales, the size of a dime, were thrown off in abundance, leaving a shiny, red, florid surface, similar to that seen in pityriasis rubra. Under emollient treatment, small islands of normal skin appeared, the florid appearance became considerably lessened and finally cleared entirely, leaving only the generalized psoriasis.

Here, then, we had a change, occurring in the natural course of the disease, strongly simulating another condition, while the clinical manifestations of psoriasis continued as before. It could be termed a pityriasiform psoriasis, and may possibly have been caused by a too free or too strong application of chrysarobin.

Cases have been reported of pemphigus foliaceus, terminating in dermatitis exfoliativa; of ichthyosis hystrix changing into pityriasis rubra; of lichen planus developing into generalized exfoliative dermatitis. These changes were probably due to over-treatment. Too free use of mercury in lichen planus, chrysarobin in psoriasis, or sulphur in scabies will oftentimes produce lesions simulating pityriasis rubra very closely.

True Transitions.—Occasionally, however, we find cases in which true transitions have undoubtedly taken place. By the term "true transition" we mean a gradual evolution of one process or disease into another, without any clearly defined boundary line to indicate where one process begins and the other ends. This may be exemplified in a variety of conditions:

1. Eczema, pemphigus, or psoriasis changing into pityriasis rubra—the further evolution of this condition into mycosis fungoides.
2. The transition of eczema seborrhœicum into mycosis fungoides.
3. The change of urticaria, pruritus, or eczema into dermatitis herpetiformis.
4. Eczema of the nipple into Paget's disease.
5. Rosacea into rhinophyma.
6. Senile wart into epithelioma.
7. Specific glossitis or tubercular syphilide into carcinoma.
8. Transitory changes in xeroderma pigmentosa.
9. Transitory changes in Sailor's skin disease.
10. Transitory changes in kraurosis vulvæ.

These, then, are examples of true transitions. The eczema, psoriasis, urticaria, or rosacea continues for a time a more or less natural course. Then there supervenes a period of activity—the condition becomes more acute, and suddenly we realize that a new condition is thrusting itself upon us; that the original disease, although possibly still active, is being encroached upon, replaced and gradually eliminated by an entirely new condition, having an entirely new chain of symptoms, and differing from the former, both clinically and morphologically. This can possibly be exemplified by citing a few cases which came under my notice during my service at the New York Skin and Cancer Hospital.

The Change of Eczema into Pityriasis Rubra of Hebra.

Case III.—Anna D., age 60, born in Ireland. In September, 1903, the patient first had a mild attack of eczema, involving the back and extremities. This later became worse, rapidly spread, and soon involved the whole skin. The patient had chills, fever, delirium, etc., and "could not get on enough bedclothes, even on a hot summer's day." There were marked intermissions, and the patient occasionally became much improved. In May, 1905, she entered

*Two cases reported by Pringle.

the hospital. The skin was thickened, scaly, infiltrated, and reddened, and marked contractions around the eyes were evident. Sometimes quantities of serum would exude. Large quantities of penny-sized scales were scattered over everything if the patient remained in the same position for any appreciable time. The condition gradually became worse, until the patient died in November, 1905, of pulmonary edema. This case starting as a simple eczema, grew gradually worse. A new condition was evolved, having all the classical symptoms of pityriasis rubra, which led to a fatal termination.

Transitions into Mycosis Fungoides: Stages: Psoriasis (?), Eczema, Pityriasis Rubra, Mycosis Fungoides.

Case IV.—John H., age 45, native of Germany. In 1904 while in Germany the patient had psoriasis, the diagnosis being made by a reputable dermatologist in Hamburg. He came to America in 1905, and entered the hospital in March of the same year, suffering from a generalized eczema. This rapidly grew worse; the skin became thickened, infiltrated, and reddened, and two months later the patient manifested intense itching, chills, and fever—all the indications of an acute attack of pityriasis rubra. In May of the same year, tumors and ulcers appeared on the chest and back, and the diagnosis of mycosis fungoides was made. This was subsequently confirmed by pathological examination. The tumefaction and ulceration were held in check by the *x*-ray, the ulcers healing rapidly under its influence until August of the same year, when four large, deep ulcers appeared on the scalp. These yielded readily to the *x*-ray treatment, however. From this time the predominant symptom was intense itching, accompanied by the usual premycotic eczematoid condition, and marked exfoliation. The premycotic eczema still continued with no abatement of symptoms, and with the constant appearance of tumors and ulcers, until the patient died of asthenia in January, 1906.

Eczema Seborrhœicum, Pityriasis Rubra, Mycosis Fungoides.

Case V.—Bessie F., age 30, born in Russia. In June, 1904, the patient was first troubled with a falling out of the hair, accompanied apparently by an eczema seborrhœicum of the scalp. This continued and was soon followed by chills and fever, which lasted for two days, after which erythematous scaly patches appeared all over the body. These spots continued to form, became larger and coalesced. Scales, large and thick, began to accumulate, and the skin became thickened, hard and dry, and slightly drawn. In December, 1904, symptoms typical of pityriasis rubra appeared. There began a profuse exfoliation. On moving about, the patient produced a very shower of small dime-sized scales. This exfoliation was accompanied by chills, nausea, and delirium, while the contractions about the eyes became more marked. The diagnosis of pityriasis rubra was made and confirmed by a microscopical examination of a section of the diseased skin. During this time, considerable itching and burning was manifested, although no scratch marks were evident. Several ulcers appeared over the body, face, and limbs, very superficial and circumscribed, with borders clear cut, and covered closely with a thick, brownish crust. The integument became absolutely devoid of hair. The nails thickened, especially at their extremities, and became increasingly brittle. This condition of affairs continued for three months, with marked intermissions. Fresh outbreaks occurred at more frequent intervals, accompanied by terrific headaches, faintness, and general malaise. The pruritus still continued as the dominant symptom, relieved only by long daily exposures to the *x*-ray. In March, 1905, from small tumefactions then appearing, the diagnosis of mycosis fungoides was made, and this was confirmed at the time by examination of the pathologist. Urticaria-like spots, really premycotic lesions, constantly appeared, and were held in check and gradually melted by the *x*-ray applications alone. Left for a week without *x*-ray exposures, the patient would have a fresh outbreak of these lesions, and these, protected from the action of the rays by thick coverings of tinfoil, resulted in typical mycotic tumors. Exacerbations became increasingly frequent, attacks of faintness, malaise and general depressions more marked. During a period of quiescence in June, 1906, the patient left the hospital. She died three weeks later, endocarditis being noted as the cause of death.

Eczema Seborrhœicum—Mycosis Fungoides.

Case VI.—Lars E., age 46, born in Norway. The patient was first seen in March, 1906, with a typical seborrheic eczema of the scalp, chest, and inguinal folds. Late in April, and in the early part of May of the same year, lesions were noticed to appear first on the genitals as tumor masses, pigmented spots, and infiltrated, thickened, itchy patches. These were at this time recognized by three different dermatologists as manifestations of a true case of mycosis fungoides. This condition soon became generalized, and pruritus was unmodified by any of the ordinary antipruritic remedies. Under general dietetic and local treatment the constitutional condition improved, and the tumors gradually melted. The patient was discharged in an apparently normal condition, and resumed work as a laborer, with no recurrence as yet.

Allowing the possible inaccuracy in the diagnosis of psoriasis in Case IV., we still have two marked and distinct transitions—the eczema into pityriasis rubra, and the pityriasis rubra into mycosis fungoides while under observation in hospital. In Cases III., V., and VI. the changes were undoubted, and were verified by careful pathological examination.

One will notice at a glance the apparent importance of the *x*-ray treatment in allaying the itching, and causing a general subsidence of these conditions, particularly in the mycotic stage. Some have stated even that the *x*-ray is almost a specific in this condition. This I doubt, for, although patients have improved considerably under its influence, although tumors have melted, and the pruritus has been lessened, yet, in the later stages of Cases IV. and V., a gradual decline in general vitality was noticed, and the patients gradually failed from inroads of the disease, despite long daily exposures to the *x*-ray.

Urticaria and Eczema Changing into Dermatitis Herpetiformis.

Case VII.—John R., age 14, born in United States. As a child, the patient was brought up on the bottle, the mother not having sufficient milk to support the child. He was a strong, vigorous child, and was allowed to appease his appetite at every feeding. At the age of three months, an eczema of the infantile type appeared first on the face, and afterward over the body generally. This condition, in spite of treatment, continued, became chronic, attacks occurring intermittently throughout a period of thirteen years. In May, 1905, the patient suffered from eczema orbicularis, which cleared up under a few weeks' treatment. The generalized eczema continued to break out at intervals, however, responding satisfactorily to treatment until June, 1906,

when it began to disappear. The fading of the eczema was only preliminary to the advent of a new condition. Vesicles occurring in groups, rising from a distinctly inflammatory base, began to appear on the back, chest, and extremities. The lesions were definitely herpetic in nature, and were accompanied by an intense pruritus. There was no involvement of the scalp or of the mucous membrane of the mouth, and the face was comparatively free. Blood examination revealed an eosinophilia, but otherwise the blood condition was normal. The condition was now recognized to be dermatitis herpetiformis, having all the classical symptoms of that disease, the preexisting eczema having entirely disappeared.

Urticaria, as we all know, is a very common antecedent of dermatitis herpetiformis. The latter condition is almost always subsequent to one of that class of symptoms indicative of an autointoxication, *e.g.* graphodermia, urticaria, or erythema multiforme. Some observers, in fact, believe these to be merely clinical manifestations of the disease itself, and not entities, as is generally supposed.

Paget's Disease—Carcinoma.—The surgeon and dermatologist frequently confer regarding the condition known as "Paget's Disease." The lesion is usually found involving the nipple and areola. Considerable pruritus is experienced, necessitating sometimes constant scratching. Oftener, however, the pruritus is less intense; a fissured condition presents itself, accompanied by considerable oozing of serum, which often forms thick crusts. On the removal of these crusts, a red granular base is exposed, and a definite hardness is felt around the site of the lesion. Sooner or later we find a nodular growth in the breast tissues truly carcinomatous in nature.

Case VIII.—Lydia R., age 48, born in Germany, unmarried. The patient has been in America fifteen years. There is no hereditary history of cancer and no traumatic history. One year ago the patient noticed a slight redness of the right nipple shading faintly into the surrounding skin. A few weeks later fissures appeared on the sides of the nipple, a serous exudate appeared, forming thick impetigenous crusts. At that time the patient noticed no induration around the site of the lesion, and little or no pruritus was experienced. Seen in our dispensary in March, 1905, the patient suffered from considerable pruritus. On the removal of the thick crusts around the nipple, a red granular base was exposed, giving to the touch the "coin under a cloth" feeling, typical of Paget's disease. Having left the city, the patient was not seen until ten months later, when definite carcinomatous nodules were felt in the breast; the skin over the tumors was reddened and fixed, and had the typical "pig-skin" appearance. Involved glands in the axilla and along the outer border of the greater pectoral muscle, were easily palpated. The patient refused operation and disappeared.

Case IX.—Margaret F., age 80, born in Germany, occupation housewife. The patient has always been healthy and was the mother of four children, all of whom she has outlived. In March, 1902, the patient noticed a slight redness of the left nipple and areola, but experienced no pruritus. This, under local applications, cleared up at times, but early in May, 1906, the redness recurred. This time, too, no pruritus was experienced. The redness and slight induration proved resistant to any form of local treatment, and when the patient presented herself in the dispensary in August, 1906, the lesion was already ulcerative. It was thickly covered by a heavy crust, and on the removal of the same, a red granular-looking surface was exposed. Immediately below, and to the outer side of the nipple, an indurated globular tumor was made out, and this was firmly adherent to the adjacent skin. No glands could be palpated in the axilla. Amputation of the breast one week later disclosed a tumor which the pathologist reported as true cacinoma, on microscopical examination.

Rosacea—Rhinophyma.—Rosacea, or acne rosacea, as it is sometimes called, also presents transitory changes throughout its course. Primarily is noticed an hyperemia of the skin in some part of the middle of the face—the forehead, nose, cheeks, or chin. Within the inflamed area, acne-like nodules develop, which eventually become pustular. This continued hyperemia leads to an increased development of fibrous tissue, which gives a feeling of thickness to the involved areas. Allowed to continue, large fibrous, pendulous masses often develop, giving to the nose an irregular potato-like appearance, and to the other areas the leonine expression of nodular leprosy. A case of mine, seen in practice, is illustrative:

Case X.—Bridget M., age 58, born in Ireland, occupation news-vendor. For eleven years the patient had suffered from a diffuse redness of the middle part of the face, interspersed with small lumpy protuberances. She had been subject to acute indigestion, severe eructations of gas being the dominant symptom. The patient has always been moderately alcoholic until recent years, when stimulants have been indulged in more frequently than usual. Her occupation as news-vendor necessitated constant exposure to the weather and the patient believes this to have been an etiological factor in the production of the rhinophymatous condition present, when first seen. Seen by me in December, 1906, the patient presented all the indications of rhinophyma. The forehead, inner parts of the cheeks, nose, and chin were thickened and reddened, evidences of the preexisting rosacea. The nose was enlarged to about twice its normal size. From the left ala nasi protruded several tumor masses, some pedunculated, others merely excessive thickenings of the skin itself. Over the thickened reddened area on the forehead were to be seen oily scales peculiar to seborrhœa oleosa. Under local and constitutional treatment slight improvement was noted.

Senile Wart—Epithelioma.—Surgeons who operate cancer extensively have observed from time to time the occurrence and development of epitheliomata from senile warts. On the average individual over the age of sixty, suffering from epithelioma or carcinoma, we find freely distributed over the exposed parts, rough, warty protuberances. These are peculiar to old people, and with or without irritation, they subsequently develop into epitheliomata. Many individuals exhibit a definite epitheliomatous "diathesis" in this respect.

Specific Glossitis—Carcinoma.

Case XI.—Patrick O., age 46, native of Ireland. The patient contracted syphilis at the age of 35, the disease running its natural course without any vigorous treatment. The usual symptoms of night headaches and pain in the bones were experienced. The patient was first seen in the dispensary in September, 1906. At that time there were multiple small specific cicatrices on the forehead. The tongue was indurated and tender, while numerous mucous patches were seen in the mouth. The right submaxillary and right cervical glands were considerably enlarged and tender. There was also considerable salivation. Over a circular area about four inches in diameter, and located just below the lower

right costal border, was seen a rupial florid-appearing lesion, described by Sabouraud as the "syphilitic bouquet." Under mixed treatment the lesions improved for a time. The rupial lesion cleared up, leaving a dull purple-colored scar. The tongue seemed less indurated, but the cervical glands remained the same. A fortnight later the condition grew worse. The tongue became hard and sore, being seamed with fissures peculiar to specific glossitis. The cervical glands became increasingly hard, and soon the floor of the mouth was involved, the whole mass becoming matted together, and practically immovable. The secretion of saliva became profuse, causing the patient no little discomfort. In November, 1906, a biopsy specimen was taken from the tongue and the pathologist reported carcinoma at once, advising immediate removal. Surgeons pronounced the case inoperable, advising palliative measures for his few remaining days.

Case XII.—Peter S., age 52, native of Germany. The patient contracted syphilis at the age of 28, the disease running its regular course without medical attention. In May, 1906, the tongue first grew hard and sore. The patient had previously had mucous patches in the mouth, but no tongue involvement. Marked salivation was an early symptom, which increased and was accompanied by a putrid odor. In this condition the patient was admitted to the dispensary in June, 1906. Ordinary antisyphilitic treatment produced no results, and soon the suspicion of a more malignant condition was aroused. The glands of the neck became involved and hardened. On the surgeon's advice the tongue was removed (Kocher's operation), and the glands of the neck were thoroughly cleaned out. Pathological examination of the diseased tissue disclosed the presence of true carcinoma.

Transitions in Lesions.—No more striking example of "true transition" can be found than the transitory changes in xeroderma pigmentosa. Unna describes this condition as beginning as an inflammatory hyperemia and freckle-like collection of protective brown pigment, while shining mother-of-pearl spots appear between the pigmented areas—a definite sclerosis. A roughness of the skin is noticed early in the disease. This is due to innumerable small verrucous foci, which soon develop into definite warty protuberances, and finally become either true or pigmented carcinomata. Here then we have primarily an inflammatory hyperemia. From this there develop warty growths which finally assume the form of carcinomata.

Similarly, too, Unna, in describing the condition termed "sailor's skin disease," says: "To the first stage of erythema, pigmentation or hyperkeratosis there succeeds a further one. Large wart-like growths appear, hypertrophy of sebaceous glands, and papillary ulcerating carcinomata are the end results." So, too, in kraurosis vulvæ we primarily have an intense pruritus. Then an eczema develops. Later tumefaction and malignancy are the final results.

In the above group we have transitions not from one disease into another, but from one lesion into another, each part and parcel of the same disease.

There may also be found a series of intervening cases, neither "true" nor "false" in transitory change, but simply one condition may precede another with such marked frequency that one might easily consider it a true definite transition.

Bulkley, in his Boston paper before the American Medical Association, made the remarkable statement that a very large percentage of his cases of psoriasis in private practice were preceded by one or more attacks of dermatitis seborrhœicum. He does not consider this a transition, but thinks that the soil most favorable for the development of eczema seborrhœicum is also most suitable for the appearance of psoriasis. In short, individuals predisposed to the one condition are invariably predisposed to the other, the seborrheic element being the first to appear. It is remarkable how very difficult it is—at times impossible—in border-line conditions, to say definitely whether lesions are to be classed as psoriasis or eczema seborrhœicum. The correlation is noteworthy.

Norman Walker, on the other hand, is very emphatic in his belief that here we have a definite transition. He claims that no sharp line of demarcation can be drawn, and that eczema seborrhœicum is the natural antecendent of psoriasis in many instances.

Observers have noted from time to time the frequency with which seborrheic eczema has preceded acne rosacea. Antecedent to the hyperemic stage one very often finds oily seborrheic scales covering the area subsequently involved. Some dermatologists believe the seborrhea to be an etiological factor in the production of the rosacea.

Then, too, in prurigo we find pruritus or urticaria preceding the condition so commonly, that many writers have come to believe that the papule of prurigo is not due to the inherent disease, but to the scratching attendant upon the severe pruritus—purely a secondary condition.

These are but a few meager examples of dermatological transitions. The changes are varied and innumerable, necessitating careful study and patient observation. It is to be hoped that a more general acceptance of the term "transition" may lead to a fuller recognition of the correlation of skin diseases, a more careful study of their common cause, *i.e.* metabolic derangement; and last, but not least, a simplifying of the nomenclature.

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CRIMINAL ASPECT OF VENEREAL DISEASES IN CHILDREN.*

BASED UPON THE PERSONAL EXAMINATION OF OVER 900 CHILDREN, THE ALLEGED VICTIMS OF RAPE, SODOMY, INDECENT ASSAULT, ETC.

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Sexual crimes against children of tender years are much more prevalent in our great city than many of our profession are aware, and no one, not intimately connected with a great society which has in its charge the physical and moral well-being of children, can realize the vast amount of misery these helpless infants are compelled to suffer through the ignorance, cupidity, carelessness, and brutality of men and women, and frequently the worst of these offenders are the very ones who naturally ought to protect those who become their victims. This is a sad condition of affairs, but we have in our city a large cosmopolitan population, many of them coming from foreign countries where childhood is not as sacred as with us, or where children, maturing at an earlier age, have the vicissitudes of adult life forced upon

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them sooner than in this country. Such people, bringing their foreign ideas here, commit acts which are considered criminal in this country, but which, in their native lands, would be looked upon with indifference.

Many of these crimes are undoubtedly committed by sexual perverts whose vagaries are such that they can only be regarded as emanating from an insane mind. I have seen this exemplified in many instances, one of which I may be permitted to cite: A big, lusty Italian raped his eight-months old infant, tearing through the perineum and recto-vaginal septum to such a degree that an extensive plastic operation was necessary to repair the damage. His efforts were so violent that he abraded and excoriated his glans penis so that the injuries were apparent when I examined him a number of days after the crime. He assured me that he had been instructed by God to commit the act in order to save his child's soul. The man was undoubtedly insane and was so declared by a committee and sent to an asylum for criminal insane.

Intoxication is another cause, or rather excuse for many of these crimes. It has been brought to my notice many times that among certain classes, especially ignorant Italians, Chinese, and Negroes, it is an accepted belief that if a man, afflicted with an obstinate venereal disease have intercourse with a virgin, the latter will develop the disease and he will be cured. This belief is responsible for many of the cases of venereal diseases among children which come to our notice.

A fairly large proportion of the rape cases which I have examined occur in girls between the ages of twelve and sixteen, where the child is the willing victim, and in many of these cases the children are so precocious that if the law as to the age of consent was not perfectly explicit it would be extremely difficult to secure the punishment of the perpetrator of the act. If we take into consideration the moral and physical environments under which these children are raised it is not at all surprising that their standards of morality are so exceedingly low. These children are herded in crowded tenements where it frequently happens that in addition to the family in the small apartment, boarders or lodgers are taken and the quarters are so cramped that there can be no decent privacy for anyone. The boarder or lodger in a crowded tenement apartment is a very frequent offender in the rape cases I have seen. In addition to this crowded condition of their homes, the low moral standard of the parents and guardians has much to do toward familiarizing the children with the immoral side of life. I am reminded of a case, and this is one of many, where three children were removed from the home of a longshoreman on the grounds that the children's morals were endangered. The man was accustomed to cohabit with his wife in the presence of his children whenever he was inclined. Is it to be expected that children raised amid such surroundings would develop very exalted moral ideas?

This low standard of morality affects children even of a very tender age, and in some instances girls of nine or ten years, and even younger, have been found with abnormally developed sexual instincts, and they often submit willingly, usually for pay, to the man whose perverted instincts leads him to choose a very young child for the gratification of his sexual desires. It is horribly pathetic to learn how far a nickel or a quarter will go toward purchasing the virtue of these children.

It is no uncommon occurrence for the father of a child to be charged with that most revolting and heinous of all crimes—incest. Within the past two weeks I examined a negro girl, eight years of age, suffering from gonorrhea, whose father was accused of raping her. I know of many instances where a father has used his daughters for his sexual gratification one after another as they grew large enough to permit his advances. The majority of these cases have occurred among Germans of the lowest class, and the defense of the accused man was usually that he thought he had a right to do as he pleased with his own children, and he resented the action of the authorities in stopping the practice and punishing him as an encroachment upon his rights.

I have been connected with the New York Society for the Prevention of Cruelty to Children for the past fifteen years as examining physician, and in that capacity have examined over eight hundred girls upon whom it was alleged the crime of rape had been committed, and about one hundred girls and boys the alleged victims of sodomy, indecent assault, and other sexual and unnatural crimes. These children were from eight months to sixteen years of age; the latter age being the age of consent under the old law in this State. This age of consent has recently been raised to eighteen years, but as the Society was organized for the protection of children under the age of sixteen, it does not lend its aid in the investigation and prosecution of cases where the alleged victim is beyond the age of sixteen. The city authorities have charge of the investigation and prosecution of all rape cases where the complainant is between sixteen and eighteen years of age, and the scarcity of such cases which are brought to trial in comparison with the number where the complainants are between fourteen and sixteen, where the investigation and prosecution are under the supervision of the officers of the Society for the Prevention of Cruelty to Children, exemplifies to a marked extent the efficiency of that society, for it must be admitted that rape is more liable to occur in girls between sixteen and eighteen than in those between fourteen and sixteen.

In the examination of these nine hundred children I found that in about 33 per cent. there was absolutely no physical evidence that there had been any violation of their persons. Their hymens were intact, and there were no evidences of contusions, abrasions, excoriations, or discharges upon or about the genitalia which might have been caused by an act of violence. All suspicious discharges are examined microscopically and if gonorrhea exists an effort is made to secure an examination of the accused.

In 17 per cent. of the cases there were evidences of complete and recent penetration. In other words, the tears in the hymen or fourchette, the abrasions, contusions, etc., of the mucous membranes and neighboring soft parts had not had time to heal between the time of the commission of the alleged crime and my examination.

In exactly 50 per cent. of the cases there was evidence of complete, though not recent, penetration of the genital organs by some blunt object. All the injuries, tears, stretching, abrasions, and contusions had had sufficient time to heal between the first penetration and my examination, and there remained absolutely no physical evidence to show whether the assault had occurred ten days or ten months previously.

In view of the fact that the subject under discussion is venereal diseases as affecting children and not sexual crimes upon children, a discussion of the methods and results of my examinations in

these cases, except where venereal diseases were present, would be out of order.

In my examination of these nine hundred cases of alleged sexual crimes upon children I found that almost 13 per cent. of all the children examined, or 117 children, were suffering from venereal diseases in some form. Of these, 81, or about 9 per cent., had gonorrheal vaginitis, vulvitis, or urethritis. The macroscopical appearance in each case was verified by finding the gonococcus in a stained specimen of the discharge obtained at the time of the examination. Two and one-half per cent. of the children had chancroidal ulcerations involving some portion of the genital tract or anus. These ulcers varied in number from one to a dozen or more. In about 1 per cent. there were venereal warts. There were three cases of gonarthritis and two of gonorrheal infection of the rectum in boys.

I have been surprised at the very small number of cases of syphilis found among the 900 children I have examined. Not over two or three cases have been noted in the whole list. The apparent rarity of this ordinarily common form of venereal disease is due in my opinion to the fact that the children are usually examined within a very short time after the commission of the alleged crime, and sufficient time has not elapsed for the development of the characteristic lesions of the disease. I seldom see the children after my examination until the trial of the accused takes place, and the cases are frequently disposed of entirely within such a short time that if the disease develops at all it makes its appearance after the child has left the care of the Society.

All the children entering the Society's care are bathed before they are allowed to mingle with the other inmates. The bathroom attendant is trained to note any abnormal condition and report to the nurse in charge. All suspicious cases are at once isolated, and a medical examination is made. Should the child be found to have a venereal disease it is transferred as soon as possible to a suitable hospital for treatment. The very small children are sent to St. Mary's Hospital for Children, where they receive the most excellent care and treatment and are returned to the care of the Society when cured.

The older children, especially the girls, are usually sent to the venereal wards of the City Hospital on Blackwell's Island and occasionally to some of the other hospitals which will receive them. It is a deplorable condition of affairs which renders it necessary to send children of tender age, suffering from loathsome diseases, for treatment to the wards of a public hospital where they are brought in contact with the most abandoned and degraded members of their sex, and whatever of wickedness and depravity they may not have learned before, they are apt to acquire during their stay in the hospital. The young girls are frequently very proud of the fact that they have been in what is popularly known as the "vaginitis wards," and it is quite a mark of distinction when they return to the Society.

There is another condition in reference to children to which I would like to call attention. I have been told by a number of dispensary physicians that they treat venereal diseases in children with a fair degree of frequency. While it is possible that such diseases may be transmitted through infected clothes, water closets, etc., the majority of them, it must be admitted, are the results of criminal assaults, and the doctors' examinations are frequently the first intimation the parents or guardians may have that such an assault has occurred. I would strongly urge that all such suspicious cases, and also all cases of pregnancy in unmarried girls under the legal age of consent, be reported to the proper authorities for full investigation. Where the disease was contracted accidentally no harm would be done, but where a crime has been committed the perpetrator might be unearthed and brought to justice, when otherwise he might escape.

Recently within a single week I examined five girls, all under eight years of age and suffering from gonorrheal vaginitis and vulvitis. In three of the cases the accused was a Chinaman, in another an Italian, and in the last the child's father, a negro, —was the accused. In all the cases permission to examine the accused was denied.

In a number of cases in which I have found the victim of an alleged assault suffering from a venereal disease, an examination of the accused revealed that he had absolutely no evidence of the disease. Of course, an investigation is always made in such cases to ascertain whether the accused might not have had the venereal disease in question at the time of the alleged assault, and been cured before the examination was made. The absence of any evidence that he has or has had the disease I have always considered good proof that he did not infect her. If, however, the accused is found to be suffering from the same venereal disease as the victim, the medical evidence is very damaging.

In these 117 cases of venereal disease among the children I have examined, the nationalities of the accused were about as follows: Italian 29, Chinese 25, German and Hebrew 16, Irish 5, Greek 4, Polish Hebrews 4, colored 4, United States 2, not stated 18.

The ages of the children affected with venereal diseases varied from three to sixteen years. I found two children three years of age suffering from gonorrhea of criminal origin; fifty-eight were under ten years of age, and thirty-six were between fifteen and sixteen.

These nine hundred cases examined represented something more than half the total number of examinations made for the Society in this class of cases during the past fifteen years. There are many more cases of alleged sexual crimes against children brought to the notice of the Society, but the examining physicians see only those cases in which, in the opinion of the city magistrate, there is sufficient corroborative evidence to warrant an examination.

In spite of this large number of cases which have been brought to the attention of the Society, I am of the opinion that they are but a small proportion of the cases of sexual crimes against children which actually occur in our city. In a large majority of the cases the children themselves never tell what has happened to them, and again the fear of publicity, the effects of such publicity upon the children and their future, and the dread of placing their children in the care of the authorities are dominant factors in deterring many parents and guardians from making criminal charges when they find their children the victims of such sexual crimes, especially when the injury is more moral than physical.

It is seldom that children of the better classes are the complainants in the prosecution of these cases. Undoubtedly these crimes occur among the well-to-do, but the parents of these children are very loath to endure the unpleasant notoriety which is sure to accompany the prosecution of such a charge.

The amount of sexual crime perpetrated upon children in our city is enormous and is largely due to the crowded conditions under which the poorer classes live. In addition, there is the superstition and dense ignorance of our large foreign population, the brutality, perversion, and intemperance of many of

the alleged perpetrators, and the precocity and low moral standard of many of the child victims.

Since this paper was written, a little more than a month ago, I have examined sixteen girls for rape, three of whom, aged respectively eight, ten, and eleven years, were suffering from gonorrhea. One of these cases was particularly interesting from a medicolegal standpoint.

On November 12, two days after the alleged crime, I examined the eleven-year-old girl and found her hymen intact, with an orifice 12 mm. in diameter; there were no contusions or abrasions, and not the slightest evidence of discharge. I gave a certificate that in my opinion there was no physical evidence that a criminal assault had been perpetrated upon her. The corroborating evidence was slight and the case was disposed of in court by the discharge of the accused, and the child left the charge of the Society three days after my examination. About December 1, eighteen days after my examination and twenty days after the alleged assault, the mother noticed that the child's garments were stained by some vaginal discharge. She was taken to a dispensary for treatment and a few days later, because the child refused to take her medicine, the mother beat her severely with a strap, producing a number of contusions upon her thighs and legs. On December 8 she became very ill and was taken to a hospital where it was found she was suffering from severe abdominal pains and great tenderness. Finding the child severely bruised and learning that there had been an alleged assault, the physicians examined the vaginal discharge and found it to be due to gonorrhea. The hospital authorities at once notified the coroner who ordered the immediate rearrest of the alleged assailant. An examination of his penis by the hospital doctors failed to reveal the slightest evidence of gonorrhea.

I was directed to see the child and on December 10 found her to be suffering from a gonorrheal vaginitis, together with a peritonitis involving the entire right side of the abdomen, extending to the free border of the ribs. The pain, tenderness, and tension were most marked over the region of the appendix. I examined the man and failed to find gonococci.

In this case the gonorrhea developed almost three weeks after the alleged assault. In the meantime the mother had beaten the child severely, the accused man had absolutely no indication of gonorrhea, and the child developed a condition which resembled very closely an attack of acute appendicitis. The child recovered, but it would be interesting to know in the case of the child's death who would have been held responsible.

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OBSERVATIONS ON THE TREATMENT OF TUBERCULOSIS IN ARIZONA.

By ISAAC W. BREWER, M.D.,

FORT HUACHUCA, ARIZONA

Every winter brings a host of persons with tuberculosis to Arizona and New Mexico. A considerable proportion of them recover or improve, while not a few do badly, and either die or remove to some other portion of the country, hoping to be benefited by the change. Without doubt the climate of the Southwest, with its low humidity, abundance of sunshine, and mild winters, is a most favorable factor in the treatment of tuberculosis; but a study of the condition of the Indians in that region will convince anyone that climate alone will neither cure nor prevent the disease.

In this paper it is my intention to consider what appear to be the reasons why some of the patients sent to the Southwest fail to obtain any benefit from a sojourn in that region, and then to give some general information about the climate and accommodations that are to be found in the territories. These remarks are based upon experience with a few cases that have come under my care in this region and upon conversations with physicians, and with patients suffering with the disease whom I have met in different portions of the Southwest.

One of the principal causes of failure is lack of proper food. Physicians in the East do not appreciate that very little of the food supply of the Southwest is grown in that region. As a rule, almost everything is imported from Southern California or the East, and, owing to the excessive freight rates, everything is very high. The charge on a box of fruit from Southern California to Fort Huachuca generally equals, and frequently exceeds the original cost in the Los Angeles market. Butter is generally forty cents a pound, milk ten cents a quart, eggs from thirty to sixty cents a dozen, and other staples correspondingly high. The native beef is often tough and stringy, although in some of the large towns alfalfa beef from the Salt River Valley can be had. This is probably the best beef in the country. For persons with plenty of money these figures mean nothing, but for those in moderate circumstances they are prohibitory. Around Phœnix the conditions are somewhat better, as the local markets are largely supplied from the surrounding farms.

In order to overcome the high prices it is not uncommon to find invalids economizing either by cooking their own food or by taking their meals at some cheap restaurant. In the first case their food is badly cooked, and in the latter instance the quality is generally poor, and the service is always bad.

My experience with boarding houses has been limited, and my information is largely second hand. At most of the resorts there are satisfactory accommodations of this class, but the number is limited. One great disadvantage in them is that a large number of persons are thrown together without proper supervision, and not infrequently they become morbid and despondent. Constant discussion of symptoms does not encourage the sufferer, especially during the early days of his sojourn.

There are few, if any, first-class hotels in this region. This is partly due to the difficulty in obtaining competent help and partly to the cost of food supplies. Most of the hotels do not take "consumptives," which means that they do not take cases that are far advanced. I have not seen a hotel in this region that did not have one or more persons with tuberculosis among their permanent boarders. The rates at the best houses are from three to five dollars per day.

Lack of Congenial Society.—Dr. Norman Bridge of Los Angeles, speaking of the climatic treatment of tuberculosis, says: "The patient in any climate must be properly fed, housed, and warmed. . . .

It is just as important that he should have contentment and mental peace. . . . . I would rather have a patient kept in the outskirts of an Eastern city (or in the heart of the city), under good hygienic management, sleeping in the best air obtainable winter and summer, and with friends and comforts about him, than to send him to some better climate to shift for himself and be lonesome and homesick." These words from a man who has had a large experience with the treatment of tuberculosis should be remembered by every physician before

he sends his patient among strangers to some remote region to obtain the problematic benefits of climate. Not a few persons who come here suffer from nostalgia. Especially is this the case with city bred men who have been used to the hurry of modern business life. They are liable to find fault with everything and to consider their sojourn in the West as a banishment. Such persons always do badly. Those who cannot adapt themselves to new conditions had better stay away. If your patient be despondent, keep him at home.

Many consumptives come to this region having been instructed by their home physician to leave medicines and physicians alone and to live in the open and "rough it." This is about as pernicious advice as can be given. The patient's first duty is to consult some local physician. He will thereby be saved considerable expense and annoyance and will start properly. The physicians in this region are forced to pay particular attention to tuberculosis, and, besides the usual interest that physicians take in their patients, many of them having had the disease have a fellow feeling for the sufferer.

Few, if any, tuberculous persons have the strength to "rough it" when they first arrive here. The increased altitude causes an extra strain on the heart and lungs, and until compensation is established most persons suffer from more or less shortness of breath. They should therefore be quiet until they have become used to the climate and the altitude.

If, after becoming acclimated, one desires to try camp life, and the local physician considers him physically able to endure its hardships, he may procure several Munson tents, a competent guide, and saddle and pack animals, and shift his camp from place to place as the season advances, going north to the region of the Black Mesa or Flagstaff in the summer, and returning to Tucson, or the Salt River Valley in the vicinity of Phœnix, in the winter. The tents will rarely be used excepting in bad weather, for during the greater part of the summer and fall it will be possible to sleep in the open. There are many charms to such an outing. It is devoid of monotony, and hunting and fishing may be enjoyed in the mountains. The region traversed is filled with prehistoric ruins, especially the valley of the Verde and around Flagstaff. On such a trip the food will be necessarily confined to canned vegetables and fruits, and bacon will constitute a large portion of the meat ration.

There are a number of tent colonies in Arizona, and, if under proper medical supervision, they are excellent. Being cheaper than other accommodations, they are available for those in moderate circumstances. Many of them unfortunately are not properly laid out, and the tents are often close and badly ventilated. The practice of wainscoting tents is objectionable, as it reduces the amount of fresh air that can be admitted.

Tents should be pitched so that they will be shaded during a portion of the day. It is well to have them face the east, so that they can be flooded with sunlight as soon as vacated in the morning. They should be provided with board floors made in small sections that can be readily removed so as the space beneath may be kept clean. They should never remain on the same ground for more than five days at a time; at the end of that time they should be moved so that the ground may be thoroughly disinfected by the direct rays of the sun.

In rainy weather tents become cold and clammy, and to obviate this a small stove is often used. Some of the camps that have come under my notice have been badly conducted from a sanitary point of view.

As regards exercise, many physicians have erroneous ideas. Being used to the overfed business man who leads a sedentary life, they think all persons should take as much exercise as possible. We encounter many persons who have been sent here and told to procure a horse and ride as much as possible. Every physician who has had any experience with tuberculosis in this region well knows that the new comer should rest for a considerable time after his arrival. He may then begin to do a little walking, and later may indulge in horseback riding if his condition warrants it. A physician in an eastern city, who has a reputation as a specialist in lung diseases, once told me that every patient with tuberculosis should buy a horse as soon as he came to the Southwest, remarking that there is a peculiar magnetism transmitted to the rider from the horse which greatly aids his recovery. I have looked for this magnetism in vain, nor has it been evident to any of my friends. I say without reservation that the majority of persons with tuberculosis who ride horses in this region shortly after their arrival do themselves great harm. This is especially true of persons with pleurisy.

Exercise, like all other forms of treatment, should be taken only on the advice of a competent physician.

There is a lack of proper diversion in this region. Theatrical performances are not very common, and musical entertainments are infrequent. In this respect conditions are improving. In the days when gambling was wide open (now happily passing) many who could not endure the monotony resorted to the barrooms and playhouses, and, besides losing their money, lost their health by remaining in a vitiated atmosphere and indulging in alcohol.

Work and Means of Support.—Do not send your patients to Arizona unless they have sufficient funds to cover their expenses for a year, or unless they have assured a position that will support them. There is little work such as persons with tuberculosis are able to do, and for every place there are many applicants. There is plenty of hard work for strong men in the mines and on the railroads, but few consumptives are able to undertake such work. After a residence of a year or so one's health may be so far restored as to enable him to engage in hard work. Many of the most successful business men in the territory were invalids when they arrived.

What Class of Cases Shall be Sent to Arizona?—Incipient cases do best, and the sooner they come under the influence of this climate the better. Do not delay until the diagnosis has been confirmed by finding the bacilli in the sputa, but as soon as there is a well-grounded suspicion of the disease send them out, provided they can afford it. Such patients nearly always recover. A certain proportion of those who come under the influence of this climate later in the disease also recover. When there is secondary infection, or a mixed infection, the prognosis is not so favorable. Although there have been some very encouraging reports of such cases during the past year, I do not think it advisable to send them to this region. They generally are too far gone to be benefited, and they are better left at home among their friends.

There is an impression that laryngeal cases do not do well here. My experience leads me to believe that it is well founded. The dryness of the air and the occasional dust storms tend to cause irritation of the laryngeal and nasal tissues, and all the cases of simple laryngitis that have come under my observation have done badly. It is therefore suggested that such cases be sent to a more moist climate.

Organic heart disease is usually said to do badly

in an elevated region, but Babcock does not hold that opinion, and I have known of three patients with advanced valvular disease who have improved very much since coming to Fort Huachuca, which has an elevation of about five thousand feet.

Where Shall the Patient be Sent?—To many Arizona is the "country God forgot," and is nothing but the dreary desert seen from the windows of the transcontinental trains. Others think it has an ideal climate for the treatment of tuberculosis. Neither of these opinions is correct. There are periods when the climate is anything but mild and sunny. In a previous paper* it has been shown that the Indians who live in the open air in this region are rapidly being exterminated by tuberculosis. Much of the territory is arid, but there are large areas of forests and many fertile valleys.

The health resorts may be classified as follows:

Summer stations: Flagstaff and vicinity.

All-the-year-round stations: Prescott and other points in the southern portion that have an elevation of about five thousand feet.

Winter stations: Tucson, Phœnix, and Yuma.

Flagstaff has an elevation of seven thousand feet and is situated on a mesa at the southern base of the San Francisco Mountain Range. The summer climate is delightful, the days are never hot, and the nights are always cool. Frosts occur during every month excepting July and August. The accommodations are very poor. Cottages can be had at reasonable rates, but during the summer the demand is greater than the supply. The cost of living is very high. There are two hotels, the proprietors of which profess not to take "consumptives," but there were at the time of my visit at least two stopping at one of them. The surrounding country is full of interesting ruins, and the green pine trees, with their fragrance, are very welcome to those who have wintered in southern Arizona.

Prescott has an elevation of 5,260 feet. During the summer there are some warm days, but being in the mountains there is always a breeze at night, and during the hotter hours of the day there is usually a strong wind which prevents the heat from becoming oppressive. The winter nights are cold, and those who sleep outdoors will have to be warmly clad. The humidity is low. The precipitation amounts to 15.6 inches. During the winter there is considerable snow. There are during the year an average of 228 clear days, 101 partly cloudy days, and 36 cloudy days. It is a pretty little town, and has a pleasant society. There is a hospital in the town, and about a mile west of the plaza Dr. Flinn has established a tent and cottage sanitorium. The hotels are not very good, but there are said to be some good boarding houses. Persons in the early stages will be able to find suitable accommodations, but when the disease is more advanced it will be more difficult.

Tucson has an elevation of 2,368 feet. It is distinctly a desert town, and all of its food supply is imported, consequently the cost of living is high. There are a number of pretty good hotels and several cottages that take roomers. Tents and small cottages can be rented at reasonable rates, and board can be had at any of the hotels. The climate is cooler than either Yuma or Phœnix, especially the winter nights. The mean minimum temperature for December is 37° F., and in January it is 35°. Nevertheless, many persons sleep in tents or the open air during the entire winter. There are occasional snow storms. The winter precipitation is 4.2 inches. The humidity is about the same as at Yuma and Phœnix. From October to March there are on an average 119 clear days, 42 partly cloudy days, and 21 cloudy days.

Forty miles north of Tucson, in the Santa Catalina Mountains, at an elevation of 4,500 feet, is Oracle. It is from six to ten degrees cooler than Tucson, and there are two ranches where tents and cottages can be rented at reasonable rates.

Phœnix has an elevation of 1,087 feet, and is probably the best known resort in Arizona. Being a modern town, and distinctly a health resort, the invalid will find many comforts not obtainable in other portions of the territory. The surrounding country is highly cultivated, and much of the produce used is raised in the immediate vicinity. The alfalfa fed beef is the best I have ever tasted. The mean temperature is 70° in October, and falls to 50° in January, rising to 60° in March. The average precipitation for the six months ending with March is 4.2 inches. The humidity has a greater range than in Yuma, being 41 per cent. in October, rising to 52 per cent. in January, and falling to 38 per cent. in March. During the six cooler months there are 119 clear days, 38 partly cloudy days, and 25 cloudy days. Sleeping out is possible during the entire year. In the town are numerous boarding houses, besides a large number of hotels. Just beyond the city limits there are two cottage and tent sanatoriums, where board and a tent may be had for from $12 per week up.

Yuma is situated at the point where the Gila empties into the Colorado, and has an elevation of 141 feet. The town is small and the accommodations are limited. Recently the Yuma Heights Sanatorium has been opened and better accommodations are assured. The sanatorium is only open during the winter months. The mean temperature is 72° in October, falls to 54° in January, and is 64° in March. The humidity ranges from 44 per cent. in October to 41 per cent. in March. The total precipitation for the period from October to March inclusive is 2.1 inches. During the same period there are on an average 130 clear days, 42 partly cloudy days, and 10 cloudy days. Yuma seems to be a desirable winter station for persons who cannot stand the elevation of Phœnix or Tucson. When the irrigation project now under way is completed it will become a large farming community.

In the above I have given what appear to be some of the more important causes why patients sent to the Southwest do not recover from tuberculosis. An outline has been given of the climatic conditions of the principal stations in the territory. Those who desire more exact information are referred to the following papers dealing with local conditions: Climatology of the United States, Bulletin "Q" United States Weather Bureau, 1906. The climate of Flagstaff, *Journal of the Outdoor Life*, Vol III., pages 195-197. The winter climate of Tucson, *Boston Medical and Surgical Journal*, Vol CLV., 1906, pages 307-309. The climate of Prescott, *Canadian Lancet*, Vol XL., 1906, pages 206-210.

The object of this paper is not to discourage the sending of patients to this region, but is a plea for more care in selecting cases, and to urge upon the profession not to send persons who have not the funds with which to secure proper food and comforts.

I do not believe there is any quality of this climate which will cure tuberculosis irrespective of good food and proper care, but I do believe that when patients can secure such things they stand a better

*Tuberculosis among the Indians of Arizona and New Mexico; *New York Medical Journal*, Vol. lxxxiv, 1906, p. 981.

chance of recovering in this than in any other region of our country. If there be anything in the outdoor life, then I am right. To appreciate this, one has but to compare the conditions which obtain here with what the patient is exposed to during the winter in the East. Here the invalid can be outdoors nearly all the time, while in other sections, owing to bad weather, a large portion of the time must be passed within the house. I have a patient who has not slept in the house for over a year. His only protection is a porch and a canvas screen to keep off the snow and rain.

The greatest need, from a tuberculosis point of view, is a large sanatorium conducted on the same principle as the Adirondack Cottage Sanatorium. The Federal Government has given millions of acres of the public domain for educational purposes; why should it not devote some of its desert lands to be used for those sick with tuberculosis? There is plenty of land available for this purpose. Not far from where I write is an abandoned military reservation that would answer admirably. Adjoining it is a large forest reserve which would be an excellent recreation ground for those who are convalescent.

THE STOMACH TUBE IN DIAGNOSIS.

By NELLIS BARNES FOSTER, M.D.,

NEW YORK.

For some reason which is not clear there is a belief among a number of medical practitioners in this city that the use of the stomach tube in the diagnosis of gastric disease is usually of no value, or at best an aid only in exceptional instances. These men, at least in part, are in the habit of confining their attention to the acid secretion as shown in the ordinary Ewald test breakfast. If only one test meal is taken from a patient and no observations are made on the material removed other than to estimate the amounts of free and combined hydrochloric acid, then, of course, from these facts no conclusion whatever can be made. But the man who uses only a part of a method is in a poor position to condemn the whole process. If but one observation can be made on a patient, as frequently occurs, and the presence or absence of HCl is the only fact desired, the desmoid test as used by Sahli is more convenient to both physician and patient than would be a test meal. When, however, a diagnosis is desired with anything like accuracy, much more information can be gained by the use of test meals and a few simple tests applied to the material removed from the stomach.

There are three things which must be considered in diagnosis and in the treatment of abnormal gastric conditions. They may be grouped under the headings of (1) secretion; (2) motility; and (3) the presence of abnormal materials.

While we are more conservative in drawing deductions from amounts of HCl, which we find secreted in the stomach than formerly, because it is now believed that the normal range is wider than it was at one time supposed to be, yet it cannot be denied that abnormal function in the stomach is often manifested by marked variation in the secretion of HCl, and that a hypo- or hyperacidity is important to diagnosticate, since it is so useful a clue to treatment. However, I do not think that one may conclude that he has to deal with a case of hyperacidity on the evidence of a single test meal—mental states have a marked influence on gastric secretion, and the mental state of a nervous patient anticipating his first ordeal with a stomach tube cannot be described as one of equanimity. In short, the acid findings in an initial test meal are the least accurate of the data ascertainable. Some idea of the motility in the stomach is one of the easiest facts to determine, yet it is the function most frequently neglected by diagnosticians. Simply washing out the stomach in the morning before any food is taken sometimes gives ample evidence of deficient motility. It is not a unique experience to find in the sediment from such a lavage recognizable elements of each of the three meals eaten the day previously. Another method is to remove the contents of the stomach a number of hours after a moderate meal of meat, vegetables, and bread. So many causes may give rise to deficient motility besides ectasia that it is not surprising we find it so frequently. Among these causes cicatrix (we are prone to forget that ulcers are often latent), resulting in partial stenosis of the pylorus, is most frequent in my case records, next is stenosis due to tumors, both benign and malignant, and last stenosis due to adhesions between the duodenum and some other viscus, such as the gall-bladder. These adhesions produce partial stenosis by causing kinking of the duodenum.* In conditions of this nature it is useless to endeavor to make a diagnosis without resorting to the repeated use of a stomach tube. To illustrate the importance of this method of examination one case may be mentioned:

H. C., age thirty-four. Complained of vomiting and loss in weight. His past history is unimportant. For a year he has been vomiting at irregular intervals; during the last six months he has vomited almost daily. His weight has fallen from 145 pounds to 119. He has no pain, but a feeling of discomfort in his stomach region constantly. There has never been blood in the vomitus nor have his stools been black. He has consulted three physicians, the last of whom took a test meal. He was told that his stomach secreted no acid and was directed to use acid after meals.

On examination the patient showed no evidence of organic disease—morning lavage of the stomach removed considerable residue in which food material could be recognized. Ewald test meals showed no free HCl; mucus in excess, numerous bacteria, and fermation in tubes. Lavage at varying times after meals disclosed pronounced motor insufficiency, but the stomach was not dilated and its muscle tone appeared excellent.

Believing that there existed some form of benign stricture of the pylorus, operation was advised. The condition found was a scar due to a healed ulcer at the pylorus, this scar producing so marked a contraction of the pyloric opening that only a small sound could be passed through it. Finney's operation was done and an absolute cure resulted. This case is mentioned solely as an example of those instances wherein a diagnosis might be made by inspection of the stomach contents alone without resorting to any tests whatsoever. This simple inspection is too frequently omitted.

The most important abnormal material to look for in test meals is blood. The presence of occult blood in the stomach contents is quite constant in cases of carcinoma, and a frequent finding in ulcer cases. It signifies little what test is employed, the guaiac, aloin, or the various modifications of these tests are all good.†

*The cause of stenosis in these cases was either confirmed by or determined at operation.

†Where ulcer or cancer is suspected the diet should be made meat free for a couple of days, in order to permit of examination of the feces for occult blood.

These tests for blood are so simple and the results are not infrequently so important that one can ill-afford to neglect them. Blood is found in other conditions than ulcer and carcinoma, *i.e.* esophageal varices, erosions of the mucous membrane, but a differential diagnosis is seldom difficult and the existence of the mentioned possible origin of blood does not detract from the value of the test when used as a routine in gastric analysis.

Of more questionable worth is the microscopic examination of smears of the gastric contents for bacteria. Occasionally such large numbers of microorganisms are found that a clue is given to the nature of the disorder, and the finding of Boas-Oppler bacilli or sarcinæ is significant. In the majority of examinations so few bacteria are present that a fermentation test of the gastric contents in fermentation tubes is, perhaps, a more trustworthy guide to the nature of the bacteria present. The omission of the microscopic examination, however, is inadvisable.

There exists an impression, which has been shown repeatedly to be false, that the presence of free hydrochloric acid in the stomach excludes the formation of lactic acid. It is quite possible for lactic acid fermentation to proceed in the presence of HCl, and the former should always be looked for in routine analysis; especially is this true in connection with the early recognition of carcinoma, since the early differentiation of this malady is the only hope of successful surgical aid.

The interpretation of facts disclosed by the employment of test meals is not always clear, but error lies more often in drawing a conclusion from insufficient data than it does in misinterpretation. The presence of a normal amount of free hydrochloric acid in the gastric secretion is not incompatible with carcinoma, nor does the absence of free acid of necessity indicate this malady. Other data, such as the presence or absence of occult blood, lactic acid, etc., are indispensable. But in no other way can one detect cancer of the stomach at a sufficiently early period to make an operation of therapeutic use. When a tumor has developed so that it may be felt, the time for complete removal of the growth has gone by. In the benign gastric conditions, stenosis of the pylorus and marked dilatation wherein surgical aid is being found so useful, the stomach tube is the quickest means and most reliable for determining when such aid shall be considered. The differentiation of gastric ulcer from gastric neuroses can hardly be made with any degree of confidence without recourse to test meals.

In conclusion it must be especially emphasized that the determinations of the acidity of the gastric juice are the least dependable of the diagnostic data, and that when this alone is done valuable aids, such as the tests above mentioned, are ignored.

The tests I have mentioned are those which have been most fruitful in my experience in securing diagnostic data. I am convinced that anyone using these methods with care will find them constantly a help and often indispensable to diagnosis. The surprising thing is that after the advances that have been made in the diagnosis of gastric disorders, particularly cancer and ulcer, any one should feel in doubt about the utility of the special method on which these advances primarily depend.

128 Madison Avenue.

A Titled Ophthalmologist.—The Emperor of Austria has conferred on Duke Karl Theodor of Bavaria the Order for Art and Science in recognition of his distinction as an ophthalmologist.

OPERATION FOR INTESTINAL OBSTRUCTION IN A CHILD OF FIFTY-FIVE HOURS—DEATH IN SEVENTEEN HOURS.

By HOWARD CRUTCHER, M.D.,

MEXICO, MO.

In the early hours of January 8, 1907, I was called by Dr. M. E. Crawford of this city to see with him a female child that had passed nothing from its bowels since birth. The child appeared to be perfectly developed and very vigorous, but presented a clear-cut picture of total intestinal obstruction. Dr. Crawford had tried mild purgatives without effect, and together we applied water pressure through the rectum without good results. There were occasional vomiting spells and the distention was extreme. The case presented an almost hopeless outlook, but Dr. Paul E. Coil, who had been summoned in the meantime, agreed with Dr. Crawford and myself that the child was justly entitled to the only possible chance to save its life. With this conclusion the parents of the child agreed, not, however, without receiving the usual flood of feminine lay advice, which is always most vigorous and voluminous when backed by the densest ignorance.

No anesthetic was given. Through a small incision in the right inguinal region the exploring finger detected a collapsed colon and a highly distended small intestine. Peritonitis was already well advanced. A loop of ileum was drawn into the wound and a fecal fistula established by the usual methods. The bowel was opened at once, and a profuse discharge of gas and fecal matter followed. This continued at intervals during the remaining hours of life.

The child ceased to vomit, retained some slight nourishment, grew more quiet, but gradually sank, and died seventeen hours after the operation, apparently from extension of the peritonitis. The infection started no doubt from the point of occlusion and traveled through the intestinal wall.

I regret that I am unable to throw any more light upon the cause and seat of the obstruction in this case. A prolonged or extensive operation would have killed the patient on the table. We did the only practicable thing and lost. Unfortunately no post-mortem examination was permitted. The case is reported only on account of the tender age of the patient. I believe that every such patient should be given the benefits of surgery, without regard to the dark outlook ahead. Without the blessings of modern teaching and practice the outlook would be much darker than it is.

Why Defective Nasal Respiration Impedes Growth and Development.—P. Watson Williams declares that the pernicious effects of mouth-breathing in children are seen in the constant tendency to infective catarrhs, bronchial colds, and pulmonary complaints, from which children with adenoids and some other causes of nasal obstruction are prone to suffer. "Adenoid growths" are by far the commonest cause of defective nasal respiration in childhood. The absence of normal nasal respiration causes pulmonary troubles and defective development of the chest wall. It may be said that children who persistently fail to expand their lungs are underfed. After abnormal conditions in the nose and throat are removed the physician should advocate the advantage of open air, cold bathing, and appropriate respiratory exercises, in order that these listless, partly asphyxiated children may grow up in the fullness of life.—*The Bristol Medico-Chirurgical Journal.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE RELATION OF IMMIGRATION TO THE PREVALENCE OF INSANITY.

THE constant increase in our asylum population cannot serve otherwise than as an indication that mental disease is on the increase. The question naturally arises to what is this due, and the answer is that it may be traced to several sources. One of these was discussed at the recent New York State Conference of Charities and Correction following a paper by Dr. T. W. Salmon, who is in charge of the medical inspection service at the immigrant station on Ellis Island. In addition to the cases of insanity which originate among what we may for practical purposes designate as the native population, there is a large influx to this class from among our immigrants. New York being the chief port of entry, it is natural that it should become the destination of those immigrants of defective physical and mental equipment whose means do not suffice to carry them further. This tendency to remain is fostered by the large colonies of aliens in this city which assure some support to a dependent countryman. It is also a matter of statistics that, although this State receives but thirty-one per cent. of the entire immigration into the United States, it is the intended destination of more than seventy per cent. of those who are admitted to the hospitals upon their arrival at Ellis Island, certified as being unfit to land on account of some mental or physical defect.

That a definite relation exists between these figures and the prevalence of insanity in this State is a conclusion which is made very evident by Dr. Salmon in his thoughtful paper. In 1875 the ratio of the insane to the whole population was one in 675; in 1895 it was one in 294. In order to arrive at some opinion as to the part that immigration has played in this result, it is necessary to consider a number of questions. First among these is the proportion of foreigners in our institutions for the insane. The reports of these hospitals show that in 1905 one in 190 of the foreign born and one in 363 of the native population was in an institution for the insane. Of all the admissions to the New York State hospitals since 1888, 48.4 per cent. were of foreign birth, although the foreign born never exceeded 26 per cent. of the entire population of the State. It would appear only reasonable to suppose that the immigration in recent years especially has contributed very heavily and quite disproportionately to the prevalence of insanity in this State.

Within the past decade the type of immigrant has changed considerably, and where we once had a preponderance of the northern races of Europe, we now find the Hebrew, Slav, and Italian more strongly represented. An attempt to compare the ratios of insanity between the "old" and the "new" immigration is scarcely practicable with the data at hand, although it is quite generally admitted that among the Hebrews certain types of mental disease are very prevalent. Whatever doubt there may be, however, about the relative occurrence of insanity between these two classes, there is no such uncertainty about the proportion of idiots and other mental defectives. Defectives are as great a danger to the community as the insane, for especially those of the lighter types are not admitted to institutions for the insane, but are at liberty to exercise at large their criminal instincts and deformed moral sense. This makes them not only undesirable members of society, but frequently public burdens in the penal institutions. It appears from the record that many defectives are landed at Ellis Island, but unfortunately the present immigration law does not make their deportation mandatory unless they are actually in a condition of idiocy. The fact is that during the past year 15 per cent. of those certified for imbecility or other mental defects were admitted to this country by the authorities.

There are laws to prevent the landing of the insane or to provide for deportation if they become a public charge within two years after admission. It seems, however, that there are numerous loopholes through which escape is possible. It may be difficult to subject these errors to direct reform, but there are other ways in which some good can be accomplished in preventing the entrance into this country of undesirable individuals of this type. Insanity is apparently sufficiently dealt with in the immigration laws, but the latter should be amended to include in the prohibited class all mental defectives and those certified as having evidences of constitutional mental inferiority or instability. With a law of this kind all those undesirable accessions to our population which are likely to develop criminal tendencies could also be excluded. We are undoubtedly confronted by a serious problem as regards the character of some of our foreign-born population, and the question should be regarded in a sensible light rather than in the sentimental aspect which finds favor among a certain class of our population. We need the immigration, but it must be selected, and the selection should be based on mental and bodily fitness rather than on other and less important considerations.

THE COLLEGE OF PHYSICIANS AND SURGEONS.

THE *Columbia University Quarterly*, in giving up practically the whole of its current issue to articles on subjects concerning the medical profession, bears graceful witness to the prominent position of the medical faculty in the fabric of the University. The number commemorates the centenary of the old College of Physicians and Surgeons, now the Medical School of Columbia University, which received its charter on March 12, 1807, and in November of the same year opened its doors in a house on Robinson street, now Park place. Six years later the new

institution absorbed the already languishing medical school of Columbia College, in 1860 entered into a nominal union with Columbia College, and in 1891 became an integral part of the University, thus realizing what is said to have been a cherished dream of the eminent Dr. Samuel Bard, under whose early presidency the foundations of the institution's future prosperity were laid.

The record of the institution's development from its modest beginning with a faculty of seven members and a first graduating class of eight, to its present importance, is traced in engaging fashion by Dr. Frederic S. Lee, while an interesting side light on the medical life of the city a century and more ago is afforded by a sketch of the life of Dr. Bard contributed by Dr. Walter B. James. Dr. M. Allen Starr, in an article on medical education in New York, rehearses the manifold advantages of this city as a center for medical education and the opportunities for undergraduate and advanced workers offered by its seventy-four hospitals and fifty-three dispensaries—to leave out of the count Brooklyn's large list of medical institutions. The teaching anatomical museum for undergraduates, a recently elaborated feature of the equipment of the school, is described by Dr. George S. Huntington, and Dr. James A. Miller outlines the progress of the antituberculosis movement in New York.

The address entitled "Medical Ideals and Medical Tendencies," delivered by Dr. L. Emmett Holt at the opening of the college last fall, is reproduced, and forms a delightful essay on the attitude of the physician to his life work, well worthy of the consideration of every medical reader. In pointing out the undesirability of a too blind subservience to what he terms the scientific spirit in modern medicine, which tends to sacrifice to some extent the faculty of careful bedside observation to the cult of laboratory diagnosis, Dr. Holt touches on one of the difficult problems of modern medical instruction, which is discussed at length by Dr. Francis C. Wood in an article on the department of clinical pathology of the college. In this thoughtful paper the necessity for a broader policy of coordination between hospital laboratory and hospital ward is indicated, and a well-rounded system of undergraduate and postgraduate instruction in clinical pathology, which shall be abreast of modern conditions and yet free from one-sidedness from either the laboratory or the clinical standpoint, is convincingly advocated. In the editorial department are to be found pertinent comments on the anniversary celebration of the College of Physicians and Surgeons which is to be held in June, and on the quiz system and the clinic in medical teaching.

This commemorative number of the *University Quarterly* serves but as one more illustration of the mutual benefits that have attended the coalition of the two institutions, and of the fact that the art of medical pedagogics has been much advanced by their union.

METALLIC SUTURES.

The general popularity of the absorbable suture has led to the practical abandonment of most other materials for this purpose, particularly when they are to be buried in the tissues. The absorbable suture, however, has always the uncertainty connected with it of becoming the center of growth for an infectious process or of continuing the same when placed in its close proximity. The truth of this has been recognized in the attempts which have been made to impregnate catgut, for example, with iodine and other antiseptic agents. Certain of the metals are known to possess the property of inhibiting the growth of microorganisms, but sutures of these materials seem to have found little favor except in isolated instances. The main objection to them has been the local irritation which they are said to cause, but it has often been shown that this need not interfere with their employment.

The antiseptic value of the metal suture has again been studied by Leedham-Greene (*The Practitioner*, March, 1907), who examined the inhibitory properties of a number of metals when incubated with gelatin or agar cultures of staphylococcus aureus. In the case of the majority of the metals, the presence of the wire loop in the gelatin seemed to have little or no influence on the growth of the microorganisms, which flourished in all parts of the dish, as well as in the immediate vicinity of the metal. But it was evident that some metals exhibited a distinct and powerful inhibitory action upon the bacterial growth. In these cases the culture medium in the immediate neighborhood remained free from growth, a microscopical examination of the plates confirming the gross appearance. Gold, platinum, tin, aluminum, magnesium, and nickel showed practically no inhibitive power, and lead and silver only when cultures grown at a low temperature were employed. Iron exhibited a variable action, depending on whether oxidation was hindered or favored.

From the bactericidal standpoint, copper proved the most powerful of the metals, and, in a less degree, its alloys, bronze and brass. It would appear that a metal possessing this power of inhibiting bacterial growth to a marked degree would prove suitable for suture material providing its ductility, tenacity, and freedom from irritating properties were not affected. Silver, although apparently the most widely used, does not conform to these specifications to any marked degree; it is costly, not as tough or ductile as might be desirable, and its antiseptic power is insignificant. Aluminum-bronze wire has been largely used on the Continent to supplant silver, and from the large amount of copper present (95 per cent.), it would be likely to meet the desired indications. The metal, being rather soft, cannot be used in the form of screws or nails, and Leedham-Greene suggests a true bronze, consisting of a mixture of copper and tin, for this purpose. It has been shown that sutures of this kind which possess a certain degree of bactericidal action are less irritating to the tissues and less apt to be followed by the production of sinuses than those having no antiseptic value. Pure copper would seem to be the most nearly ideal material for the purpose, and, although it is generally considered to be too irritating to the tissues, Greene finds that in his own experience this assumption is not borne out by the facts. While absorbable sutures will probably continue to be preferred for routine use, it is possible that Greene's suggestions may prove practicable for certain cases.

CLOTHING FOR THE TROPICS.

In his interesting work on "The Influence of Tropical Light on White Men," Major Charles E. Woodruff speaks of the mistaken notion that white is the best color for clothing in the Tropics. It is true that white garments reflect the heat rays, but the actinic rays pass through them readily; hence if they are worn it should be in conjunction with yellow, red, or black underclothing. The negro with a white suit is, he says, the most contented of beings under a tropical sun, and the white man should imitate him, supplying the missing pigment by black undergarments.

Dr. Louis W. Sambon, writing in *The Journal of Tropical Medicine and Hygiene* for February 15, 1907, on the subject of tropical clothing, comes to the same conclusion. "The use of white clothing for the Tropics," he says, "has been adopted in imitation of native custom, and no doubt it is wise to follow the dictates of a long experience; but those who borrowed this custom overlooked the all-important fact that the native is already fully protected by a natural armor of pigment which is impervious to the harmful actinic rays. Having no reason to fear the chemical rays of the sun, the native dons an ample white robe, which, by reflecting the long heat rays, keeps him comfortably cool." But even the natives do not always wear white, for red, yellow, and brown are really the predominating colors, more especially with regard to the protection of the head and abdomen. White is for comfort, but health demands a lining of pigment.

To avoid the additional weight and thickness of several layers of cloth, Dr. Sambon conceived the idea of a fabric composed of white and colored threads, woven in such a way as to produce a warp or outer surface of white and a woof or inner surface of black, red, or orange. For army use, where a white tunic would be undesirable, he used threads of yellow and blue for the warp and red for the woof, producing a khaki effect externally with a red color-screen for the inner surface. Such a cloth, with a heat-reflecting outer surface and an opaque inner layer, will, he thinks, meet all the requirements of comfort and protection for garments for tropical use.

THE CLINICAL THERMOMETER.

In view of the immense number of thermometric determinations that are being made in medical practice, and of the important deductions drawn from them, the subjects of the accuracy of the instruments employed and of the physiological variations in body temperature certainly deserve more attention than is usually accorded them. Most practitioners probably take it for granted that the thermometers—at least those of the medium and better grades—supplied by the dealers are instruments of precision, yet comparison with a standard thermometer will often reveal a most astonishing degree of inaccuracy. While the fragile nature of the instrument and the vicissitudes of daily use usually preclude any serious inaccuracy due to the changes attending the so-called seasoning of the glass, if a thermometer survives more than a year it should be retested and the necessary corrections noted. Very little consideration also is usually given to the subject of the normal fluctuations of temperature, which are much wider than is commonly realized. In this connection Myers (*Yale Medical Journal*, April, 1907) says that the temperature of the healthy human body undergoes certain variations which, when graphically expressed, take the form of a curve, the essential characteristics of which are an evening fall, with a minimum somewhere between 12 midnight and 6 A.M., and a marked rise in the morning with a maximum between 4 and 6 P.M. The temperature in the course of twenty-four hours may vary through a range of 2° C. (3.6° F.) under perfectly normal conditions. Thus, in observing the late afternoon or early evening temperature, a record might be obtained as high as 38° C. (100.4° F.), or again, the temperature in the early morning might be as low as 36° C. (96.8° F.) under normal conditions. After any muscular exertion, such as a rapid walk to the physician's office, one might expect to observe a temperature as high as 37.5° C. (99.5° F.) in a normal individual. A point which should be much emphasized lies here. Unless a distinctly febrile temperature is observed, there are many factors which must be considered in using body temperature as diagnostic of an abnormal condition. It appears that each person has his own normal body temperature and normal curve of fluctuation, and these must always be taken into consideration if possible in clinical temperature determinations. While the causes of the fluctuations in normal body temperature are incompletely understood, it is known that muscular work, food, and the standing position elevate the body temperature, while inactivity, rest, and possibly fasting, have the reverse effect.

TO PREVENT PREMATURE BURIAL.

The problem of discovering a simple yet reliable sign of death is one that has attracted much interest in France, and several prizes have been offered for its solution. One of these was some years ago awarded to Dr. Icard of Marseilles, who has been a prolific experimenter and writer on the subject, and has even succeeded in inducing the municipal authorities of several cities to give their official sanction to the use of his fluoresceine test. This consists in the subcutaneous injection of a solution of fluoresceine; if circulation of the blood, however sluggish, is still going on, the skin in the course of a few hours becomes intensely yellow and the conjunctiva green. This discoloration is only temporary in the living, and the procedure is not injurious. A somewhat simpler, though perhaps equally dramatic test, is one that he has lately suggested. It is founded on the blackening produced in solutions of lead acetate on contact with sulphuretted hydrogen, and is carried out by writing a few words such as "I am dead" with a solution of the lead salt on a strip of paper. This apparently blank slip is to be rolled up and placed in the nostril of the supposed corpse. It is alleged that before any external evidences of putrefaction can be detected sulphuretted hydrogen is given off from the lungs, and the writing, therefore, becomes visible if death has taken place. Icard proposes that such slips of paper be given to persons reporting deaths at which no physician has been present, with the direction to place them in the nostrils of the deceased. The next day the slips are to be brought back to the proper official, after the dead person has, so to speak, made out his own death certificate. The conception is certainly ingenious and has an attractive touch of the theatrical, but unfortunately doubts have been cast on its reliability. At least the *Edinburgh Medical Journal*

states that in many cases in which the test was applied it failed to give satisfactory results, and in bodies that had been kept for a week or more, and in which other evidences of putrefaction had long appeared, the pieces of lead paper in the nostrils did not show more than the merest trace of discoloration.

Orthostatic Albuminuria.

In connection with Heubner's recently reported case of orthostatic albuminuria with autopsy (Medical Record, February 2, 1907), it is interesting to note a communication of Langstein's in the *Berliner klinische Wochenschrift*, January 28, 1907, referring to the nature of the albuminous bodies to be found in the urine in instances of this peculiar affection. Langstein has found that in all specimens of albuminous urine from patients with orthostatic albuminuria an albuminous body which is precipitated by acetic acid is present. Those cases in which only this body is found are *per se* to be distinguished from cases of chronic nephritis, whereas in the chronic nephritis of children this particular albuminous body is either absent or is present in smaller amounts than the ordinary albumin. For its detection he suggests the following mode of procedure: Two test tubes are filled to the same height with urine, a few drops of dilute acetic acid are added to each, and the tubes are shaken for several minutes. The specimens are then diluted with three or four volumes of water, and to one of them a few drops of potassium ferrocyanide solution are added. On holding the tubes against a black background the presence or absence of the acetic acid albumin in the one tube can be determined and its bulk may be compared with that of the total albumin in the other. The addition of water after acidulating is necessary in order to prevent the precipitation of uric acid from a urine of high specific gravity. The nature of this albuminous body is still uncertain, but it appears to resemble that which von Leube discovered in about two-thirds of a large number of healthy soldiers after moderate exertion.

The Breast Feeding of Infants.

In spite of the efforts of pediatrists to popularize a knowledge of the advantages of breast feeding, there seems to be little doubt that the practice of artificial feeding is becoming more prevalent, instead of the reverse. It is usually assumed that resort to bottle feeding as a matter of mere expediency is a problem to be dealt with primarily among the better classes, but Neumann (*Deutsche medizinische Wochenschrift*, February 21, 1907) shows that in Germany, at least, the tendency is growing among the poorer people as well. He estimates that artificial feeding of infants has increased by about two-thirds in Berlin since 1885 in all classes of the population. In that year, among the families inhabiting one or two rooms, 70 per cent. to 80 per cent. of the mothers could have nursed their infants, and 65 per cent. actually did so. Now, however, about 50 per cent. resort to bottle feeding without sufficient reason, and among the families living in four or more rooms, in 1900 only 30 per cent. of the mothers were found nursing their infants. It is not necessary to rehearse Neumann's list of the reasons that make natural feeding preferable to artificial—they are sufficiently well known to medical men—but the Berlin statistics, even if not directly applicable to conditions in this country, at least should serve as an additional incentive to make every effort to encourage breast feeding.

The Cause of the Odor of Ozena.

It is quite generally acknowledged that the fetor which accompanies ozena is out of proportion to the extent of the lesion, and very little is known of the immediate causes of its production. Frese, who has recently investigated this subject (*Deutsches Archiv für klinische Medicin*, Vol. 86), finds that the odor is of a mixed origin. Chemical analysis of the secretion has shown the presence of a variety of substances which are always found in the process of decomposition of albuminous materials. Chief among these are a number of fatty acids, volatile in character, which constitute the principal offensive substances, and seem to arise from a direct conversion of the neutral fats. The secretion itself is without odor when first formed, but its peculiar constitution renders it immediately liable to decomposition in the presence of microorganisms. Frese finds, however, that the so-called ozena bacillus is unable to institute this process. It was also determined that the foul products arising from a tertiary nasal syphilis are of the same general character as those associated with true ozena.

A New Pupillary Reaction.

An interesting observation has recently been made by Löwy (*Neurologisches Zentralblatt*, 1906, No. 20), with reference to the behavior of the pupils in the presence of local painful areas. He claims that when the pupils are contracted by intense light, the pain elicited by pressure on an organically diseased region will be accompanied by a distinct relaxation of the pupillary ring, whereas that proceeding from a functional lesion is not distinguished by this phenomenon. Löwy believes that this symptom is of value as a differential diagnostic sign in avoiding a confusion between pain of an organic and that of a psychic origin, such as is associated with hysteria. Likewise in traumatic neuroses it may serve to show whether the tenderness elicited at the site of the injury is due to the trauma itself or is of psychic origin.

News of the Week.

A Chair of Hydrotherapy.—Dr. Simon Baruch has been made Professor of Hydrotherapy in the medical department of Columbia University, and a hydrotherapeutic department is to be established in the Vanderbilt Clinic. In this department students in small sections will receive practical instruction in hydrotherapy, the course being an obligatory one, and the final examinations will include this subject. It is not necessary to point out what a valuable innovation this will be.

Iroquois Memorial Hospital in Chicago.—The project recently submitted to the County Board for the establishment somewhere downtown of an institution to be known by this name was recently unanimously indorsed by the Council of the Chicago Medical Society. Dr. George W. Webster, President of the Chicago Medical Society, supported the resolution of indorsement and spoke in favor of its adoption. In return for the use of its name, the Iroquois

Memorial Association agrees to contribute a fund of $25,000 already collected for that purpose, and such other sums as may be raised by members of the Association.

Results of Examinations for Internes.—Of ninety-six students recently examined at the Cook County Hospital, forty-four students passed the required grade for interneship. Fifteen of the successful applicants will be appointed internes in June.

Work of the Antismoke League.—This organization, acting in conjunction with the Health Department, during the last year caused 193 arrests for violations of Section 26 of the Sanitary Code which provides that no smoke, cinders, or noxious gases shall be allowed to escape from chimneys, etc. Of the persons arrested, 132 were convicted, 36 were discharged, and at the end of the year 25 cases were pending. The effect of this activity on the part of the League is shown in the record of convictions for this offense in previous years: 1902, 17 convictions; 1903, 45 convictions; 1904, none; 1905, none; 1906, 132 convictions.

Smallpox.—The Russian steamer *Petersburg*, which arrived last week from Libau and Rotterdam with 981 steerage passengers, was detained at quarantine because of a case of smallpox in the steerage. The patient, who had been ill eight days, was transferred to the Kingston Avenue Hospital, and 150 passengers who occupied the same compartment were sent to Hoffman Island for observation. The steamer was disinfected. Owing to the occurrence of nine cases of smallpox in Chelsea, Mass., three of the public schools of the city have been closed as a precautionary measure.

Yellow Fever.—In the port of Kingston, Jamaica, a rigid quarantine has been established against vessels from Cuba and Trinidad, where yellow fever has appeared.

Child Labor Bill.—The Page child labor bill was passed by the Assembly at Albany on April 9. Originally the bill provided that children could be employed between the hours of 7 A.M. and 7 P.M., but in the Assembly it was amended, and the bill passed prohibits the employment of children except between the hours of 8 A.M. and 5 P.M.

To Control Expert Testimony.—A bill has been introduced in the Assembly at Albany which is intended to restrict the scope of expert testimony in regard to the mental condition of defendants in murder trials. The bill provides that the expert must have actually examined the person concerning whose mental state he is to testify, and also provides against the abuse of the hypothetical question.

Appropriations for State Institutions.—Among bills recently signed by Governor Hughes are those providing for appropriations for State Hospitals as follows: Binghamton Hospital, $50,000 for new dining room and kitchen, $81,000 for nurses' home, and $7,500 for water supply; Middletown Hospital, $81,000 for nurses' home; Hudson River Hospital, $81,000 for nurses' home; Kings Park Hospital, $62,000 for new laundry.

New Home for Incurables.—Mrs. Henrietta M. Parker of this city has filed the plans for the erection of the Parker Home for Incurables, at Eastern avenue and Landing road, New Brunswick, N. J., which she intends to build in memory of her husband, the late Francis Parker of this city. The building will have a basement, two hospital wards, and thirty-one rooms, which will include sun parlors, offices, nurses' rooms, baths, living rooms, etc. The building will be of brick and marble and will command a magnificent view of the Raritan and surrounding country. It is expected that it will be ready for use November 1.

Professor William Keen of Philadelphia, a delegate to the German Surgical Congress in Berlin, has been elected an honorary member of the German Surgical Society, and was one of five delegates received at a special audience by the German Empress.

Dr. P. F. Chambers has been appointed Clinical Professor of Gynecology in the medical department of Columbia University.

An International Congress of Psychiatry, Neurology, Psychology, and the Care of the Insane is to be held in Amsterdam on September 2 to 7, 1907. It will differ from the preceding congresses that have been held in Brussels, Paris, Antwerp, and Milan, in having a section of experimental psychology.

International Medical Association for the Suppression of War.—Dr. J. Rivière, 25 Rue des Mathurins, Opèra, Paris, the president of this society, invites correspondence from those interested in the subject relative to an international congress of physicians to be held in Paris during the year 1908.

Exhibit of Colored Physicians at Jamestown.—In order to demonstrate the progress of the negro race in medical education, an emergency hospital, under the direction of colored physicians and attended by colored nurses, is to form part of the negro exhibit at the Jamestown Exposition. The hospital building will include an exhibition room, in which a display of hospital records and supplies, pathological and bacteriological specimens, etc., will be shown. The following committee is in charge of the medical exhibit: Dr. A. M. Curtis, Washington, D. C.; Dr. George C. Hall, Chicago, Ill.; Dr. R. F. Boyd, Nashville, Tenn.; Dr. W. A. Warfield, Washington, D. C., and Dr. Joseph J. France, Portsmouth, Va.

Springfield (Mass.) Academy of Medicine.—This organization received its charter on April 9, and was formally inaugurated. Officers were elected as follows: *President*, Dr. W. A. Smith of Springfield; *First Vice-President*, Dr. John A. Houston of Northampton; *Second Vice-President*, Dr. R. H. Seelye; *Secretary*, Dr. Joel I. Butler; *Treasurer*, Dr. H. W. Van Allen. There are already more than 200 names on the charter list, representing Vermont, New Hampshire, and Western Massachusetts as far east as Worcester, and the list will be left open for the next thirty days. It is planned ultimately to erect a building for the academy, with assembly hall, library, etc.

Dr. J. William White, John Rhea Barton Professor of Surgery in the University of Pennsylvania, and Senior Surgeon to the University Hospital, has been appointed advisory surgeon to the Pennsylvania Railroad Company.

Transfer of Insane Patients.—In consequence of a fire in one of the buildings of the State Hospital for the Insane at Norristown, Pa., one hundred male patients have been transferred temporarily to the Insane Department of the Philadelphia Hospital. Plans are already under consideration for the reconstruction of the burned building, or it may be decided to utilize a sum of $416,000 appropriated by the present Legislature for the purpose of erecting an entirely new series of buildings.

For the Suppression of Cerebrospinal Meningitis.—In an effort to prevent the further spread of cerebrospinal meningitis, a number of cases of which have recently been observed in the city of

Philadelphia, Dr. A. C. Abbott, Chief of the Health Bureau, has ordered a house-to-house inspection in the lower wards of the city. In addition, the co-operation of the Department of Public Works will be asked for the purpose of making a thorough and careful inspection of the streets and alleys in the section named.

Bloodshed in Italy.—Recently published statistics show that in Italy there has been a decrease in the number of persons killed by violence, which is attributed mainly to the progress of surgery, however, for there has been an increase in the number of wounded. During the year 1903, 3,106 persons were murdered and 93,768 wounded, and it is calculated that in a period of twenty-seven years 97,000 persons met violent deaths and 2,000,000 have been wounded. The record for criminality is held by Sicily, where the proportion of murders reaches 42 to every 100,000 inhabitants in the province of Girgenti. The proportion decreases in other provinces and falls to 25 for every 100,000 in Naples. It still further decreases considerably in northern Italy, where, at Bergamo, there is only one murder for every 100,000 persons.

Women's Medical Society of New York State.—An organization having this title was formed in Rochester on March 11. On the occasion of the seventy-eighth birthday of Dr. Sarah R. Adamson Dolley of Rochester, the Blackwell Medical Society of Rochester, The Physicians' League of Buffalo, The Women's Medical Association of New York City, and The Dr. Cordelia A. Greene Society of Castile, affiliated and invited the women physicians of the State to join them at a banquet, the new society being then organized. The officers are as follows: *Honorary President*, Dr. Elizabeth Blackwell of Hastings, England; *President*, Dr. Sarah R. Adamson Dolley of Rochester, N. Y.; *First Vice-President*, Dr. Electa B. Whipple of Buffalo, N. Y.; *Second Vice-President*, Dr. Mary H. Cotton of New York City; *Third Vice-President*, Dr. Mary Theresa Greene of Castile, N. Y.; *Secretary*, Dr. Eveline P. Ballintine of Rochester, N. Y.; *Treasurer*, Dr. M. May Allen of Rochester, N. Y.

Northern Medical Association, Philadelphia.—At the annual dinner held April 10, toasts were responded to as follows: "The Anamolies and Curiosities of Medicine," by Dr. Walter L. Pyle; "Medical Legislation," by Dr. Henry Beates; "Modern Surgery," by Dr. John B. Deaver; "The Ladies," by Dr. Charles P. Noble, and "Some Reminiscences of Philadelphia's Medical Teachers and Practitioners," by Dr. Chas. K. Mills.

Officers of Tennessee State Medical Association.—At the seventy-fourth annual session of this Association held at Nashville, April 9, 10, and 11, the following officers were elected for the ensuing year: *President*, Dr. A. B. Cooke of Nashville; *Vice-Presidents*, Dr. R. E. Fort of Nashville, Dr. Chas. P. McNabb of Knoxville, Dr. R. W. Tate of Bolivar; *Secretary*, Dr. Geo. H. Price of Nashville, reelected; *Treasurer*, Dr. W. C. Bilbro of Murfreesboro, reelected; *Delegate to the American Medical Association*, Dr. S. W. Woodyard, Greenville; *Alternate Delegate*, Dr. C. E. Ristine, Knoxville. Knoxville was selected as the place for holding the next annual session.

Asotin County (Wash.) Medical Association.—At a meeting of this organization held in Clarkston on April 1, officers were elected as follows: *President*, Dr. L. W. Woodruff of Asotin; *Vice-President*, Dr. P. W. Johnson of Clarkston; *Secretary*, Dr. I. U. Temple of Clarkston; *Treasurer*, Dr. S. D. Brazeau of Asotin.

Association of Railway Surgeons.—The surgeons of the T. P. and W. Railway met in Peoria, Ill., on April 1 and formed a society to be known as the T. P. and W. Railway Surgeons' Association.

Davidson County (N. H.) Medical Society.—Officers were elected as follows at the meeting of this society held on April 2 in Newmarket: *President*, Dr. Marvin M. Cullom; *Vice-President*, Dr. Rufus E. Fort; *Secretary and Treasurer*, Dr. Holland M. Tigert, reelected.

New London County (Conn.) Medical Society.—At the annual meeting of this society held in New London on April 4, officers were elected as follows: *President*, Dr. Harry M. Lee of New London; *Vice-President*, Dr. M. E. Fox of Montville; *Clerk*, Dr. E. C. Chipman of New London.

Garland County (Ark.) Medical Society.—At the recent meeting of this society, officers were elected as follows: *President*, Dr. O. H. Burton; *Vice-President*, Dr. F. H. Tribble; *Secretary*, Dr. M. F. Mount; *Treasurer*, Dr. J. S. Horner.

Hartford County (Conn.) Medical Society.—The one hundred and fifteenth annual meeting of this society was held in Hartford on April 2. The following were elected as officers for the ensuing year: *President*, Dr. Edward K. Root of Hartford; *Vice-President*, Dr. Charles M. Wooster of Tariffville; *Secretary*, Dr. Frederick B. Willard of Hartford.

In Honor of Dr. Hodgen.—Under the auspices of the St. Louis Medical Society memorial exercises will be held in that city on April 28, in commemoration of the twenty-fifth anniversary of the death of Dr. John T. Hodgen. A generation ago Dr. Hodgen was one of the prominent figures in American medical life, and he served at different times as president of the American Medical Association, the Missouri State Medical Society, and the St. Louis Medical Society.

In Memory of Möbius.—A committee of German physicians, of which Dr. Curt Rheinhardt of Leipzig is the secretary, has been organized for the purpose of collecting a fund to be used to establish a yearly prize to be given as a memorial to the late Dr. Paul J. Möbius of Leipzig. It is planned alternately in one year to award the prize for an original paper to be published in the *Psychiatrisch-Neurologische Wochenschrift*, and in the next for the best article on a psychiatric or neurological subject to have been published in the two preceding years.

Obituary Notes.—Dr. Dicia H. Baker of Birmingham, Ala., died on April 4, at the age of forty-four years. She was a native of Tennessee and was graduated from the Laura Memorial College of Cincinnati. Dr. Baker was the first woman to be graduated in Pharmacy from the Vanderbilt University at Nashville. She had practised in Birmingham about eight years.

Dr. A. F. Ritchie of Duluth, Minn., died on April 1 at Mt. Clemens. He was born in 1854, and was graduated from McGill University in 1876. After several years of post-graduate work in Europe he began practice in Duluth, where he had resided ever since.

Dr. Henry W. Spillman of Edgerton, Wis., died on April 2 at the age of eighty-seven years. For the past twenty-seven years he had practised in Edgerton.

Dr. Frank Riley of St. Joseph, Mo., died at the age of forty-eight years, of paralysis, on April 1, after several years of illness. Dr. Riley was a native of Illinois, and received his early education in the

university of that State. In 1882 he was graduated from St. Joseph Medical College, and after practising for some years in Bolckow and in Aurora he removed to St. Joseph.

Dr. CHARLES B. COMBE of Brownsville, Tex., died on March 31 at the age of seventy years. He was born in Davis County, Ky., and received his medical degree from Jefferson Medical College in Philadelphia in 1858. After a year in the Charity Hospital of New Orleans he located in Brownsville, and served during the Civil War as surgeon on the staff of General Magruder. At various times he was president of the Brownsville and Matamoras Medical Association, president of the district Medical Examination Board, and State Health Officer.

Dr. HENRY P. EVARTS of Grand Rapids, Mich., died on April 1 at the age of sixty-two years. Dr. Evarts was born in Madison, O., and was graduated from the Cincinnati Medical College in 1870. He had practised in Grand Rapids for over eighteen years.

Dr. LAWRENCE BERRY of Athens, Ga., died in Philadelphia on March 30. He was a recent graduate of the Jefferson Medical College.

Dr. JOHN EDGAR MARCH of St. John, N. B., died suddenly of cerebral hemorrhage on April 3, at the age of forty-seven years. He was graduated from the Bellevue Hospital Medical School and practised for some years in Hampton, N. B. He then removed to St. John, and in 1894 was appointed Quarantine Officer of the Port, a position he had held since that date.

Dr. GEORGE W. BIGGERS of La Grande, Ore., the father of Dr. George L. Biggers of that city, died on March 29 at the age of seventy-one years. He had practised in Oregon since 1848.

Dr. W. H. HARRIS of Belleville, Mo., died on April 3 at the age of sixty-five years. He was born in Meridian, Ala., and had practised in Belleville since 1884.

Dr. JUSTIN L. BARNES of this city, died on April 13 at the age of forty-seven years. He was graduated from Cornell University in 1881, and four years later received his medical degree from the New York University Medical School. He devoted himself to ophthalmology, and for many years had been connected with the Manhattan Eye and Ear Hospital. He was born in Middletown, Conn.

Dr. HENRY DEWITT JOY of West Brighton died of apoplexy on April 15. Dr. Joy was born in this city in 1841. He was graduated from Williams College and from the College of Physicians and Surgeons. For many years he was chief surgeon of the Pacific Steamship Line, and in 1900 he became consulting physician at the Sailors' Snug Harbor on Staten Island.

Correspondence.

JAPANESE LACQUER DERMATITIS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In your issue of January 12, 1907, is an abstract from an article in the *Medical Review of Reviews* by A. Hadden on Poison Ivy. I have not access to the original, but the abstract reads:

"The nature of this poison has not yet been clearly defined. On the leaf and stem of this vine (*Rhus toxicodendron*) there is a fine hairy formation on both the upper and lower sides. To this is attributed the chief agency of communication of the poison. Both flies and mosquitos are doubtless the carriers of these small hairy particles as well as of the sap to many sensitive skins."

Much of the Japanese black lacquer work is made with the sap of an allied plant (*Rhus vernicifera*) and a case has come under my care of severe rhus poisoning in a very susceptible individual from handling a box made of this material. It was not the patient's first experience of the sort and I have heard of other similar cases from the same cause. This would indicate that the hairs are at least not necessary to the conveyance of the poison, which appears to be contained in the sap and to retain activity after prolonged drying.

MANLEY F. GATES, Surgeon, United States Navy.

OUR LONDON LETTER.

(From Our Special Correspondent.)

INSANITY—SPIROCHETES OF RELAPSING AND TICK FEVERS—TYPHOID INOCULATION IN THE ARMY—MALARIA AND TROPICAL DISEASES—A QUASI-DIPHTHERIA BACILLUS—A TYPHOID BACILLUS FROM A SINUS—TUBERCULOSIS OF TESTIS—HOSPITAL FUNDS.

LONDON, March 29, 1907.

IN his concluding Lumleian lecture Dr. Savage dealt with alcoholism and influenza as causes of insanity. In respect to the first his conclusions did not quite accord with the common view, and he remarked that we have no proof that the abolition of alcoholism would diminish insanity. The recent increase bore no relation to the consumption of alcohol, for people were more temperate than formerly. According to the special report of the Irish Commissioners, excessive tea drinking should not be overlooked as a possible cause. At the same time he was obliged to admit that alcohol reduces the nutrition of brain and may be called a nerve toxin, and often thereby causes delusions, leading in bad cases to brain degeneration and premature senility. But a more potent factor, he held, was influenza. Some twenty-five years ago he had pointed out that this disease predisposed to nervous and mental disorders, but he was then scoffed at and told he saw insanity in everything—even influenza. His view was now widely accepted and he argued that influenza was a more active cause of insanity than all others. It produced insomnia and neuralgia and upset digestion, and so the nutrition of the brain was impeded and melancholia, mania, or dementia might be started. Acute insanity sometimes was seen in the early stage of influenza, but there was no special form of influenzal insanity, and though the disease often caused mental derangement it might sometimes exercise a modifying influence on those already insane. Dr. Savage believes a special receiving hospital in London such as Glasgow has would do good by sifting out acute and curable cases and saving them from being sent to asylums.

Sir K. M. Mackenzie, secretary to the Lord Chancellor, gave evidence on Wednesday before the Royal Commission on the feeble-minded. He had great confidence in the authorities in lunacy and a very serious question had arisen as to whether the Lunacy Commissioners were overworked. If the present system remained unchanged, some addition to their numbers should be made. He held that the Lunacy Commissioners should remain, in fact and in name, an independent body, and not become absorbed in a Government department. Lunacy was not a matter of policy, to be assigned to the Home Office, nor of sanitation, to pass under the local Government board. If it were classified with anything else it was more akin to the care of infants and the wards of court. But there were objections to transferring them to chancery.

Lieutenant-Colonel W. B. Leishman submitted some interesting observations on the spirochetes of relapsing fever and tick fever to the last meeting of the Pathological Society. His material included films from Austria, Aden, and India, as well as living organisms. He studied the development in white mice and found them equally fatal, contrary to the experience of others. The virulence was increased by passage, as shown by earlier appearance in the blood and more rapid multiplication. He could not confirm Novy and Knapp's description of morphological differences between the spirochetes of tick fever, European relapsing fever and Indian relapsing fever. He had found wide variations in each case, and they seemed to him due to such factors as the vitality of the organism, stage of the disease, method of fixation, etc. From the work of others he had no doubt of the specific difference between the spirochetes of tick and relapsing fevers. But further work seemed necessary to show if there were varieties of relapsing fever. Novy and Knapp consider these spirochetes to be true bacteria, but this view was not fully accepted by Colonel Leishman. He had not been able to demonstrate flagella in either, but he had observed the structure which Schaudinn considered was an undulating membrane in the organism of relapsing fever. This, as well as living organisms, were shown in a microscopical demonstration which followed the paper.

The progress of antityphoid inoculation in the army since the method was resumed on the recommendation of a committee appointed by the Army Council to investigate it, was described at the same meeting by Lieutenant-Colonel Leishman. Lectures are given to all drafts going on foreign service, and as far as possible the inoculations are carried out before embarkation, though sometimes the second is done on board—the vaccine being placed on every transport. Inoculation is also being widely tried in India and elsewhere, 20,000 doses of vaccine having been issued from the Royal Army Medical College during the last twelve months. Colonel Leishman and his colleagues have also carried on research work as to the method at the college without interruption, and he explained the methods of preparing and standardizing the vaccines. These had been prepared from typhoid bacteria killed at different temperatures by different chemicals, by desiccation, etc. Their several effects were tested on animals. In some instances where the results seemed promising similar tests were made on man. In the light of these researches the vaccine at present in use was obtained by a modification of Sir A. E. Wright's process. The bacteria were still killed by heat, but the temperature had been reduced to the minimum which would insure death in one hour, 53° C. The deleterious effects of higher temperatures had been shown during the experiments and it was suggested that some comparatively inferior results may have been due to overheating. The value of inoculation was seen in the case of a regiment which had been exposed to a severe epidemic of enteric. Out of a strength of 509 officers and men, 147 had been inoculated with the modified vaccine. There were 62 cases of enteric, with 11 deaths, all among the uninoculated, except 2, both of whom had declined inoculation, but both recovered.

We have had a good supply of contributions respecting malaria lately. I gave you some notice of a lecture by Prof. Ronald Ross in my letter of the 8th inst. and may add further examples. Dr. Lloyd Roberts of Liverpool read a paper to the Institute based on 124 consecutive cases treated in his tropical wards at the Southern Hospital. A lantern demonstration was given and the diagnosis between malaria and some other diseases dealt with. Dr. W. Canter suggested that it was time to discard the word malaria, which was a relic of the superstition about bad air He held the chief problems demanding solution were: (1) The occurrence of attacks years after leaving infected areas; (2) apparent immunity of exceptional individuals after repeated bites; (3) impossibility of employing quinine in some cases. He further said persistent vomiting sometimes rendered it necessary to give the quinine per rectum or subcutaneously. For coma he found the best treatment was blistering the shaven scalp, unless the temperature was very high, when cold baths were required in addition. In some chronic cachectic cases with acute exacerbations he had found Warburg's tincture useful if quinine could not be borne.

Major H. W. Grattan has read a paper at the Pathological Society on "blackwater fever," as observed in Sierra Leone. He said that in eight out of ten cases quinine had been taken before the onset of blackwater. Malarial parasites were found in the peripheral blood of 36 per cent. after the onset. The *Ankylostomum duodenale* was found in 50 per cent. The fall in hemoglobin and red cells was very great and absolute polynuclear leucocytosis was noted. No malarial parasites or pigment were found in the organs after death. He held the disease to be malarial because there was a previous history of malaria in every case, and the parasite was found in the blood in 36 per cent. of cases. Further, his opinion was that the disease was due to a special form of malarial parasite allied to, but distinct from, that of malignant tertian. He showed specimens of blood films containing parasites and charts illustrating the destruction and regeneration of the red cells and the hemoglobin.

The new society for promoting the study of tropical diseases may now be considered as successfully established. This "Society of Tropical Medicine and Hygiene" met at the College of Physicians on the 15th and completed its organization. The promoters hope to have an extensive membership, and as many of the most ardent workers reside abroad it will then be almost international in its scope.

Prof. Ronald Ross has to present in the Autumn a report to the International Congress of Hygiene at Berlin on the progress of antimalarial measures in British possessions and, if possible, in America. Let me ask the support on his behalf of those engaged in this campaign. He will be thankful for statements of the areas and districts dealt with, the exact nature of the measures employed, and any facts bearing on their results, addressed to him at the University of Liverpool.

Major W. S. Harrison showed the society a bacillus which microscopically resembled that of diphtheria. It was isolated from an old case of chronic suppuration of the middle ear. The organism produced involution forms very like diphtheria bacilli in agar. The differences in cultural reactions were described. Major Harrison also exhibited a typhoid bacillus isolated a year after typhoid fever from a sinus which followed a post-typhoid abscess. This organism formed long, involuted strings, like typhoid cultures on malachite green media; it gave all the cultural character of typhoid bacilli and was agglutinated by an antityphoid serum. The patient's serum agglutinated other strains of typhoid bacilli in 1 to 200 to 1 to 400, and his own strain in 1 to 1,000; its phagocytic ratio was two to four times as great for other strains and forty-six times greater for his own than normal. It was very resistant to phagocytosis in normal serum. It seems difficult to account for the persistence of the organism in the body of a patient whose serum had such a high phagocytic ratio for typhoid bacilli.

Tuberculosis of the testis is so rare in infants that you may be interested in a paper on the subject read at the Children's Society by Mr. Russell Howard. He found the percentage compared with all surgical cases in the London Hospital during ten years had been .07. In adults the percentage was .33. The disease is primary in the epididymus, spreading thence to the body of the testis. The vesiculæ seminales and prostate are very rarely affected. The left testis is most often attacked, the undescended testis seldom. Hydrocele occurred in a third of the cases. The diagnosis from syphilis is difficult and chiefly rests on indirect evidence and the effects of treatment. Tuberculous peritonitis is a rather frequent complication. If treatment be without effect and only one testis affected, it may be removed without bad effect; but if both be involved, ablation would only be justifiable as a last resource on account of the impairment of bodily and mental vigor produced.

The thirty-third annual report of the Hospital Saturday Fund records steady progress. The income in 1906 was £26,460, as against £25,930 in 1905. The board approved a distribution of £23,898 among 205 institutions.

The Birmingham fund is the next largest to London, for last year its collection exceeded £19,000, and this year it is hoped still more will be raised. The other Saturday funds amounted to £10,981 at Leicester, £10,279 at Leeds, £8,276 at Liverpool, £4,608 at Manchester.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

FOURTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION—A SPIROCHETE IN YAWS—CESAREAN SECTION UNDER DIFFICULTIES—TYPHOID FEVER—HAWAIIAN FEVER—X-RAY TREATMENT OF LEPROSY—PERSONAL.

MANILA, P. I., February 16, 1907.

THE fourth annual meeting of the Philippine Islands Medical Association will take place in Manila from February 27 to March 2, sessions being held daily during that period. An interesting program has been prepared. Among the papers to be read will be "The Pathologically Active Constituents of Some Philippine Medicinal Plants, Arrow Poisons, and Fish Poisons," by Dr. R. F. Bacon of the Bureau of Science. Another paper, entitled "The Transmission of Leprosy to Apes," by Moses T. Clegg of the Bureau of Science. Another, "The Fate of the Agglutinins upon Filtering an Immune Serum," by Dr. R. T. Edwards. Another, entitled "Observations on the Etiology of Dengue Fever," by Dr. Percy M. Ashburn, Assistant Surgeon U. S. Army, and 1st Lieut. C. F. Craig, U. S. Army, both members of the Army Medical Board for Tropical Diseases. It is understood that some new data upon the transmission of this disease will be presented. Another paper, "A Summary of Experimental Work on Plague Immunity," by Dr. R. P. Strong.

A number of distinguished foreign guests have accepted invitations to be present. Among these will be Dr. J. M. Atkinson, the Honorable Principal Civil Medical Officer of Hongkong; Dr. W. V. M. Koch, Medical Officer in Charge of Infectious Disease Hospitals, Hongkong; Dr. Sia Tien Pao, Delegate from His Imperial Chinese Majesty's Government; Dr. Kannosuke Myajina, Delegate from His Imperial Japanese Majesty's Government.

The regular monthly meeting of the Manila Medical Society was held at the St. Paul's Hospital, February 4, 1907, at 8:30 P.M. Dr. Ashburn of the Army Board of

Tropical Diseases showed a number of interesting microscopical specimens. Among others were some spirochetes, which were taken from some cases of yaws found in Manila. From microscopical examination, the organisms could not be distinguished from the ordinary *Spirochæta pallida* of syphilis, and they corresponded very closely to the spirochetes described by Celli of Colombo.

A paper prepared by Dr. Frank T. Woodbury, Captain and Assistant Surgeon U. S. Army, upon "Performing Cesarean Section Under Difficulties" was read before the society. It was another practical demonstration of what may be accomplished when the rudiments of aseptic surgery are observed, even though the operation is performed in the interior of a sparsely inhabited tropical island, without proper instruments or surroundings usually deemed necessary in such cases.

Within the past few weeks about ten cases of typhoid fever have been reported in the city of Manila, which, upon investigation, all proved to be positive to the Widal reaction. An investigation is now being made with the hope of ascertaining the source from which the infection in these cases was derived. The investigation, so far, shows that long before the American occupation, typhoid cases were found, from time to time, but there did not seem to be any tendency for the disease to spread. On account of the very few cases that occur, the water obtained from the city mains can almost be dismissed from consideration. It is hoped that this inquiry will throw some light upon the fact as to whether typhoid does not spread as rapidly in tropical countries as in temperate ones, on account of some climatic condition, or whether it is perhaps due to the fact that the means or vehicles for the transmission of the disease are not present. This latter view would appear tenable, especially in Manila, where, up to a few years ago, very little fresh milk, oysters, or other shellfish likely to become infected have been used, but both are now coming into general use, and it may possibly be that the present increase in typhoid fever in Manila can be attributed to that fact.

During the past few weeks there have also been a number of cases of obscure fevers observed, which in their general symptomatology resembled somewhat the so-called Hawaiian fever, which has been described as occurring in those islands. The onset is much more rapid than in typhoid fever, the prodromes lasting a week or less and are generally characterized by general malaise, pain in the joints and limbs, which lasts about a day, no headache, moderate pain in and behind the eyes; bronchitis often occurs after the onset of the disease. The digestive disturbances are not very marked, the appetite, in most cases, remaining fair. The fever rises gradually for the first week to about 104, and then drops within forty-eight hours to normal, leaving the patient in much the same exhausted condition as found in certain forms of influenza, in the United States. In some of the cases the disease appears to localize itself in the larynx and the upper air passages, causing intense congestion, and sometimes complete loss of voice for about a week. There are no rose spots, occasionally there is nose bleed; the spleen appears not to be enlarged. Bacteriologically the condition does not correspond to para-typhoid. Careful examinations have failed to show any malarial organisms or other blood parasites and the Widal reaction is absent, while the diazo is present. The occurrence of these obscure fevers again emphasizes in a forcible manner the necessity and advisability of undertaking additional research work in order that the etiology and pathology of these unusual diseases may be better understood. Of the twelve patients referred to herein, two died, but it was not possible to obtain an autopsy.

One of the lepers, who has been mentioned heretofore, from time to time, as having undergone treatment by the *x*-ray at the San Lazaro Hospital, and having once been apparently cured and remained so for a period of nine months, after which time he again showed leper bacilli in skin scrapings, has been under *x*-ray treatment for the past two months, and is now again, so far as can be determined by microscopical examination, entirely free from the disease. It is the intention, this time, to continue the treatment at intervals for at least a year or more, after which it is proposed to treat him at intervals of three months. The general principles upon which the treatment is to be applied this time will correspond closely to the method of treating syphilis with mercury, which is recommended by many standard syphilographers.

Passed Assistant Surgeon Carroll Fox of the Public Health and Marine Hospital Service, who has been on duty as Quarantine Officer in the Philippine Islands for the past four years, during three of which he was stationed at the port of Cebu, has been relieved and returned to the United States.

Passed Assistant Surgeon Thomas B. McClintic, and Assistant Surgeons W. F. McKeon and Joseph Pettyjohn, of the Public Health and Marine Hospital Service, in compliance with orders of the Surgeon-General, have arrived in the Philippines and been placed on duty as quarantine officers at ports of entry.

Progress of Medical Science.

New York Medical Journal, April 6, 1907.

Endemic Neuritis.—In this issue J. M. Wheate concludes an article on endemic neuritis, contributing some observations hitherto unpublished, and reviewing recent researches and opinions of recent investigations by various authorities. His own observations were made in the Philippines in connection with his army medical service. His general conclusions are as follows: (1) Beriberi is an acute infectious disease, transmitted by direct infection, probably always through a skin abrasion upon some vulnerable part of the body. (2) The specific organism causing the disease is an exceedingly small bacillus, usually seen in pairs but not encapsulated, and is found in the cerebrospinal fluid and blood only during the acute or inflammatory stage of the disease, after which time it rapidly disappears from these tissues. (3) The favorite habitat is virgin soil protected from sunlight. It is a slightly facultative anaërobin and not very viable, being speedily killed by exposure to sunlight as demonstrated by bacteriological test and by clinical experience. (4) The former classification of the disease as beriberi hydrops and beriberi atrophica is erroneous. There is but one form of beriberi, which is characterized by three stages: First, the stage of invasion; second, the stage of exudation, beginning in the cord and following by toxic motor and sensory paralysis of varying extent, which in typical cases proceeds to the third, or the stage of compensation, in which the disappearance of the bacilli and the toxic stage results in the rapid (usually) disappearance of the dropsy in cases in which softening and dilatation have not progressed to the degree of permanent loss of compensatory action. (5) The degenerative cord and nerve lesion is long present in all moderately severe cases, resembling the lesion in tabes in this particular, and even though the heart lesion appears to have subsided while the patient is leading the inactive life of a convalescent, the damage to function is permanent. This explains the numerous cases of sudden and unaccountable death in patients leaving hospital apparently cured, as reported by many observers with extensive hospital experience. (6) That a toxin or toxalbumin should be isolated is the rational conclusion, and that an antitoxin curative in the period of germ activity and before degenerative change has taken place is the inevitable reward for properly directed effort.

Spondylose Rhizomelique.—A further contribution to the study of this malady is made by A. Gordon, who presents the clinical histories of two personal cases. In the first case there was rigidity of the lower part of the spine and a kyphosis at the same level. Symptoms of involvement of the spinal cord and of the roots were very evident. A rheumatic family or personal history was wanting, while the general condition of the patient had been stationary from the onset of the disease. In the second case there was a marked rigidity of the lower spine and an ankylosis of the large proximal joints of the lower limbs. Pain was present in both extremities and in the back. Cord involvement was also evident, and in contrast with the first case in which all the reflexes were abolished, they were here exaggerated, pointing to an involvement of a different tract in the cord. Rheumatic history was wanting. The essential pathological feature of this curious affection seems to be an ossification of the periarticular ligaments of the spine and hypertrophy of the articular processes which come into immediate contact with each other after the last vestige of the cartilages has disappeared. According to the author, the disease can hardly be considered as a pathological entity. It is probably not of rheumatic origin. Two types of the affection have been described. In one there is ankylosis of the cervical spine with meningomyelitis. In the other there is spinal ankylosis and ankylosis of the large proximal joints of the lower extremities without cord involvement. The author states that the idea of uniting all forms of spondylosis in one cannot reasonably be accepted, and the term "spondylosis" should be reserved only for the purpose of designating the symptom, rigidity of the spine, and the original name given by Bechterew, Strümpell, and Marie be abandoned. Spondylosis is

only a symptom of a more complicated disease, and the frequent involvement of the cord shows that the etiological factor is of a more complicated order than one may suppose.

Eructations in Heart Patients.—This question is considered by F. Schwyzer, who finds the condition more common in old cardio- and arteriosclerotic patients. The presence of gas in the stomach may be the most troublesome symptom complained of. The gas arises first of all from fermentation, and the impaired abdominal circulation prevents the gas from being taken up by the blood and carried to the lungs for exhalation. It may also be true that defective abdominal pressure is operative in old persons whose abdominal muscles are getting flabby. So also some of these patients seem to swallow considerable ordinary air. Irregularities in the intestinal circulation lead to abnormal condition of the gastrointestinal fluids. The result of insufficient circulation in the intestinal tract brings on a condition which we may call intestinal dyspnea. Locally diminished blood or oxygen supply of the gastric or intestinal wall causes peristalsis or contraction, until the smooth muscular fibers become exhausted and relax. Thus the stomach reacts with contraction on momentary insufficiency of its circulation, while the heart under the same conditions causes more or less intense pain and oppression. If the gastric circulation is seriously insufficient, the stomach will react very soon after a moderate quantity of food has been taken. The patient will feel the pressure in the stomach, he will expel some gas, and his appetite will be satisfied too soon. If the circulation in the gastric wall is fairly sufficient, the patient will be able to take quite a large meal; he will eat as much as the stomach will hold, and then when gastric fermentation sets in and begins to distend the stomach still more, the border line of sufficiency in the circulation will be passed and gastric symptoms will show themselves. Still another causative factor may be exercise during the height of digestion.

Journal of the American Medical Association, April 13, 1907.

Internal Hydrocephalus.—W. J. Spiller and A. R. Allen discuss the causes of internal hydrocephalus, reviewing the literature, and remark that while the occlusion of the aqueduct of Sylvius is not infrequently mentioned as an etiological factor in the text-books, it is rare to find references to actual cases of such occurrence. They take the opportunity, therefore, to report a case in which the condition was induced by a probably congenital, almost total occlusion of the aqueduct. The subject was an elderly woman who was supposed to have been born hydrocephalic, but in spite of this and of an epilepsy that had lasted for years she had lived to the advanced age of sixty-two, and retained her faculties fairly well-developed. The aqueduct, while almost entirely occluded, was well-lined throughout by a layer of ependymal cells which would not be the case had its occlusion been due to neuroglia proliferation, as in a previous case reported by Spiller. This, and the long continuance of the condition through the patient's whole life, indicates the congenital nature of the obstruction.

The Pathology of Paralysis Agitans.—C. D. Camp, after giving a review of the literature of the pathological findings in the nervous system in paralysis agitans, reports the results of his examination of fourteen cases, in eight of which he was able to study the peripheral nerves and muscles, and in two the ductless glands also. The most constant lesion in the nerve centers was a fibrosis of the capillary blood-vessels of the spinal cord, which by rendering them more prominent, caused them to appear more numerous. The posterior and lateral column regions seemed most involved. There was no degeneration of nerve fibers of the cord in any case, and in only two cases was this observed in the peripheral nerves with the Weigert hematoxylin stain; in two others there was a swelling of the myelin sheaths, accompanied in one case by swelling of the axis cylinders. There was considerable pigmentation of the Betz cells in the paracentral lobule, but in only two cases were distinctly degenerated cells observed. He discusses the various theories of the disease, and thinks that many of the pathological conditions found, and to which the disorder has been attributed, are only coincident senile changes. The muscular theories are also discussed, and in nine cases in which he examined the muscles, one of them during life, he found pathological changes in all. There was swelling of the fibers, which were round in cross-section instead of polygonal, multiplication of nuclei, etc., his findings agreeing in the main with those of Schwenn, Schiefferdecker, and Idelsohn, indicating, he is inclined to believe, a specific change in the muscles in paralysis agitans, though he admits that this is not yet definitely proven. Camp, in considering the pathogenesis of the affection, finds most reason to believe that it is due to a toxemia, and that this is connected with disordered parathyroid function. In the two cases in which he was able to examine the ductless glands he found the parathyroids in a decidedly pathological condition; in both there was a peculiar fatty infiltration, especially in relation to the blood-vessels. Such a finding, in connection with the experimental evidence as to the effect of parathyroidectomy and the therapeutic results of Berkley in the treatment of paralysis agitans with parathyroid extract, furnish, he thinks, strong proof that the parathyroids play an important part in the pathogenesis of paralysis agitans. His conclusions are given as follows: 1. Paralysis agitans is not a neurosis nor is it senility. 2. The anatomic basis of the symptoms, muscular rigidity, tremor and the symptoms dependent on them, lies in the affection of the muscles. 3. The disease is probably a general toxemia, and there is evidence that it is due to alteration in the secretion of the parathyroid glands. The case histories of the patients of which Camp made the pathological studies are appended to his article.

Acute Otitis Media.—W. J. Leach describes acute middle ear disease, its symptoms, course, and treatment. In case palliatives fail and bulging of the drum and pain increase after thirty-six hours' treatment, he advises the immediate performance of myringotomy as lessening the danger of invasion of the mastoid cells, and after cleansing with peroxide of hydrogen and mopping out with dry cotton, filling the canal one-third full of boric acid, and inserting a cotton plug. After the discharge has ceased he would use 10 per cent. ichythol in liquid vaseline until the wound is healed, careful attention being given to nasal and pharyngeal conditions. The treatment should be carried on directly by the physician, and Leach emphasizes this as an essential. If intrusted to others it will not be well done. The prognosis of acute otitis media is good, he thinks, if the condition is promptly treated, but when the mastoid cells are involved the prognosis becomes serious. The way to success in otology is never to let acute otitis become chronic.

Physiological Action of Alkaloidal Salts.—O. H. Brown remarks on the common notion that different salts of an alkaloid have a similar quantitative effect, and says that he has long been of the opinion that the effect varies with the acid with which the alkaloid is combined. He describes his method of experimentation, in which he tested various solutions of the easily obtainable salts of morphine, strychnine, and quinine as to their activity in the destruction of paramecia. A simple unicellular organism of this kind gives more accurate results than would a more complex one, and the strength of the solution and the time required to destroy their active movements, which are always visible during life, are easily observed with low power of the microscope. The results are given in tabulated form, and show a striking difference in the action of different salts of the same alkaloid, and it is a rather interesting fact that the paramecia of the same culture and of different cultures, varied considerably in their susceptibility to the same solution. This was specially noticeable with those solutions that required some time to produce toxic effects; in the more rapidly acting ones it was scarcely noticeable. He sums up his results as follows: The acid with which certain alkaloids, strychnine, quinine, and morphine are combined alter decidedly the pharmacological action of the alkaloid—at least, in regard to their toxicity for paramecia. The most toxic salts of strychnine and quinine are in some instances, at least, those which stimulate catalytic processes the most markedly. The salts of morphine with the smallest degree of toxicity, in some instances, are the salts of those acids, the sodium salts of which stimulate the catalysis the most markedly.

Holes in the Mesentery.—G. K. Dickinson reports two operations in which intraperitoneal hernia through holes in the mesentery was found to exist, and remarks on the comparative rarity of the condition. He attributes the occurrence of the holes to defective arterial supply; they are usually found in the mesentery near the cecal region where the anastomosis of the ileocolic branch of the mesenteric artery with the intestinal branches is sometimes so incomplete as to make it impossible to inject this area.

Blood Pressure in Arteriosclerosis and Bright's Disease.—A. R. Elliott reports and discusses the variations in systolic blood pressure in certain cases of arteriosclero-

and chronic renal disease which had been under routine observation for considerable periods of time. The gauges used were Cook's modification of the Riva-Rocci apparatus with a 9 cm. arm band and Stanton's sphygmomanometer. The great majority of the observations were taken with the patient in the sitting position, the exact conditions were sought to be duplicated and physical repose and mental tranquillity of the subject under observation, so far as possible, were secured. In thirty cases of arteriosclerosis observed in this way, in only six (20 per cent.) was there a positive hypertension. This high percentage of cases without excessive tension shows that the degree of sclerosis of superficial arteries is no criterion of the severity of the sclerosis of visceral arteries or of the degree of tension present. If we can exclude chronic nephritis when high blood pressure and cardiac hypertrophy develop, we have reason to suspect splanchnic or aortic sclerosis. Sixty cases of chronic Bright's disease were also observed, and the high average blood pressure in these (190 mm.) was in marked contrast with the cases of arteriosclerosis. No constant ratio was observed between the degree of blood pressure and the intensity of the albuminuria or the amount of urine excreted. High tension in Bright's disease is in a way compensatory, but it needs watching. The first indication is to reduce, if possible, the systemic toxemia, and diet, fluid intake, elimination and personal hygiene generally must be looked after. The question of special vascular medication, however, is discussed. Before giving vascular drugs, ascertain thoroughly the cardiac and circulatory conditions; high pressure does not always require reduction by drugs. In emergencies, such as angina pectoris, apoplexy, etc., they may be called for. A sustained high pressure, with disquieting symptoms, may call for vasodilator medication, but it should be given cautiously, watching the effects. A fall of 10 or 15 per cent. is all that it is necessary or judicious to produce. The benefit from such medication must not be estimated by the blood pressure record, the patient's comfort, and the pulse rate are better indications of the effect produced. The use of vasodilators in the late stages of Bright's disease, with cardiac dilatation, dropsy, etc., is practically useless.

Points Regarding Opsonins.—Experiments to determine a number of points regarding opsonins were performed by E. A. Knorr, who finds that the phagocytic cells are, generally speaking, in direct proportion to the strength of the bacterial emulsion; that both undergo a distinct increase with long exposure, the maximum being reached in one hour. After two hours the degenerative changes in leucocytes render accurate observations impossible. Phagocytosis does not occur at room temperature, but an exposure of fully six hours is required to make it as noticeable as it usually is after fifteen minutes at body temperature. As regards the effect of the number of persons composing the pool, he concludes that a simple, or at most a double-mixed pool is necessary for ordinary purposes, a conclusion he believes Wright himself has reached. Aging of the culture does not lead to a drop in the phagocytic or percentage index, and boiling, thymol, and chloroform do not appear to have any inhibitory effect on the opsonic values, while lysol seems to produce a decrease. His experiments show that the serum loses one-half its opsonic power in twenty-four hours, and that after this there is no apparent change for the next twenty-four hours; then there is a rapid drop, but it does not wholly disappear until after five days. This is with serum collected and kept in a sterile condition. The corpuscles rapidly lose their capacity for phagocytosis, and only fresh ones can be used in opsonic work. Knorr's experience is that after six hours many of them are dead, and fallacious results are obtained if such are used. With weak emulsions the chances of error are greater than with strong emulsions, keeping in mind the fact that with too rich emulsions counting becomes difficult if not impossible. In many of his experiments the advantage of Simon's percentage index over the bacillary index of Wright are, in his opinion, very clearly shown.

Accidental Plague Inoculation.—P. C. Freer gives an account of the accidental inoculation with plague of a number of Philippine natives which occurred in the course of a very successful series of anticholera vaccinations. The cholera vaccine that had been used consisted of an extract of the killed, digested and filtered organisms, later modified to a mixture of such an extract with one obtained by shaking—in a machine—the living organisms in distilled water and then filtering. The reaction that follows the use of this vaccine is less severe than that frequently following smallpox vaccination, and yet a high degree of blood immunity is produced. It being thought desirable to test the method recommended by certain German authorities of using the whole organism and not its extracts, it was necessary for this purpose to inoculate immediately with a mixture of fresh twenty-four-hour cultures in saline solution, and inoculations were made for several days without accident. It is supposed that on the day that the accident occurred some unknown person misplaced a tube of virulent plague culture, which closely resembled the cholera cultures, among the latter, as such a tube was found missing from the incubator in which the plague cultures were. The matter was thoroughly investigated and these facts developed. It must be understood that the regular anticholera vaccine had absolutely no connection with the accident, the mixture responsible being an altogether different thing. Its microscopic examination revealed no plague bacilli, but guinea-pig and monkey inoculations were followed by the disease.

The Lancet, March 30, 1907.

Certain Acute Infective or Toxic Conditions of the Nervous System.—In the third Goulstonian lecture, E. F. Buzzard refers particularly to acute ascending myelitis, Landry's paralysis, and acute toxic polyneuritis. Three clinical histories are given under the third of these classes. Here it is natural to suppose that the poison at work is carried by the blood, and that the parts innervated by the gray matter of the cervical and lumbar enlargements suffer more than those in similar connection with the dorsal region. At the same time the whole of each lower motor neuron, including both the cell and its axion is exposed to the poison in the general circulation, and in these circumstances the particular affection of the long processes to the periphery of the limbs has an explanation offering some degree of probability. In one of the author's cases of Landry's paralysis, he found cocci in the extradural tissues, and it is quite conceivable that infection either by the cocci or by their toxins could take place from those tissues into the extramedullary and intramedullary lymphatics. From the absence of actual organisms in the spinal tissues in most of these cases it is probable that the toxins play the most important part in this infection. Allowing for a moment that this theoretical process can take place, it must be granted that an explanation of the gradual, ascending, step by step, involvement of the central nervous system is provided, and one which makes the more progressive and even distribution of the palsies more readily understood. This theory does not necessarily presuppose that the blood is free from the responsible organism nor that the extradural tissue is its only resting place, but it suggests that there may be places where the bacteria may find suitable lodgment for the purposes of multiplication and whence they may pour their toxin into the spinal lymphatic system.

British Medical Journal, March 23 *and* 30, 1907.

Removal of Enlarged Tonsils.—R. Maclaren prefers deep anesthesia, the patient being laid on one side. The instruments used are a gag, straight vulsellum, blunt dissector like a periosteum elevator, scissors curved on the flat, scalpel, probe-pointed bistoury, and forceps for holding tampons. The operation is commenced by opening the mouth as widely as possible with the gag. The tonsil of the side on which the patient is lying is then caught by the vulsellum. The best grip is got by placing one blade on the nasal and the other on the laryngeal end of the tonsil. The tonsil is drawn inwards and forwards. If it comes out from between the pillars no knife need be used, but if a considerable part of it remains behind the palate a transverse incision is made to expose the gland thoroughly. This is done with a sharp pointed scalpel from within outwards through the mucous membrane. It starts about the middle of the anterior pillar and is from half to three-quarters of an inch long, according to the size of the tonsil, which is made to bulge through it. At this stage, whether the mucous membrane has been cut or not, as much traction is put on the gland as it will bear and the blunt dissector is pushed behind it from above. It is then systematically teased out from its connections. There is this distinct advantage in starting in this way, that it prevents the uvula being injured, as it might be if the gland were taken out from below. Most tonsils peel cleanly out with a smooth and rounded back surface. Much of the completeness and facility of the operation depends on the consistence of the gland. If it is firm the removal is easy, but if it is soft and bears traction badly it may be a matter of difficulty to get it out whole owing to the teeth of the vulsellum tearing through. Scissors or the blunt bistoury are very useful for a tonsil of this latter sort. It is first well loosened by the dissector, and then

its final attachments snipped or cut. When one tonsil has been removed it is advisable to wait for a few minutes to allow bleeding to diminish. The second tonsil is then dealt with in a similar way and adenoid growths and turbinate thickening attended to if necessary.

Infiltration Anesthesia in Major and Minor Surgery.—This method of anesthesia is strongly commended by G. J. Arnold, who says that the resirable qualities of solutions for this purpose are as follows: (1) The percentage of the active agent contained in the solution must be sufficiently high to render the fluid efficient as an anesthetic, but the total quality of fluid infiltrated from beginning to end of an operation must contain an amount of the active agent insufficient to give rise to toxic results. As a corollary, it follows that solutions of cocaine are inadmissible unless only a small quantity of fluid be required, since it is not safe to inject more than about one-quarter grain of this substance. (2) The solution must be sterile, which is nearly equivalent to saying that its active agent should be capable of being boiled without impairment of its anesthetic properties. (3) The third essential of the solution on which stress must be laid concerns its physical and physiological features. It must be as nearly as possible isotonic with the tissues. The author fully describes the technique of the process used and states that his own list of operations by this method included the following: Gastrostomy (by the Ssabanajew-Frank method). Herniotomy (three cases); appendectomy in a quiet interval. Laparotomy for intestinal obstruction. Laparotomy with resection of small intestine and end-to-end anastomosis. Suprapubic cystotomy. Closure of an artificial anus (preliminary colostomy). Radical cure of hernia. Radical cure of varicocele. Removal of a mass of suppurating tuberculous glands in the groin (in an old and debilitated patient). Extirpation of the saphenous vein in the thigh and its tributaries in the leg for varix (many cases). Numerous minor operations for the removal of cysts, lipomata, needles, etc.

The Calcium Salts as Heart Tonics.—W. Ewart expresses the belief that so long as we continue to prescribe calcium salts to favor coagulation, there would seem to be some inconsistency in recommending them in a disease like pneumonia, for instance, which is so prone to clotting that one of its common fatal terminations is intracardiac thrombosis. Our cardiac stimulants should be sought in some other direction. As a fact, the danger special to pneumonia is not so much a clotting in the vessels as that within the alveoli; and the worst danger for the patient is the attitude of expectancy which watches the progress of his "consolidation" as though it were a fated fulfilment, instead of hastening to forestall it by defibrinating treatment. The prevailing neglect of this early and only opportunity of influencing the disease accounts for the uniformly neutral results from various lines of medication, which are all likely to be inoperative after consolidation has set its seal upon the case. Happily those therapeutic and dietetic measures which are indicated, whilst they are in themselves harmless, are demonstrably of service, and effectual in proportion to the early date of their adoption. Their aim is to maintain in the congested areas as much fluidity of blood and lymph as possible, to prevent vascular and lymphatic obstructions, and thereby to promote a steady rate of elimination of the iniecting agents and of their toxins, thus avoiding or lessening the possible disaster consequent upon their concentration. In view of these indications calcium chloride can have no place in our treatment of the early stages, but there remains the more urgent duty of relieving local congestion by leeches, of withholding fibrin formers from the fever diet, of stimulating excretion in every way, including cardiac stimulation; and, lastly, of administering freely the citrates and iodide of potassium to reduce the viscosity of the blood, unless we should discover some better means of checking the deposit of fibrin and of furthering its reabsorption before it has become completely solidified.

Operative Treatment of Ascites.—In a paper presented to the London Medical Society, Laurence Jones said that the actual cause of ascites occurring with hepatic cirrhosis was still doubtful. Both portal obstruction and toxemia seemed to play some part, and it alone was unable to reproduce the effusion if the portal vein was able to produce ascites only when a certain grade of toxemia was present, but that the toxemia alone was unable to produce the effusion if the portal obstruction was relieved by the formation of fresh portocaval anastomoses. Chronic peritonitis, although often associated with ascites, was not necessarily the primary cause. The patient most suitable for operative treatment was one who had survived the tapping of a fluid shown to be of mechanical rather than of inflammatory origin, whose liver was in the hypertrophic stage, who was still fairly young, and whose symptoms were more those of toxemia. The common object of all operations was to increase the communications between the portal and caval systems; the omentum was the portal area usually selected, and it was sutured to the abdominal wall outside the peritoneum, as in the operations of Schiazzi, Bunge, Pascale, and others, or inside the peritoneum as in the original operation of Monson. The operation as devised by Monson seemed still the best. Various additions, such as hepatopexy and splenopexy had been made to simple fixation of the omentum or had been performed where the latter had failed or had been impossible. The operation certainly relieved the patient in many cases of the ascites and thereby prolonged life in comfort for some years; occasionally the condition of the liver itself appeared to have improved, but that effect was not claimed for the operation, and it was not possible to explain any such result. About one-third of the patients died within one month of the operation, about one-third were definitely improved and their lives were prolonged for some years, and about one-third were improved but slightly or not at all. The death-rate due to the operation should not be more than 10 per cent.

Bacterial Diagnosis of Cholera.—M. A. Ruffer summarizes an extensive series of investigations on this subject, and describes the technical methods followed. The investigations were carried on at Port Said, and they justify, according to the author, the following conclusions: (1) A certain number of vibrios, although agglutinating to some extent with cholera serum, are sharply differentiated morphologically from the cholera vibrio, by the fact that they are multiciliated. (2) Whereas some vibrios found in ship water are agglutinated by very dilute solutions of cholera serum, others are agglutinated by far stronger solutions only. The latter form a transition stage, so to speak, between the nonagglutinating and the highly agglutinating vibrios. (3) Although an active cholera serum agglutinates all the vibrios to some extent, yet only two of these vibrios when injected into animals produce serums having a powerful agglutinating effect on cholera vibrios; two serums had the same property but to a slighter extent, and two had none. These experiments, therefore, support the conclusion previously arrived at —namely, that it is not advisable to trust to the agglutination test only in the bacteriological diagnosis of cholera. The test is useful but not specific.

Diagnosis of Certain Forms of Renal Disease.—In the course of an interesting paper on this subject, J. R. Bradford expresses the opinion that nephritis of the parenchymatous or diffuse tubal type is by no means uncommon in the first two years following syphilitic infection. It often comes on at a time when the patient feels perfectly well, is not deeply modified by the underlying dyscrasia, and hence is commonly referred to exposure to cold. Examination may show a few spots suggestive of syphilis or even a gumma. This form of nephritis is characterized by very intense albuminuria, the urine frequently becoming solid, although the patient may not seem very sick. Consequently the disease comes to light unexpectedly. Albuminuria also is persistent, lasting several months, but it may entirely clear up. Nephritis may also occur during the course of secondary syphilis and be of an intense type. Probably all cases of renal disease are ultimately due to toxic agents rather than directly to exposure to cold. Syphilis may supply the toxic factor.

Berliner klinische Wochenschrift, March 18 *and* 25, 1907.

Hyperemesis Gravidarum.—Baisch finds that all these cases can be included in one of three types as regards their source—they are gastric, central, or uterine. That depending on a nervous basis probably is the most frequent, and among the twenty cases personally observed by the author fifteen may be included in this category. In the latter class of cases the prognosis is better than in the others. In addition to suggestive and medicinal treatment, operative procedures should always be considered in those patients who do not respond readily to the former. The writer thinks that the best means of deciding when the medical treatment is to be superseded by the radical is the weight scale. If there is a progressive loss in weight, as shown by weighing done twice a week, the uterus should be immediately emptied. He claims that the dictum stated by Freund, to wait for edema, convulsions, and mental confusion, is entirely false. Abortion, when decided on, should be carried out with the least expenditure of the patient's energy, and the technique should be simple

enough to preclude any danger from infection. The writer prefers to introduce a laminaria tent after sufficient dilatation of the cervix by graduated dilators. This produces sufficient dilatation to permit the removal of the fetus with the ordinary Winter's forceps. The manipulations are not extensive and in most cases the operation may be done without anesthesia.

A Case of Hepatic Abscess Containing Typhoid Bacilli.—Venema and Grünberg report a case in which during an attack of typhoid an abscess developed in the right lobe of the liver which was evacuated with good results. The pus from the abscess was carefully examined and the *Bacillus typhosus* obtained in pure culture. Only five cases in which a definite bacteriological proof is at hand are to be found in the literature. The prognosis is very unfavorable, the mortality amounting to about 66 per cent. The treatment can only be surgical, and the result depends on whether we have to deal with single or multiple abscesses. In the latter case, where the condition is evidently the result of a pyelophlebitis, surgical interference is naturally useless, but in the former a good result may be expected.

An Epidemic of Meat Poisoning in Berlin.—Jacobson refers to an epidemic of poisoning cases during a short period, in which ninety persons living in a restricted area were taken with symptoms of an acute intoxication or infection, which was traced to the meat consumed by these people. Two fatal cases are included in the number. The meat in question appeared to be in good condition, and there was nothing in the odor, taste, or consistency to give rise to any suspicion of its poisonous character. The symptoms came on within eight hours after eating, and were most severe in those persons who had eaten the meat raw. Examination of the tainted beef showed that it contained the *Bacillus paratyphosus.* This organism was later also obtained in pure cultures from the stools of the affected individuals. The symptoms were those associated with a paratyphoid infection. The source of the infection of the meat itself could not be traced with any certainty.

Münchener medizinische Wochenschrift, March 12 and 19, 1907.

Scopolamine Morphine Narcosis in Labor.—Bass publishes a report of 107 cases of labor conducted with this method of anesthesia. As the result of his observations he claims that the pain of the labor may in the large majority of cases be alleviated in a marked degree. For the purpose indicated a dose of 0.0003 gm. scopolamine and 0.01 gm. morphine was found to be sufficient, and any increase in the size of the dose did not improve the results. In some cases a delay in the labor occurred, but this did not appear to have any bad effect on either the mother or the child. The uterine contractions and the placental delivery were not apparently affected, but the abdominal expulsive efforts were considerably inhibited. In no instance were any undesirable after-effects noted as regards the mother, but the result on the child must not be regarded with indifference. In one case the death of the fetus may have been due to this procedure, and for this reason considerable care should be exercised in administering an otherwise valuable combination of drugs.

On the Course of Urobilinuria in Typhoid.—Rubin reports his observations on this phenomenon in a series of eight cases. For the purpose of making the test he employed Schlesinger's reagent, which consists of a ten per cent. solution of zinc acetate in alcohol. Equal parts of urine and reagent are allowed to stand for twenty-four hours, and after fluorescence appears the specimen is subjected to spectroscopic examination. Rubin's results agree in the main with those of Hildebrandt. The appearance of a well marked urobilinuria at the beginning of defervescence may be regarded as an evidence of a favorable outcome. If the phenomenon continues during convalescence in any given case, care should be taken in increasing the patient's diet or allowing him to get up. Not until the test is negative is it apparently safe to discharge the patient.

The Indications and Technique of Extirpation of the Lacrymal Sac.—Bäumler reports a aseries of 350 cases in which this operation was done. The operation of extirpation is indicated in all cases where the removal of the infectious focus is necessary in order to protect or preserve the eye, or where the presence of a chronic dacryocystitis has resisted all other forms of treatment. In doing the operation it is necessary to remove not only the diseased sac, but also the surrounding tissues, particularly the periosteum. In most cases the after-treatment may be conducted as an ambulatory one. The final results in this series of cases were excellent, and in only a few cases did primary union of the wound fail to take place.

Polyserositis.—Wagner calls attention to a condition of which only a comparatively small number of instances have been reported, where an exudation of serum takes place into all the large serous cavities of the body, without any apparent underlying cause. The disease is usually chronic, and ends fatally after a longer or shorter period. In the serous cavities we find all the evidences of a productive inflammation—adhesions between the pleura, accumulation of large quantities of fluid and masses of fibrin in the peritoneum, obliteration of the pericardial cavity with its consequences. Only a few instances of this disease have been observed during the early stages, among them a case reported by Wagner, where the serous exudate appeared simultaneously in all the serous cavities, and where a cure resulted in a relatively short time. The patient, a young man, was in good general health, and no cause for the appearance of the trouble could be ascertained. It is probable that the disease may have been caused by the presence in the circulating blood of some infectious material similar to what we find in acute articular rheumatism. The liver also became enlarged, and traces of biliary coloring matter appeared in the urine, so that this organ may have been the center of some of the circulatory disturbance. The only treatment applied consisted of the use of the ice bag in the cardiac region, rest in bed, and a light restricted mixed diet.

Deutsche medizinische Wochenschrift, March 14, 1907.

Hydrotherapy During the Climacteric.— Zweig discusses the value of hydriatic procedures on the nervous and vasomotor disturbances associated with this condition. The employment of these measures has met with insufficient attention, although there is abundant proof at hand to show that the improvement in the subjective symptoms may be well marked. Just what the effect is on the objective features it is difficult to estimate, because the individual effects vary to such a great extent. Extreme care must be used, however, in applying hydriatic measures because of the increased sensitiveness of the patient to external irritants. The temperature of the water should be such as to cause no reaction or only a slight one. In most cases a lukewarm bath, followed by the addition of cold water, may be taken two or three times during the course of the week. Salt may be added to the bath with benefit, but carbonic acid and electric baths may with advantage be omitted. The method referred to applies only to cases where the disturbance is a functional one. Where organic disease is present modifications must be considered. A number of cases are reported in which hydrotherapeutic measures were used with success. A feature of these was a loss in weight, which the author does not consider unfavorable because a woman is apt to become stout naturally during this period.

Experience with Oil of Chenopodium in the Treatment of Ascaris in Children.—Brüning has subjected the American oil to tests in a series of twenty cases and found that it is very efficient in the treatment of the condition noted. Depending on the age of the child, the dose varies from 8-15 drops three times daily, followed by a cathartic. It seems that one treatment is sufficient for most cases. The worms are apparently not killed by the oil, but merely narcotized, so that the administration of the cathartic is most important. The author believes that the efficient action of the remedy resides in an ethereal oil of the following composition: $C_{10}H_{16}O_2$. Experiments have shown that the same effect may be obtained with the latter as with the ordinary oil.

Action of Baths of White and Blue Light Upon the Blood.—U. Masucci records experiments to ascertain the effect of baths of blue and white light on the blood. His conclusions are given us thus: White light produces a slight increase of red corpuscles and diminution of white corpuscles. There is an increase of lymphocytes, and slight increase of nongrannlar mononucleated cells, and a slight diminution of polynucleated and eosinophiles. The changes in eosinophiles are most permanent. The effects are due to negative phototrophismus, which has a repulsive action on the polynucleated cells. There is a large increase of young cells, lymphocytes and mononucleated. Blue light produces a still greater lessening of leucocytes. The effects are more marked and more transient on all the forms of cells. Only the diminution of eosinophiles is permanent. These changes are due to the chemical rays. Phototrophismus acts on the lymphoid tissue of the bone marrow, driving the polynucleated cells from the circulation to the spleen. The increase of lymphocytes is due to the effect of the rays on the glandular lymphoid tissues, which makes the lymphatic circulation more rapid. There is a renewal of young cells and a destruction of the old ones.—*Giornale di Elettricita Medica.*

Book Reviews.

SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY. An Introduction to the Study of Obstetrics and Gynecology for Medical Students and Practitioners; with a Glossary of Embryological Terms. By WALTER PORTER MANTON, M.D., Professor of Clinical Gynecology and Professor Adjunct of Obstetrics in the Detroit College of Medicine; Fellow of the Zoölogical Society of London, of the Michigan Academy of Sciences, etc., etc. Third Edition. Revised and Enlarged. Illustrated with numerous outline drawings. Philadelphia: F. A. Davis Company. 1906.

THE essentials of embryology are here set forth in condensed form primarily for the use of students, but more advanced readers who may wish to refresh their memories or to learn the present standpoint of workers in this difficult subject will no doubt find it equally useful. It is clearly written and fairly well illustrated, and seems well adapted to its purpose.

TEXTBOOK OF ANATOMY FOR NURSES. By ELIZABETH R. BUNDY, M.D., Member of the Medical Staff of the Woman's Hospital of Philadelphia; Gynecologist, New Jersey Training School, Vineland; Late Adjunct Professor of Anatomy and Demonstrator of Anatomy in the Woman's Medical College of Pennsylvania; Formerly Superintendent of the Connecticut Training School for Nurses, New Haven. Philadelphia: P. Blakiston's Son & Co., 1906.

IN this well constructed book the trained nurse will find all that is essential for her to know of the anatomy of the human body. The descriptions are clear and concise, and the work is judiciously illustrated with upward of 200 well executed pictures, a number of them in colors. The book is well conceived and well executed and will be found most useful to those for whom it is intended.

SURGERY. ITS PRINCIPLES AND PRACTICE. By various authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume I. Philadelphia and London: W. B. Saunders Company. 1906.

UNDER the skilful direction of the accomplished editor the contributors to the first volume of this extensive work have produced a series of essays that promise well for the volumes that are to follow. The present volume is devoted to the customary introductory and general subjects. The chapters on surgical physiology, and wounds and contusions by Dr. Geo. W. Crile contain many practical applications of experimental data obtained by the author, among which the discussion of the nature and treatment of shock and collapse are prominent. A section is devoted to the subject of blood pressure determinations and their practical value in surgery. Infection and immunity have been made the subject of a chapter by Dr. Ludwig Hektoen in which the involved ramifications of these difficult branches of modern research are set forth in simple but adequate fashion, and Dr. J. George Adami contributes an article on inflammation in which the author's well-known views as to the conservative nature of this process are detailed. A chapter of especial interest, not only to the surgeon on account of the many practical considerations involved, but also to the pathologist, owing to the large amount of original research it represents, is that on the processes of repair by Dr. F. C. Wood. Concerning the introductory essay on the history of surgery by Dr. James G. Mumford, one can but echo the writer's regret that the exigencies of space did not permit its extension to a greater length. Indeed, the need of brevity seems to have led him to omit mention of much of value that has been accomplished by American surgeons, especially those of the Southern States. The other articles of the volume are by Drs. John Bland-Sutton, John C. Da Costa, John C. Da Costa, Jr., Charles H. Frazier, Leonard Freeman, Edward Martin, Edward H. Nichols, and Eugene A. Smith.

In spite of the natural defects inherent to systematic treatises that are written by many hands, this form of mosaic work appears to be gaining in popularity, no doubt deservedly so, for with the ever-increasing scope of medical and surgical knowledge there can be but few men in a generation whose leisure and experience would enable them to produce a sufficiently comprehensive and authoritative guide for general use. The present work is, of course, by no means free from faults: some articles must inevitably fall below the average in excellence and some overlapping and some omissions are sure to occur in spite of the most careful editorial supervision. The publishers have done their part to give the subject matter an appropriate setting: the type is clear and the illustrations are excellent. Their beauty has been gained, however, at the expense of the reader's comfort, for the highly calendered paper used which lends itself so well to half-tone reproduction is also, at least by artificial light, very trying to the eyes. The binding also is badly done, which is a serious defect in a work that presumably is intended to withstand the wear and tear of frequent reference during a period of years.

PRACTICAL MATERIA MEDICA FOR NURSES, with an Appendix Containing Poisons and Their Antidotes, with Poison-Emergencies; Mineral Waters; Weights and Measures; Dose-List, and a Glossary of the Terms Used in Materia Medica and Therapeutics. By EMILY A. M. STONEY, Graduate of the Training-School for Nurses, Lawrence, Mass.; Late Head Nurse, Mercy Hospital, Chicago, Ill.; Late Superintendent of Training-School for Nurses, Carney Hospital, South Boston, Mass.; Author of "Practical Points in Nursing." Third Edition. Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1906.

THIS is a well written, intelligently condensed handbook of materia medica adapted to the needs of nurses and others who would familiarize themselves with the properties and doses of the drugs most commonly employed to-day in medical practice. The subjects are taken up in alphabetical order and not according to therapeutic uses, but their classification is presented in a table in the introduction. A list of poisons and their antidotes, a dose-table, a glossary of unfamiliar terms, and an index complete the work. The book should be in every nurse's library.

ELEMENTARY MANUAL OF REGIONAL TOPOGRAPHICAL DERMATOLOGY. By R. SABOURAUD, Director of the City of Paris Dermatological Laboratory, St. Louis Hospital. English Translation by C. F. MARSHALL, Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London. New York: Rebman Company; London: Rebman, Limited, 1906.

FOR the general practitioner, who sometimes has occasion to treat skin diseases, this is probably the most useful volume published. Its great and peculiar value is as a first aid in diagnosis. The different regions of the skin are taken up one by one, and the eruptions that occur on each are described in fair detail. A novice, in doubt as to the lesion before him, gets little help from the ordinary textbook, for he does not know where to turn, but with this volume he finds quickly a clear description of the various diseases that may occur upon the area involved, and then, if necessary, he may seek fuller information elsewhere. The translation is generally very good; only occasionally has the language been injured in transit, as when the phrase "seconde enfance" is rendered by second infancy, whereas the French locution means simply childhood, and has no reference to dotage. A graver fault is the inaccuracy with which the formulas are transcribed. Generally they approximate sufficiently to the original, but occasionally, and probably through careless proofreading, the proportions are made to differ radically in the French and the English versions. There are slight condensations in the text, but without any sacrifice of clearness. The presswork is good, the illustrations are still as clear as in the original, the book is lighter and easier to handle. On the whole, it is an exceedingly valuable work, and if its prescriptions are accepted with caution, it is a very sound guide.

THE NATURE, CAUSES, VARIETY, AND TREATMENT OF BODILY DEFORMITIES: In a Series of Lectures delivered at the City Orthopedic Hospital in the year 1852, and subsequently, by the late E. J. CHANCE, F.R.C.S. Eng. With illustrations drawn on wood by the Author from cases in his own practice, and many additional drawings and copious notes from cases in the Editor's practice. Edited by JOHN POLAND, F.R.C.S. Eng. Second Edition. In two volumes: Vol. I. London: Smith, Elder & Co., 1905.

THIS volume consists of six lectures delivered more than half a century ago. Its value, therefore, is chiefly historical; and the student of that side of medicine will find in the introduction and notes several interesting points. Thus, the rise of special practice and of special hospitals, and the criticism and opposition evoked thereby; how men like Cheselden and Abernethy sent cases of club-foot to bonesetters for treatment; how the terms specialist and quack were once synonymous—all these make interesting reading. It is also noticeable that the lectures of fifty years ago were characterized by fine literary style, broad general culture, abundant knowledge of the subject under discussion, and were evidently prepared with the most painstaking care; on all of which points they more than hold their own with similar publications of later date.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held March 21, 1907.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Genitourinary Diseases. The subject of discussion was "New Growths of the Bladder."

Pathology.—Dr. F. S. MANDLEBAUM opened the symposium with a paper which was based chiefly on the observation and study of specimens referred to the Pathological Department of the Mount Sinai Hospital during the past nine years, and embraced twenty-nine cases of primary tumor of the bladder and eight of secondary tumor. Among these thirty-seven cases were two, inoperable in nature, in which the specimens were obtained at autopsy. The remaining thirty-five cases were operated on by the attending staff. The most satisfactory classification of these tumors was (1) epithelial tissue group, in which were placed papilloma, adenoma, carcinoma, and cysts; (2) connective tissue group, comprising fibroma, myxoma and sarcoma; (3) a muscle tissue group, in which were placed myomata. Statistics showed that primary bladder tumors comprised about 0.7 per cent. of all tumors, and were quite equally divided between males and females. Carcinoma as a rule was found between the ages of fifty and sixty, while sarcoma occurred more frequently in younger subjects. The benign tumors might arise at any period. Chronic irritation was an important factor in the etiology. Calculi, cystitis, the *Distoma hematobium*, the irritating effects on the bladder in the manufacture of aniline dyes, as well as psorosperms, had all been noted as being of etiological significance. Secondary tumors were those arising in neighboring or adjacent organs and growing into the bladder by direct extension. These tumors frequently originated in the prostate, uterus, vagina, or intestine. Metastatic bladder tumors were of the greatest rarity. Dr. Mandlebaum took up the consideration of the tumors of the different types, illustrating each with photomicrographs. He believed that a better name for papilloma was fibroepithelioma, inasmuch as both of these structures were involved in its production, or better still, papillary fibroepithelioma. A papilloma might occur singly or be multiple, and might arise from any portion of the bladder wall. The typical form consisted of a stem or pedicle, springing directly from the mucosa. Many tufts or villi sprang from the pedicle, giving a shaggy appearance to the growth. The villi usually bifurcated into innumerable branches, varying somewhat in length. Occasionally a deposit of phosphates might form superficially. A papilloma might range in size from a small tumor of a few millimeters in diameter to one nearly filling the bladder. As in all other tumors of this organ, the growth might interfere with the normal bladder functions, so that urination might be disturbed or hydronephrosis be produced, depending upon its situation. Inflammation might supervene and the tumor become involved in the inflammatory process. The tendency for papilloma to recur after removal was a well established fact. The growth frequently reappeared as a simple benign tumor, though in some instances it might be distinctly malignant in character. Can a simple, benign papilloma become malignant? The weight of evidence to-day was confirmative, and cases had been described which seemed to bear out such a view. In one of his cases the change in the epithelioma from simple papilloma to carcinoma was most striking, and the transition could be clearly followed. The statistics of several carefully examined series showed that the simple papilloma formed about twenty per cent. of the cases of primary bladder tumors. A papillary carcinoma might resemble the simple papilloma so closely that a microscopical examination alone could decide. In his series this variety of tumor occurred in sixteen of the cases, or fifty-seven per cent. of all the primary growths. All the cases were in males, and the ages ranged from twenty-five to eighty-two years, the average being fifty-two. In all the bladder wall was infiltrated; in three no involvement had occurred, and in two it was impossible to determine this point. Ulceration and hemorrhage were not infrequent. A papillary carcinoma might arise from any portion of the bladder. The prostate was not involved in any of his cases. Perforation of the bladder wall was very rare, and metastases occurred only in the late stages. The non-papillary forms of carcinoma were somewhat less frequent. The flat or squamous celled carcinoma might be found in the bladder, but also was somewhat infrequent. In his series it occurred only in two cases, both males. There were five cases of fibrocarcinoma, all in males, in his series of cases, and, in every instance, the bladder was infiltrated, and all terminated fatally. These five cases were all carefully examined before operation, they were diagnosed as new growths of the bladder, and as such were operated upon. A close study of all the extirpated tumors, and a post-mortem examination in two of the cases, revealed the fact that four of these tumors were primary growths of the prostate, with a secondary involvement of the bladder. Therefore, he was compelled to place four of these five cases in the class with the secondary tumors. A similar observation was made in studying two cases of adenocarcinoma, both in males, aged, respectively, forty-eight and sixty-seven years. In both the prostate was primarily affected. Simple adenoma, as well as fibroadenoma, was quite rare in the bladder. Colloid carcinoma was not common in the bladder. Cysts might be found as the result of congenital defects connected with the urachus, the Wolffian body, or Gärtner's duct. The connective tissue tumors were less frequent than those already described. Fibroma was not often met. The favorite site was at the base of the bladder, and was described as a hard growth, often pedunculated, and containing fibrous tissue and muscle fibers. Myxoma was not so rare a form and occurred in childhood often. Other forms of sarcoma other than myxosarcoma might be found in the bladder, but as a rule they did not have any definite or uniform features. They were sessile as a rule, but a pedunculated variety had been described. It was interesting that about thirty per cent. of the reported cases of sarcoma had been found in females. Myoma of the bladder was not common. Only one case of dermoid of the bladder was known, that described by Thompson.

Diagnosis.—Dr. HUGH CABOT of Boston read this paper. He said the diagnosis of bladder tumors was not as satisfactory as it might be. The failures in early diagnosis were responsible for the failures in the treatment. Failure to take advantage of the new methods now was a serious responsibility. The real dangers from delay were: (1) Continued growth of the tumor; (2) infection of the bladder; (3) infection of the upper urinary tract, and (4) damage or destruction of one kidney by pressure upon the lower end of the ureter. An early diagnosis might be the means of avoiding these dangers. It still remained that the average practitioner would allow a painless hematuria pass by undiagnosed. The cardinal symptoms of tumor of the bladder were a painless hematuria and disturbance of bladder function. The hematuria must be distinguished from disease of the kidney, ureter, prostate, and other diseases of the bladder other than tumor. There was great difficulty in diagnosing disturbances of bladder function. Tumors of the bladder must be differentiated from stone, from hypertrophied prostate, etc. In attempting to differentiate bladder tumors from disease of the prostate, there was a lack of symptoms absolutely diagnostic. There were many suggestive symptoms to bear in mind in connection with tumors of the bladder. Tumors often existed for a long time without exact symptoms. Hematuria was the first symptom in

one-half the cases, and it was always present at some stage of the disease, but was not an early symptom. On the other hand, a profuse and even fatal hemorrhage might occur even from small growths. Hematuria was almost always followed by the stage of infection. In some cases the surface of the growth was crusted with calcium salts. The symptoms were not at all diagnostic. There were two methods of examination of value and which would lead to a correct diagnosis, examination by the rectum, and the use of the cystoscope. Dr. Cabot told of a colleague of his who attempted to crush a stone. Upon opening the bladder a fibromyxoma was found. The only thorough diagnostic method at hand now he believed to be the cystoscope. In some cases the bleeding might be so profuse as to preclude its use; then one should do a suprapubic cystotomy. Some time was spent in speaking of the difficulties of cystoscopy. It was the duty of all practitioners in the presence of a painless hematuria, or hemorrhage accompanied by pain, or cases of disturbances of bladder function, to make use of the cystoscope by promptly referring the case to one who could use one. Nothing was gained by delay.

Treatment.—Dr. Ramon Guiteras presented this communication. He said before considering the treatment of bladder tumors, one must take into consideration the different varieties of tumors, their size, shape, and location, the symptoms they produce, the complications that existed or might develop, the age and general condition of the patient, etc. Finally, after studying the individual case carefully, and considering the different factors connected with it judiciously, one should make up his mind whether or not the patient should be operated upon; for it must be remembered that patients with bladder tumors often lived many years in comfort without operation who, if they were operated upon too radically, might not survive the operation. So soon as hemorrhage occurred in bladder tumor treatment should be begun by rest in bed and a bland diet, 5 to 15 grains of calcium every two or three hours, tincture of iron, ergot, and gelatin. Locally a catheter should be introduced and an attempt made to aspirate or suck out any blood clots. If none come away by aspiration, a small quantity of hot saline solution should be introduced into the bladder, and the catheter worked about carefully in an effort to break up the blood clots without causing additional hemorrhage. Gelatin might be used locally. Dr. Guiteras said he had never performed suprapubic cystotomy, and he packed the bladder in cases of hemorrhage due to tumors. Tenesmus and spasm were treated palliatively by antispasmodics, massage of the prostate, if associated with prostate trouble, and stretching the bladder sphincter with a Kohlman dilator. In cases of bladder infection it should be washed out with solutions of boracic acid, permanganate of potassium, or nitrate of silver followed by a solution of organic silver. The operative treatment of vesical tumors consisted in removal through the dilated urethra in women, vaginal vesical incision, perineal cystotomy (Thompson), removal by means of the cystoscope intravesical (Nitze), suprapubic cystotomy, cystectomy (resection), cystectomy complete (extirpation), and nephrotomy-nephrostomy. After considering each of these methods he concluded (1) that more attention should be paid by cystoscopists to the intravesical work by means of the Nitze's operating cystoscope in the radical treatment of tumors of the bladder, as it was to-day beginning to occupy the same position in tumor work that the lithotrite had in the work on vesical calculi. (2) That more attention should also be given to the use of the air cystoscope for increasing its usefulness in the treatment of bladder disease. (3) That in the case of all tumors in the front and sides of the bladder, in which there was plenty of space to make the incision clear of the tumor base, excision was the best operation. (4) That nephrostomy would in the future be as important an operation in cases of malignant tumors of the bladder as colostomy was at present in cases of malignant disease of the rectum. (5) That malignant tumors of the rectum situated about the mouths of the ureters should not be excised, nor should the bladder in these cases be extirpated, but when through the pressure of the growth on the ureters of one side, the kidney on that side began to develop a renal retention, a nephrostomy should be performed. (6) That in the treatment of bladder tumors they should be conservative and not too radical in their operative procedures. Casper said "patients generally do better and live longer without than with operation." Dr. Guiteras was inclined to believe that he was right in malignant cases.

Results of Surgical Treatment.—Dr. F. S. Watson of Boston presented four tables showing the operative results of tumors of the bladder. There was an extraordinary tendency, he said, to malignant transition. The malignant process might begin in the minute villi in the periphery. There might be recurrences not *in situ*, but elsewhere in the bladder. There were two facts to be considered in connection with operative results, and they both had to do with the cause of death. There were an extraordinary number of recurrences in benign tumors; this was a fact in connection with operations of partial resection involving the transplantation of one ureter in the rectum, skin, or elsewhere; also in all cases of double transplantation necessitated by a total extirpation; the deaths in these cases were due, one-half to the shock produced, the other to an ascending infection. One or two things might be done. The growth might be bitten off and then let alone. He advised against touching the malignant growths at all. That was all right in small polypoid growths. He asked how these unfortunate results could be improved upon. He could conceive of but one way. If such a large number of benign tumors of the bladder become malignant, it seemed to him that they should treat all cases as though they were malignant tumors, and treat them by as radical measures as could be applied, namely, by taking away the diseased area, performing a total extirpation. The question then arose, why so great a mortality? If one could diminish the length of time of operation and could cut off the deaths occurring from an ascending infection, the patients would have a fair chance. He advised a double bilateral simultaneous nephrostomy done as a preliminary step. Then after a month or six weeks removal of the bladder as well as of the prostate and seminal vesicles if there was any question of their being involved. One shortened the time of operation by getting rid of the ureteral implantation. Cases of recurrent benign tumors of the bladder, or recurrences following tumors originally benign in which there was some doubt that they might be carcinoma, called for this method of operating: Dr. Watson employed it in all cases in which it was proper to do a radical operation, as though it was a carcinoma from the start. He never operated in this way upon sarcomata; they never got well. In three cases of bilateral simultaneous lumbar nephrostomy there was no shock *per se*. One died from a continuance of the uremic condition. Were they not going to have trouble with infection of the kidney? He answered no, that the kidneys would drain freely if they were kept clean. Was there not an intolerable distress when a double nephrostomy was done? He said no, that he had a patient who had been draining for twelve years, in perfect health, and with not a smell or odor. Nobody was aware of his condition. Dr. Watson wished to have it repeated and emphasized, that there was no shock *per se* in doing a double lumbar nephrostomy simultaneously. The shock would be greatly reduced by a total extirpation by first having the whole question of urinary drainage settled at a preliminary operation, having the secretion properly diverted.

Dr. Howard Lilienthal referred to that part of Dr. Mandlebaum's paper in which he said that malignant

growths of the bladder starting in the prostate might be mistaken for primary growths. In other words, in secondary malignant growths of the bladder 80 per cent. gave chances that the parent growth was in the prostate. With regard to the cystoscope, one could not be dead sure of what they saw through it; but one could be sure when working through a suprapubic incision. He said that instead of making a hole in the perineum or introducing a cystoscope, it would be better to make this suprapubic opening. As to Dr. Watson's suggestion, he was convinced that the procedure was the most rational treatment for cancerous disease of the bladder with one possible exception. He thought they should first make the suprapubic opening and obtain a piece of the growth for diagnostic purposes, and then subsequently doing the double nephrostomy. This would greatly diminish the dangers. There was no question but that by this operation they diminished the dangers of an ascending infection. The ureters should be implanted into an excluded loop of intestine, preferably the ascending colon previously excluded.

Dr. H. Goldenberg said that at the Mount Sinai Hospital during the last year they had twenty-one cases of bladder tumor, with thirteen operations, the remaining eight refusing operation, or else being inoperable. Of these thirteen cases, eight were carcinomata, four papillomata, and one sarcoma. The results were bad in carcinoma when there was infiltration. The time was as yet too short to report the results in papilloma. The question arose as to whether they should operate upon these cases so soon as the diagnosis was made; it was difficult to answer. He had had a case which he had watched for four years, a case of benign tumor of the bladder, with intermittent hematuria. He had had another opportunity of watching one of Casper's cases in Berlin which had been under observation for eleven years, the patient having refused operation. One should be governed by general surgical principles in these cases.

Dr. Edward L. Keyes, Jr., spoke in reference to palliative hemostasis where operation was refused or where it was impossible to do operation, when at times the bleeding was quite sharp, and said that he had found out one or two tricks which he believed would be worth while mentioning. Of the internal remedies, especially when there was bleeding from the kidneys or the bladder, he believed the best to be turpentine, given in capsules, 10 minims three times a day, or 10 minims given on a lump of sugar. Another remedy he favored was the fluid extract of senecio aureus given in dram doses three times a day. As a local hemostatic he believed the best remedy was alum, and the form that he used was Squibb's camphorated alum; a dram of this was added to eight ounces of warm water and injected into the bladder. This was far better than adrenalin.

Dr. Eugene Fuller said that in some cases there was a tendency to diagnose a granulomatous condition met with at the base of the bladder as tumor of the bladder. If that was removed or scraped off, the patient would gradually get well. These should not be classed, however, as bladder tumors. If there was a malignant growth of the bladder he thought it better to leave it alone, or do a nephrostomy. Partial resection was not worthy a trial.

Dr. H. H. Morton of Brooklyn called attention to the importance of diagnosis as a prognostic aid, especially the knowledge whether the tumor was benign or malignant. In the early stages one could see with the cystoscope the tumor floating, but when there was bleeding this instrument threw no light upon it, even when adrenalin was used. If it were possible to take a piece with the Casper or Nitze's cystoscope for microscopical examination, then they would have something to go on. One could not tell whether the tumor was benign or malignant merely by looking at it. He had seen the operating cystoscope used by Nitze, and it was a very difficult instrument to manipulate.

Dr. Harlow Brooks spoke of the prevention of malignant disease of the bladder and said that a great many cases of vesical carcinoma originated in the prostate; therefore, to prevent them closer inspection and observation of conditions in the prostate should be called for.

Dr. L. Bolton Bangs, speaking in reference to the double nephrostomy, asked, "What is the use?" Patients who required such an undertaking as that had already reached such a point in their malady that it was utterly hopeless, for metastases had already taken place. The degree with which the disease had extended from the bladder was an utterly unknown quantity. The disease was beyond you. The question of nephrostomy which Dr. Watson proposed appealed strongly to him, but only in a very limited class of cases. The question of shock did not concern them. Dr. Bangs said that he had a patient who had been carrying a tube for eleven years in the loins. Before undertaking a double nephrostomy the extent of the malady should be determined as far as was possible.

Dr. George E. Brewer said that he had a patient who had had a double nephrostomy performed on him three years ago; it was done for suppurative disease of both kidneys from calculi. The man was in good condition and not inconvenienced at all.

Reform Urged in the Board of Health Inspectors.—Dr. A. Jacobi introduced the following resolution, which was unanimously carried, proposed to the consideration of the Academy by the Section on Public Health: *Resolved*, That the New York Academy of Medicine urge upon the Department of Health of New York City the following requirement, namely, that the inspectors of the Department of Health observe the same precautions as to clothing and personal disinfection, when their duties bring them into contact with communicable diseases, as are required by the physicians in attendance at the Willard Parker Hospital.

The Milk Supply of New York City.—Dr. Jacobi also introduced a resolution on this subject (see page 527).

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, March 18, 1907.

The Corresponding Secretary, Dr. Frank C. Raynor, in the Chair.

The Executive Council announced that on account of the continued illness of the late Treasurer, Dr. J. Lee Morrill, Dr. A. Ernest Gallant had been appointed to that office.

Weak Foot and Its Treatment.—By Dr. Carl R. Kepler. Under this head, the author included: (1) The nondeforming, painful weak foot; (2) the deforming weak foot, without spasm; (3) the spastic deforming weak foot or flat foot. Before taking up the treatment of this condition, which he regarded as the most common of all painful deforming processes the human body was subjected to, he stated that hand in hand with the trend of civilization had developed the distorting and so-called stylishly beautifying feature of our footwear, and the shoemaker was confronted with the necessity of either building the same according to popular fancy, or losing his business. The resultant misshapen leather boxes into which people now squeezed their feet were of so many varieties that it was impossible to describe them, and he emphasized the fact that these shoes were one of the main causative factors in the development of adult weak foot. As a prophylactic and curative measure he mentioned, 1. Correct shoes: In the incipient stage, when only indefinite pain and weakness were complained of, and before any deformity or stiffness had developed, a well built shoe, combined with graded, corrective exercises, was usually sufficient to overcome the affliction. A high lace boot was ordered, reaching up to and including the ankle, not because the constriction of the latter was a necessary adjunct to efficiency, but because it seemed

to be the only kind of footwear that would fit snugly, hold the foot evenly, and retain its shape. 2. Correction: Before fitting any corrective brace, and also after its application, it was of the utmost importance to bring the general tone of the foot structure, as well as of the muscles and tissues, into as nearly a normal condition as possible, thus to retain them and actively aid in reducing the deformity itself. To achieve this, he employed active exercises, such as adduction and dorsiflexion; rising on the toes, and board walking. As further aids, he employed manipulation, both manual and mechanical. Complications had to be met and treated as they arose. Massage, electricity, and vibration were valuable aids in overcoming muscular weakness and circulatory disturbance. Other adjuncts that he had found of value in certain cases were hot foot baths, medication, retention, built-up shoes, adhesive plaster dressing, and braces. Of the latter there were legion, but the salient feature of the brace was to train the act of walking and force the foot structure continually into its normal attitude, as well as to overcome the apparent deformity. In certain severe and selected cases, operation was justifiable, but as a general rule he deemed it advisable to try less radical means before resorting to it. In the advanced type of flat foot, in which correction of the deformity either actively or passively was impossible on account of the absolute rigidity and marked tenderness, the administration of an anesthetic was indicated. Dr. Keppler said that while the treatment he had outlined in his paper was long and tedious, unhappily a deformity was not a diseased spot which we could cut away. It had to be slowly and gradually overcome. As there were no two normal feet alike, so there were no two misshapen feet alike, and individual, careful treatment was therefore of prime importance.

Results in the Treatment of Congenital Dislocation of the Hip by the Bloodless Method.—Dr. Dexter D. Ashley stated that after the flood tide of popular enthusiasm following the memorable visit of Dr. Lorenz to this country four years ago, which imparted a marked stimulus to the work of the orthopedic surgeon in general and to the study of the congenitally dislocated hip in particular, a strong ebb tide soon set in, due to disappointments of various kinds, and enhanced by the overexpectations of profession and laity, through a lack of understanding of the limits of the operation in varied hands, and of the long and careful after-treatment that was necessary, to which might be attributed many failures to obtain good functional results. During the past three years, however, the operation had regained ground in America, more operators appreciating its application and limitations, and reporting increasingly favorable results. Dr. Ashley said that while we should not conclude that this was the only method to be used in all instances, recent statistics had raised the percentage of successes over those quoted by Lorenz and his followers in 1902. This was principally due to the acceptance of good functional results, instead of considering as cures only those anatomically perfect. It was, of course, impossible to have an anatomically perfect hip where there was deformity of the head, or a coxa vara or valga, even if the deformed head was placed within the acetabulum. A careful study and record of conditions found in each case before operation would help to eliminate those to which the method was inapplicable, and would reduce the failures from the operation to a negligible quantity. Where chances were taken which were not authorized by the limitations of the operation, the results should not enter into statistics of those cases to which the operation was generally considered applicable. After quoting the statistics recently collected by Dr. W. G. Stern of Cleveland, Dr. Ashley said he had operated seventy-nine times for congenital dislocation of the hip by the bloodless method, with the following results: In twenty-nine an anatomical reposition was obtained; in twenty-five there were good functional results, and nineteen were improved. There were six failures, although two of these considered themselves very much improved. Five of the six failures were beyond the age limit, and the sixth was one of his early cases. Of the seventy-four cases suitable for statistics, many were beyond the age of selection, which was from three to five years. Some had been previously operated upon, thus reducing very materially the possibilities of success when the first operator did not succeed in making an anatomical reposition. Many of the patients were poor, and the parents were negligent in regard to bringing the children for after-treatment or supplying them with modified shoes. Others resided at a distance, and were so situated financially as to make careful observation impossible at the critical stage of the treatment. In spite of these adverse conditions, he had succeeded in getting 73 per cent. of very good functional results, the patients walking with a scarcely perceptible limp, and 98 per cent. of functional improvement. While perfection was not attained by this method, yet he contended that the results were better, on an average, than with the open operation, while danger to life during the age of selection was almost *nil*. In connection with his paper, Dr. Ashley showed a number of patients upon whom he had operated, together with a series of skiagraphs.

Affections of the Sacroiliac Joints.—Dr. Henry Ling Taylor, who presented this paper, said it was strange that one of the largest and most important joints in the body had attracted but little attention either from anatomists or surgeons. Standard anatomical works were brief and unsatisfactory in their descriptions of the form and function of these parts, and even the more elaborate treatises differed among themselves as to the size and location and even the existence of a synovial cavity, and still more as to the existence of motion under normal conditions, many classing the joints at the sides of the sacrum as fixed, others as movable or slightly movable. This was no doubt due in part to the variations presented by different subjects and at various ages. It seemed to be true that these joints varied in structure in different individuals and under different conditions rather more than most joints. Obstetricians had been for a long time interested in the structure and function of the pelvic joints, and had recognized the considerable degree of mobility which supervened in these parts during pregnancy. This occasionally was of such extent as to give rise to extreme disability and entire loss of locomotion in the late months of pregnancy or after delivery. It frequently occasioned pains and less serious interferences with locomotion whose cause was often unrecognized. The increased mobility at the iliac joint in parturient women permitted a pubic separation of several centimeters after symphyseotomy, and this was seldom followed by permanent disability. When the pubic separation amounted to five to seven centimeters, the ligaments in front of the iliac joints were partially peeled off with the periosteum, and partially ruptured. The pubic joint, the joints of the spine, and probably all the joints of the body participated in this puerperal relaxation. Infections of the iliac joints after parturition had also been reported, and this was briefly the state of our knowledge when Goldthwait and Osgood of Boston published their paper on the pelvic articulations in the *Boston Medical and Surgical Journal* (May 25 and June 1, 1905), in which they showed from anatomical investigation and clinical observation that the iliac joints were normally movable in men and women, and that they were subject to relaxation, strains, displacements, and infections; in short, to the affections of which the larger joints were subject. The diagnosis of iliac affections from disease of the hip joint was easy, as with the latter motion at the hip was more or less restricted; in iliac disease this was not the case, excepting when the thigh was flexed with a straight knee. In primary sciatica there was pain in the sciatic distribution, and tenderness over the nerve trunk; in iliac affections there was tenderness over the iliac joint, and

usually none over the sciatic. In sciatica, raising the extended leg would cause pain in the sciatic rather than in the iliac joint, and raising the leg of the unaffected side would not cause pain, although it often did in iliac affections. This maneuver might also cause pain in the lower back in rheumatoid and other affections of the lumbar spine. Here the possibility of a complicating iliac affection should be borne in mind, and the occasional occurrence of sacral disease should not be forgotten. The prognosis was good in a considerable proportion of cases under proper treatment. A certain few were fairly obstinate, and could be only partially relieved. The treatment for laxity, irritation, or inflammation was pelvic strapping with two-inch adhesive plaster just above the trochanters, as an emergency measure; the adjustment of a pelvic belt or girdle, the use of a special corset reinforced by shaped steel bars, and provided with a pelvic belt, or a long plaster jacket or corset firmly grasping the pelvis. Recumbency was necessary in a few of the cases. All cases of obscure pains across the sacrum, in the sacroiliac region, behind the hip and down the legs, with more or less disability in standing, sitting, and lying, so frequent in gynecologic, neurologic, and general practice, should be carefully examined for affections of the iliac joints. If this was done, many obscure, tedious, and seemingly hopeless cases might be transferred from the list of incurable to that of curable affections.

Posture as an Aid in the Diagnosis of Bone Lesions, Before the Occurrence of Deformity.—By Dr. Reginald H. Sayre, with lantern illustrations. The speaker said it frequently happened that the child was brought to the orthopedic surgeon with the statement that it turned its toes in, and the request was made that it should be caused to turn its toes out. Investigation of these cases almost invariably showed that the pigeon-toes was a voluntary act on the part of the child, taken in an unconscious attempt to protect a weak arch from the strain of weight-bearing. Knock-knees not infrequently lay behind the pigeon-toes as a cause, the weight being brought in consequence of the knock-knees much more on the inner than on the outer border of the foot if held in the usual position, and the child turned in its toes because it was more comfortable in that position, and the surgeon who compelled it to turn its toes out without first remedying the knock-knees was doing more harm than good. This attitude of pigeon-toes, Dr. Sayre said, was typical of a number of so-called "bad habits" which were held responsible by parents for various deformities, whereas the truth was that the habit was only the expression of motion along the path of least resistance, the child assuming certain postures, or walking in a peculiar manner because certain abnormalities of structure rendered it easier to do this than to perform the motion in the usual way. The child was frequently scolded for doing what it could not help doing, and the underlying influence which produced the habit was not investigated. Children were scolded for being inattentive when the fact was that they were deaf. Efforts were made to correct a forward stoop of the shoulders by braces, when a myopia should have been relieved by properly adjusted glasses, and the speaker said he had seen the walk of Pott's disease caused by an effort to relieve the spine from injury ascribed to a desire to imitate the peculiar gait of a fat negro cook. When André in 1636 described orthopedic surgery as "the art of preventing and correcting deformities in children," he included a part of the subject that had frequently been neglected in spite of its importance. Almost all the acquired deformities of the body were the result of disease which had been present for long periods of time, and which would have been discernible to those who knew how to properly interpret the danger signals which nature hung out for our information. The marked deformities only occurred after long periods of time, and could usually be prevented if the cause which produced them was recognized early in the disease.

Dr. Fred H. Albee said that some time ago, in attempting to look up the minute anatomy of the sacroiliac joint or synchondrosis, he was much surprised to find such a marked disagreement among the most prominent anatomists and gynecologists as to its histology and macroscopic anatomy. Morris, for example, held that even the presence of synovial membrane at all was not constant, stating that he believed it more apt to be present in the female. Luschka believed that a small amount of synovial membrane was always present, and that it increased in size at the time of pregnancy. Cunningham believed that hyaline articular cartilage existed usually. Testut, the great French anatomist, mentioned certain folds of synovial membrane occurring here and there on the margins of fibrocartilage. Morris denied the existence of appreciable movement at this joint, while Williams and Kuttner claimed that movement always existed. Dr. Albee said that when we considered the mechanism of this articulation, there was no reason to wonder at the presence of movement, sprain, and other affections which large joints were subject to. He had proved to his own satisfaction that it was a true joint. At the Cornell Medical School he had dissected forty sacroiliac joints, and the results were briefly as follows: Synovial membrane was found in all cases; the synovial cavity was as constant in its size and relations as that of any other large joint; distinct movement was measured in every case excepting one, and in that instance the joint was ankylosed from an existing osteoarthritis. The thinness of the capsule on the internal pelvic aspect of this joint was of importance surgically, in that the joint, when infected, was so apt to drain into the pelvis, thus causing a pelvic peritonitis.

Dr. A. Ernest Gallant, in referring to the treatment of weak foot, said that as a pupil of Dr. John Ridlon he had always made use of intoeing in running and dancing. He said that last January he had a patient who suffered from pain in her limbs in the late stages of pregnancy, and during a forceps delivery the pubic joint was heard to crack. After delivery the patient suffered excruciating pain; there was inability to move the legs and the same crackling noise whenever she attempted to draw up her legs or change from side to side. All of these symptoms were immediately relieved on tightly strapping the pelvis. The soreness that patients sometimes complained of after operation, Dr. Gallant said, he relieved by massage and change of position as soon as the effects of the ether had passed off.

Dr. Franz J. A. Torek, in discussing Dr. Keppler's paper, said he thought the orthopedist could rightly consider it within his province to superintend the manufacture of lasts upon which shoes for normal as well as for weak or deformed feet could be properly and scientifically fitted. Such work would be regarded in the line of prophylactic treatment, and would in nowise lower the dignity of the profession.

The discussion was closed by Drs. Keppler and Sayre.

Chicago Medical and Chicago Laryngological and Otological Societies.

At a joint meeting of these societies, held March 20, 1907, Dr. E. Fletcher Ingals read a paper entitled "Relation Between Diseases of the Faucial Tonsils and Rheumatism." He drew the following deductions: (1) He had gradually fallen into error regarding the relation of tonsillitis and rheumatism, and that what had appeared to him merely casual was in fact due to an identical cause for the two in from thirteen per cent. to possibly twenty-nine per cent. of all cases of acute tonsillitis. (2) Forty-five per cent. of the cases of tonsillitis had a rheumatic history, but sixteen per cent. of other affections of the throat and chest also had a rheumatic history, so that not more than twenty-nine per cent. of the cases of acute tonsillitis could fairly be attributed in any way to the rheumatic poisons, and more than half of these were very doubtful. (3) Among

his patients only nineteen per cent. gave a history of previous attacks of articular rheumatism and eighteen per cent. a history of muscular pains that they ascribed to rheumatism. (4) Eight per cent. of the cases of acute tonsillitis were attended by, or immediately followed by, articular rheumatism; the same number claimed to have had muscular rheumatism, while in five per cent. the rheumatic attacks immediately preceded the angina. (5) There was not as yet sufficient evidence to prove that the tonsil was the only or even the chief portal of entrance for the rheumatic poison. Considering, however, that acute articular rheumatism represented a mild type of septic hematogenic infection of the joints, there was no reason why the tonsil with its notorious facility for infection with pyogenic germs should not, possibly even frequently, assume the rôle of an infected wound leading to septic consequences of a systemic nature. These septic conditions varied in degree and location, and rheumatism was perhaps one of the phenomena. (6) The evidence did not yet justify the belief that inflammation of the tonsil might prevent or take the place of an attack of rheumatism. (7) The statement that the acute beginning of muscular rheumatism was nearly always preceded by tonsillitis was not supported by the histories of his case, as in only two per cent. did muscular rheumatism follow tonsillitis. However, in six per cent. muscular pains that were called rheumatism attended the tonsillitis, although they may have been due to the fever attending the inflammation of the tonsil. Dr. James T. Campbell followed with a paper in which he discussed the relation between disease of the faucial tonsils and enlargement of the glands of the neck. Dr. Charles M. Robertson discussed the occurrence of tuberculous diseases of the tonsils. Dr. Joseph A. Capps referred to the type of cases with acute cervical adenitis that occurred, especially in children, with a sore throat. This combination of sore throat and adenitis was important (1) because the combination had in the last year been more prevalent than usual; and (2) because the etiology of these infections was interesting. He described in detail the clinical picture of such cases. Dr. Daniel N. Eisendrath said that cases of acute enlargement of the lymph nodes of the neck probably corresponded to some extent with those described by Pfeiffer in 1899 as glandular fever. In the cases which he had seen the enlargement of the lymph nodes was out of proportion to the height of the temperature. He cited a case. There had been eleven undoubted cases of primary tuberculosis of the tonsil reported, the majority of them having been verified by autopsies and by finding primary tuberculosis of the tonsil, in which there were no other tubercle bacilli found in the body. A surgeon in operating for tuberculous glands of the neck should also remove the tonsils and adenoids. As to the relation between appendicitis and tonsillitis scarcely a winter had passed during the last two or three years without surgeons having seen tonsillitis in children followed by typical attacks of appendicitis, so that clinically the association of the two diseases was quite well established. Dr. Robert H. Babcock said that in a very large percentage of cases the portal of entrance of infection was the tonsil. A large percentage of the cases he saw were instances of some form of heart disease, and nearly all which he had investigated, since his attention was drawn to the subject a good many years ago by the researches of Fritz Meyer, had shown either chronically diseased tonsils, or a history of previous sore throat, and many times a tonsillitis. The trend of investigation was to the effect that the old notion that acute articular rheumatism was a blood disease in the sense of its being due to some chemical irritant must be abandoned; in fact, it was a specific disease, and many observations had been made which go far to prove that the microorganism responsible for attacks of acute articular rheumatism of the classical type was the diplococcus rheumaticus. As to the importance played by follicular tonsillitis in the production of acute endocarditis, Dr. Babcock cited the case of a young man who developed malignant endocarditis from which he died. Autopsy substantiated the diagnosis which was made during life. Dr. Frank S. Churchill said that in children the pediatrician did not see an arthritis as the most common and frequent manifestation of rheumatism. He saw rather endocarditis. Other manifestations of rheumatism were the subcutaneous enlargements which Cheadle and other Englishmen spoke of frequently; also erythema and pleurisy. Some English writers spoke of attacks of appendicitis as a manifestation of rheumatism. The speaker then went on to say that in his opinion chorea was another manifestation of rheumatism. The subject was further discussed by Drs. Elmer L. Kenyon and William L. Ballenger. The latter said that his experience had shown him that to remove the atrium of infection we should remove the tonsils to the depth of the crypts, and the easiest and most certain way to do that was to take away the tonsil with its capsule.

Chicago Surgical Society.

At a meeting held March 1, 1907, Dr. Allan B Kanavel read a paper on "Surgical Intervention in Leontiasis Ossea." Up to the present time the feasibility of surgical intervention for the cure or palliation of leontiasis ossea had not been carefully considered. The analysis of the cases noted in the literature, with the report of one observed by himself, was made for the purpose of determining whether or not such intervention was justifiable. And in case of operation, of deciding to what extent it should be carried, and what were the probabilities of curative or palliative results. Thirty-five so-called typical cases have been recorded and a careful study made of nineteen skulls. The general division of the cases may be made into: 1. Isolated bones involved. 2. Hemihypertrophy of the face and skull. These cases are always most marked in the anterior portion. 3. Bilateral involvement of certain bones. 4. Involvement of the entire face and skull. In these cases the inferior maxilla was frequently uninvolved or not mentioned. In relation to cerebral compression it was noted that fourteen patients showed symptoms which could be attributed to cerebral compression, and in at least half of these operation would have been of benefit to the patients. Seventeen of the thirty-five cases showed involvement of the orbital cavities. The eyes were pushed out by the increasing bony deposit, and this proptosis practically always preceded evidences of optic neuritis, and there was every reason to believe that the blindness was due primarily to the encroachment upon the orbital cavities. Many of the patients lived for years after blindness intervened. After adding the bibliography, the reports of the cases, and the skulls, the article was summarized as follows: "(1) Operative procedures are justifiable in a certain proportion of the cases. (2) No well defined operation can be suggested as a curative measure. The pituitary body has been observed enlarged in only one case and there microscopical examination is lacking. Further careful examination should be made when opportunity presents itself. (3) Palliative operations should be done to relieve cerebral compression, and encroachment upon the orbital and nasal cavities. The indication for these procedures is clear; the diagnosis can be made, and relief from symptoms with the preservation of sight and mentality for years can be expected. (4) Obstruction of the blood supply and operations for cosmetic purposes may be considered. (5) The relationship between acromegaly, von Recklinghausens' disease and generalized trophic changes in bones on the one hand and so-called leontiasis ossea on the other cannot be stated at the present time, therefore the latter should not as yet be classified as a pathological entity, although its clinical individuality should be retained."

St. Louis Medical Society of Missouri.

At the weekly meeting, Saturday, February 16, Dr. John Green, Jr., reported that the first meeting of the Ophthalmic Section had been very successful. Of a total of twenty-five members twenty were present, and there were eight contributions to the program. Dr. Jesse S. Myer gave an interesting demonstration of esophagoscopy on a patient having stricture of the esophagus. He called attention to three principal uses of the esophagoscope, viz., diagnosis, removal of foreign bodies, and as a most valuable aid in treatment of strictures. He emphasized the point that the use of the esophagoscope was attended with no danger if the obturator was removed as soon as it had passed the cricoid cartilage, and if the instrument was passed further under direct scrutiny of the operator. Papers on medical education in America, Paris, London, Berlin, other German universities, and Vienna, were read by Drs. John Young Brown, C. G. Chaddock, Llewellyn Williamson, A. E. Meisenbach, W. C. Gaylor, and Louis Rassieur. Dr. Ravold, discussing the question of post-graduate study, said that America had a great deal to offer in facilities for medical education. After a student had finished the prescribed medical course and had spent one or two years in a hospital or with some good clinician, he was ready to look about to learn a specialty. America had splendid laboratories and just as great masters in charge as would be found anywhere. They would take one as far as they could and push him off into original research. We had the best surgeons the world has produced. The question was, with all these advantages should one go abroad? It took a tremendous time to learn a new language. He had a slight knowledge of German, but when he arrived in Germany it had all evaporated. For the first five weeks he had difficulty in making his wants known. For the first three months, although studying German six and seven hours a day, he was unable even to catch the drift of the lectures. During the next three months he was able to catch sentences from the lectures. At the end of a year he could catch the import of most that was said and felt elated over his achievement. After eighteen months he could understand all that was said, translate it mentally, and take notes in English, still unable to think in German. He said he did not believe himself duller than the average student, but that he wanted to tell the truth about medical education abroad. He believed, however, that it paid to study abroad, for the great cultural advantages and for the reason that it broadened one's views and made one capable of seeing good in the accomplishments of men in any part of the world.

Philadelphia Neurological Society.

At a stated meeting held March 26 Drs. J. H. W. Rhein and Herbert Fox presented a communication entitled "Abscess of the Brain in a Chimpanzee." The animal had been on exhibition in the Zoological Garden and had on several occasions been tested with tuberculin. While under observation the animal developed paresis of the members of one side of the body. Sensibility appeared to be uninvolved. After death three abscesses were found in the brain, one in one hemisphere and two in the other, and bacteriologic examination of the contents of these disclosed the presence of tubercle bacilli. Dr. Alfred Reginald Allen presented a communication entitled "Fat Crystals in the Spinal Cord." He reported the presence of such crystals in the posterior columns of a spinal cord that he was studying from another point of view and he discussed the question as to whether they were artefacts or the result of changes in the cord prior to death. Dr. H. H. Donaldson presented a communication entitled "Studies of the Choroid Plexus." He detailed the results of work done by several students in the University of Chicago and which tended to show that the choroid plexus possessed the properties of a secreting structure, as indicated especially by the changes in the protoplasm and in the position of the nuclei of the cells of the plexus. Dr. G. L. Streeter made a demonstration of models, showing the "Development of the Corpus Callosum."

Changes in the Position of the Heart with Increase of Pressure in the Left Pleural Cavity.—M. V. Carletti discusses the reasons for the changes in the position of the heart when the intrathoracic pressure is increased by the presence of fluid or air in the pleural cavity, and gives us these conclusions: That the heart always changes position in obedience to certain laws, and its position is intimately related to the anatomical development and modifications in position of the surrounding organs. The volume of the heart and liver, and the inclination of the diaphragm are the principal factors which influence the position of the heart. The heart changes position *in toto* toward the right, especially if it is large and the inclination of the diaphragm is slight. It changes position *in toto*, becoming vertical and rotating on its axis, so that the left ventricle becomes anterior and the right ventricle faces posteriorly when there is a more marked inclination of the diaphragm and the heart is small. It is carried to the right when the inclination of the diaphragm is great; the apex is near the xiphoid appendix, and the base is in a plane much more posterior than normal. In all three of these cases the apex is to the left of the base. There is a rare possibility that the apex may be carried to the right of the sternum further than the base when there is little inclination of the diaphragm and the heart is very small.—*Il Policlinico.*

Anomalies of the Vaginal Entrance.—Leonardo Tranchida tells us that atresia of the vagina may be either congenital or acquired. When congenital it is the result of an early anomaly of growth, before the twelfth week of intrauterine life, at which time the ducts of Müller are entirely united to form the genital tract. Such anomaly may be caused in many ways—arrest of development, circulatory changes due to trauma, twisting of the cord, infections, intoxications. Any one of these agencies may produce congestion, hemorrhage, disturbances of nutrition, which affect the trophic conditions of the organs, new growths or overgrowth of the neighboring organs causing pressure on the growing genital organs; hyperplastic overgrowth of the epithelium of the vagina causing the walls to adhere by contact. Acquired atresia may be due to general infections, or local pathological processes, in the child or adult. Such are catarrhal, croupous, diphtheritic, or phlegmonous vaginitis, obstetrical injuries, puerperal infections, and caustics used in medication.—*Il Policlinico.*

Chloroform Anesthesia Preceded by an Injection of Scopolamine.—Psaltoff concludes, from his experience, that scopolamine injections before the administration of chloroform are productive of calm sleep which suppresses apprehension of operation; that during the course of anesthesia the period of excitement is suppressed, as well as the nausea and vomiting; that the respiration is always regular, and that the patient remains quietly sleeping for several hours after the administration of the chloroform. In certain cases late nausea and vomiting have been noted, but in no instance has contracture, hemorrhage, or serious symptoms of any kind been observed. This investigator, who has anesthetized 11,000 patients with chloroform without one death, believes that the addition of the scopolamine is advantageous and should be employed. Walther reports success in this same line of work and advocates the employment of the scopolamine with the chloroform, declaring that it, together with small doses of chloroform, may be administered even to hepatic and cardiac patients.—*Le Bulletin Médical.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending April 13, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	466	200
Diphtheria	341	39
Measles	469	6
Scarlet Fever	438	14
Smallpox	1	—
Varicella	69	—
Typhoid Fever	80	8
Whooping Cough	55	7
Cerebrospinal Meningitis	17	15
Malarial Fever	..	.....
Totals	1936	289

Suppressed Gout.—Guthrie Rankin, in considering the gouty state, adopts as a working hypothesis the fact that the exciting cause is a toxemia probably originating in the upper part of the gastrointestinal tract. He regards the following characteristics as essential symptoms: gastric disturbance; a history of dietetic habits of excess, or irregularity on the part of the patient, or a record of gouty antecedents in his family; and a more or less pronounced and permanent degree of plus tension in the arteries. The writer then cites the history of two cases which illustrate different stages in the progression of this pathological condition. Neither patient had ever suffered from true gout. Both, however, had gouty antecedents, were beyond the prime of life, and had undergone more than the average amount of work and worry. Gastric disturbance was the first evidence of the trouble. Vascular tension, arterial degeneration, and threatened cardiac failure, in order led up to the brink of angina pectoris and Bright's disease. Neither patient would believe the malady to be gouty. The writer then mentions various other effects of the gouty poison aside from those relating to the vascular system. He speaks of pancreatitis as being sometimes not impossibly a direct consequence of irregular gout. The writer concludes by giving various directions concerning treatment. He considers any form of tender meat wholesome, but it should be taken sparingly. Vegetables, excepting rhubarb and tomatoes, may all be taken if thoroughly cooked. He does not see why sugar should be forbidden in cases in which there is no glycosuria. Spices, rich sauces, and pickles should be avoided. Fruit may be taken, ripe or cooked. Salt should be limited in amount in the dietary of the gouty. Constipation must be guarded against.—*The Practitioner.*

Clinical Considerations with Reference to Thirty Cases of Nephropexy.—P. Fiori says that surgical interference is positively indicated in cases of movable kidney when this is complicated by albuminuria, uronephrosis, cylindruria, hematuria, or crises of strangulation of the kidney, as well as in grave gastrointestinal complications which manifestly depend on the alterations dependent on the prolapse of the kidney; also in severe nervous disturbances with pain dependent on nephroptosis, which are not relieved by orthopedic measures. It is relatively indicated in those cases which are benefited by orthopedic treatment in which there are not anatomical changes in other organs resulting from the position of the kidney. It is contraindicated in splanchnoptosis unless the condition is aggravated by intrinsic kidney changes of a nephritic type. When associated with genital lesions treatment for these is to be used, except when there is a blood dyscrasia resulting from the general condition. Nephropexy is allowable whenever all other means of treatment have been tried without relief and the symptoms, especially nervous, are increasing. Fortunately the perfection of the clinical indications makes this a rare proceeding of last resort, and its value is enhanced on account of the absolute harmlessness of the operation.—*La Riforma Medica.*

The Removal of Foreign Bodies from the Esophagus.—Franke has found that it is not always necessary to open the esophagus in order to remove foreign bodies which cannot be extracted by instrumentation through the mouth. The method he recommends if the foreign body is in the upper part of the esophagus is to cut down upon this tube in the manner prescribed for esophagotomy, but before incising the esophagus to locate the impacted object. In many cases it will be found possible, by careful manipulation from without with the fingers, to work it gradually upward until it can be reached with an instrument passed through the mouth. Franke describes one case in which he was able to extract in this way a set of false teeth which had been swallowed and had become impacted in the upper part of the esophagus, and he advises that this simple maneuver should always be resorted to before exposing the patient to the risks that accompany esophagotomy.—*Zentralblatt für Chirurgie.*

Milk and Tuberculosis.—Marchand refers to the work of various modern investigators in this subject. A number of authorities, including Calmette and Guérin of the Pasteur Institute, have concluded that the principal portal of entry of tuberculosis into the organism is the intestine, and that this disease can be introduced by the ingestion of milk taken from tuberculous animals. Every infectious malady of the cow renders its milk dangerous to the health of the consumer. Even the food eaten by the cow influences the quality of its milk. But cooking the milk—sterilization, pasteurization, or boiling—distinctly modifies its constitution. Such a process tends to convert the lactose into caramel. A part of the albuminoid element it makes insoluble. It affects as well various salts contained in the milk, especially those necessary to the bony tissues of the new-born. Even if it kills the injurious microbes, it has, nevertheless, the disadvantage of destroying the natural digestive ferments which the milk contains, besides changing its taste. Recent investigations show that next to maternal milk normal raw milk from a healthy animal, and naturally sterile, offers the best conditions of alimentation for young children. It is also the best form for patients or old people. The writer calls attention to the importance of employing tuberculin in order to distinguish diseased animals from healthy ones. The greatest care should be taken to use the milk of healthy cows only.—*Le Nord Médical.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 12, 1907:

SMALLPOX UNITED STATES.

			Cases.	Deaths.
California, San Francisco	Mar	21–30	1	..
Kansas, Topeka	Mar	16–30	3	..
Massachusetts, Lawrence	Mar.	23–30	19	..
Minnesota, Winona	Mar.	23–30	2	..
Missouri, St. Joseph	Mar.	22–29	10	..
New Jersey, Newark	Mar.	23–30	2	..
New York, 11 Counties	Jan.	1–Mar. 2	56	..
Broome County	Jan.	1–Mar. 2		Epidemic
North Carolina, Greensboro	Mar.	23–30	3	..
Ohio, Canton	Mar.	2–9	2	..
"	Mar.	25–31	1	..
South Dakota, Sioux Falls	Mar.	23–30	1	..
Tennessee, Nashville	Mar.	23–30	1	..
Virginia, Richmond	Mar	23–30	1	..
Washington, Spokane	Mar.	23–30	12	..
Wisconsin, La Casse	Mar.	23–30	1	..

SMALLPOX—FOREIGN.

Brazil, Bahia	Feb.	16–Mar. 9	6	..
Pernambuco	Feb.	1–15	..	64
Canada:				
New Brunswick, Kent Co	Mar.	23–30		Present
Nova Scotia, Antigonish Co	Mar.	23–30		"
Colchester Co	Mar.	23–30		"
Digby Co	Mar.	23–30		"
Halifax Co	Mar.	23–30		"
Pictou Co	Mar.	23–30		"
Yarmouth Co	Mar.	23–30		"
China, Hongkong	Feb.	16–Mar. 2	31	24
Ecuador, Guayaquil	Feb.	16–28	..	5
France, Canne	Feb.	1–28	1	1
Italy, General	Mar.	7–21	34	..
Mexico, Guerrero, State	Mar.	27		Epidemic

SMALLPOX—INSULAR.

Philippine Islands, Manila	Feb.	23–Mar. 2	2	..

YELLOW FEVER.

Brazil, Manaos	Mar.	2–16	6	..
Para	Mar.	9–16	4	2
Cuba, Habana	April	5	1, origin Paz.	Nuova
Ecuador, Guayaquil	Feb.	16–28	..	13
Mexico, Merida	Mar	17–23	2	1
West Indies, Trinidad, Port of Spain	Mar.	9–16	1	1

PLAGUE—INSULAR.

Hawaii, Honolulu	April	7	..	1

PLAGUE—FOREIGN.

Brazil, Bahia	Feb.	16–Mar. 9	10	..
Pernambuco	Feb.	1–15	..	3
Peru, Chiclayo	Feb.	28	4	4
Eten	Feb.	28	6	4
Lambayeque	Feb.	28	2	1
San Pedro and Pacasmayo	Feb.	28	2	.
Truiillo	Feb.	28	2	..

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Original Articles.

OBSERVATIONS ON ARTERIOSCLEROSIS.

By H. NEWTON HEINEMAN, M.D.,

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Arteriosclerosis before old age is a disease of exhaustion and of excess. The term angiosclerosis is used because veins as well as arteries are often affected. Atherosclerosis is suggested because atheroma is a stage of arteriosclerosis.

The disease is increasing steadily in America, and even Germany shows 22 per cent. in 11,000 cases of general mortality.*

Etiology.—Pressure in ordinary physical or mental daily labor with want or excess in life's accessories maintained for long periods, especially in neurotic subjects, acts to cause arteriosclerosis. Excess in stimulation, whether in tea, coffee, tobacco, alcohol or prolonged improper diet, which alter the alkaline blood reaction and constituents are contributing causes.

Age.—Appearing rarely in the young (shortly after puberty), it is usually specific before 40 years, occurs generally between 45 and 55 years, later generally approaching the usual senile type. Sex shows in favor of the males, as comparatively few women are affected. Inheritance† acts here as elsewhere through inherent weakness. Mental worry, strain, and neurasthenic conditions generally are of the greatest moment.

Gout and rheumatism are noted in one-half to one-third of all cases, and their acute form in older persons may start the trouble.

General infections, most commonly typhoid, influenza, scarlatina, diphtheria, severe follicular tonsillitis, erysipelas, in about the order stated, but also all exanthemata and infections, including malaria, are its causes, and especially when aided by predisposition and later exciting agencies. Local suppurations may in rare cases inaugurate slow vascular change.

Syphilis in from 15 per cent. (my own) to 35 per cent., according to individual practice, accounts for it.

Toxins.—External and internal toxins, whether from fatigue or from the body as in certain forms of obesity, diabetes, etc., from prolonged intestinal autointoxication, from vicious habits of overstimulation, or from atmospheric surroundings, such as noxious vapors or any poisoned atmosphere cause it

External injuries, such as repeated injuries to vessels by work, or excessive use of certain extremities, affect its origin and locality.

Pathology.—Normal circulation requires an unirritating medium, normal heart, and vessels, normal cardiac and circulatory vasomotor centers and nerves, and normal lymphatic conditions.

Arrested circulation at some point with intravascular irritation are cognate active requirements for arteriosclerosis. When, therefore, from circulating toxins and irritation within the vessels, local congestion, spasm, or other slowing of blood exists, then physical or mental overstrain causes in even greater degree than it does normally an aggravated state of circulatory arrest or spasm, and both required conditions are rendered more active.

Experimental pathology in the hands of Josué, Erb, Jr., and others has produced aortic and arterial changes in animals with the use of adrenalin injections. These changes resemble those of the senile and work type of arteriosclerosis with its marked calcareous degeneration, but with less or almost no intima lesion. These results bear largely upon our subject, but the exact function of the circulating poison introduced, and the element of spasm created, are still subjects for clearer definition.

The vessels in arteriosclerosis are generally diffusely affected, less often with nodular thickenings. All sizes of arteries may suffer. When veins are involved they have generally been previously acutely inflamed. Any set, single artery, or branch may be extensively or slightly engaged, leaving healthy places between. Internal arteries may be changed, while those of the extremities are little or not so, and the reverse. Influenced by the considered causes, certain arteries are more frequently involved; anatomical statistics vary, but approximately the following is the order of sequence: renals, aorta, splenic artery, crurals, coronaries, cerebrals, etc.

The primary and secondary lesions worthy of special reference here are these, among others:

Cardiac: muscle degeneration (myocarditis) with infrequent cardiac nerve involvement.

Renal: sclerosis of vesels and other changes producing the characteristic small asymmetrical irregularly granular kidney, with decided cortical changes specially marked in the glomeruli. Other varieties or hybrids of the granular, the chronic diffuse, and the parenchymatous nephritis may be found. Atrophic suprarenal capsules exist at times.

Splenic, and less marked gastric, mesenteric, or intestinal arterial changes result in visceral changes such as fibrous pyloric thickening, gastric and duodenal ulcer, intestinal thickening, atrophic spleen, or pancreas and chronic peritonitis. Such a gastric ulcer is here presented by specimen, such a duodenal ulcer was demonstrated to me by Dr. Longcope (Philadelphia).

Microscopical changes early show fat cells crowding the interspaces and fatty degeneration in the cells of the intima. This stage or condition, common also to anemia, etc., and therefore not characteristic, may clear up. Next the fat globules drop out of the changed cell bodies, cell proliferation occurs, new connective and cicatricial tissue takes the place of the intima, its few elastic fibers also suffering. Such changes often escape any but the closest scrutiny. Coincidently or subsequently other more patent

*Bahrdt: Leipzig Life Insurance Companies. Cong. f. Inn. Med., 1904.

†Huchard and Frank speak of hereditary aortitis.

pathological changes in the intima and media take place, those in the latter or former ultimately predominating according to type. Finally, the process passes from one to the other, or all of the three coats, least to the adventitia,* involving them in varying degree. Further cell production with new elastic formation, fatty degeneration, and atheroma of varying amount, with or without calcification, constitute successive changes. Atheroma† is simply degenerative change in the sclerotic tissue, and cannot anatomically or clinically be differentiated. The atheromatous degeneration often leads to erosion and secondary thrombosis (well seen in aneurysms, etc.)

Certain distinct types appear to present themselves pathologically.

The "specific type" involves the aorta generally, and the arteries of the nervous system (cerebral and spinal) more particularly. It advances along the aorta by sharply defined segments. It is mostly a media disease (mesarteritis) in the aorta, and produces cicatrices which decidedly involve the adventitia, also the intima, and give rise to a distinct multisacculated appearance of the aorta. The media may contain gummata or other specifically characteristic tissue, but the *Spirochæta pallida* has been found in only a few cases. It generally leads to aneurysmal formation.

As a post-syphilitic disease arteriosclerosis occurs not infrequently in the ordinary diffuse variety without any specific characteristic lesion. A special general arterial nodular form with specific microscopic tissue lesions, generally, however, as an acute affection known as periarteritis nodosa, occurs, and has been studied by Kussmaul, Bostroem, Mönckeberg, *et al.* Its specific character was formerly overlooked.

The "senile and labor type" involves the lower extremities most commonly, often the upper or both, and has marked calcareous change. Infrequently it is seen as a noncalcified type, with diffusely thickened tortuous vessels of almost the entire body. The heart is often relatively normal at times, may have moderate coronary thickening or advanced (non-disturbing physiological) coronary change, aside from muscular changes.

The "renal type" is the best understood with its granular kidney, general arteriosclerosis, hypertrophied left ventricle, and frequent termination with cerebral hemorrhage or aggravated renal trouble.

The "myocarditic type" with multiple arteriosclerosis, small or great, in various parts, marked myocarditis, is often complicated by embolism, and terminates from cardiac failure.

Clinical History.—Some cases of arteriosclerosis occur in young, growing persons, and are usually associated with a congenital or acquired (at puberty) insufficient vascular system. In a few of the working classes the working type of arteriosclerosis appears early in nervously disposed persons; possibly syphilis may influence this in some of them.

In adults under forty years of age syphilis is always to be thought of, and early apoplectic strokes arouse the same suspicion.

To us it has appeared that, apart from the renal form, most cases appear to present features in which one of three groups of symptoms predominate besides the generally prevailing ones. These are either angina, anginose, or angiospasm symptoms or signs, again myocardial, and thirdly neurasthenic.

The renal form, hitherto erroneously accepted as the type of all, manifests itself, as is well known, by long-continued occipital pressure and headache, a sense of fullness of neck, eye symptoms (recognizable in 30 per cent. of the cases), but which eye symptoms often improve later, advanced urinary signs as persistent granular or epithelial casts, and albumin in larger amounts, later by apoplectic strokes or uremic symptoms.

In all forms of arteriosclerosis, and more especially in those well established, disturbances of digestion are not only precursors of progressing disease, but become pronounced with its advance. Gastric and intestinal digestion becomes slow and imperfect, meals are longer in digesting, and the former quantities are not digested. Symptoms of gastric dilatation are not unusual, indigestion, gastric, and intestinal catarrh, oxaluric symptoms, and hepatic disturbances are very common, and abdominal arteriosclerotic colic appears.

Autointoxication from fermentation, constipation, or more directly from any diminished blood protective power or active bacterial increase is at all times a threatening factor of the disease. Constipation becomes very harmful, and, if persistent, often excites angina from autointoxication or from irritation, and nothing is more dangerous at such times than indiscreet diet, particularly game and fermentable food. Such errors as dilution and weakening of gastric juice by mixing quantities of liquid food with solids, induce serious cardiac difficulty mechanically from gastrointestinal overdistention, besides increasing the danger of autointoxication.

The presence of myocardial signs and symptoms is common to all groups. Heart signs which are most commonly met with are intermissions, arythmia, and changed character of heart sounds, with or without murmurs.

Aside from hemic and other subsidiary murmurs, simulated or secondary murmurs from a disturbed valvular orifice mechanically affected by the lesion in an adjacent orifice, are also to be reckoned with. Mitral stenosis is thus infrequently simulated in old arteriosclerotics from rigidity about the aortic valves, just as aortic regurgitation is sometimes simulated in severe mitral stenosis in the young.

The heart sounds are characterized by the lesions of myocarditis or of high blood-pressure, variably one or both. Absence of more or less muscular quality, and partial or complete hollow quality of first sound, are common with accentuated second sound. The more hollow the first the shorter and less clear becomes the whole second sound, always a matter of serious import. Intermissions longer or shorter are frequent, and depend, as they really do in most of their occurrences, upon reflected gastric, intestinal, or hepatic disturbances, if not upon direct autointoxication. Cardiac intermissions, while never desired, may be no indication of immediate, often not even remote, gravity, and in cases sometimes a sign of comparatively good import. Thus the occurrence of intermissions in late stages of threateningly fatal pneumonia gives a ray of hope even, for now the pneumogastric is controlling conditions somewhat.

Arythmia is frequent, often present for years in certain cases, and, if the irregularity be regular, less important than usual.

Tachycardia and bradycardia are both important and frequent, the latter less common, and both induce more serious trouble. The former is often met in neurasthenic or nervously disposed persons.

* Incipient adventitia changes arise from local causes, like injuries, etc.

† Two specimens were presented, one specific (36 years) and the other a senile aorta (80 years), with marked arteriosclerosis, without calcification or erosion showing diffuse atheromatous change, as proved by the red spots in intima and media produced by proper aniline stain.

Both must be considered relatively to the patient's normal pulse rate, and may be consistent, barring short lapses, with apparent good health for years if kept in check.

Angina may exist in its various types, and may occur in the mildest forms, often called false angina; it may present only parts of its characteristic phenomena of localized pains by sensations variously limited about the chest, neck, or arm; or the signs of facial and pulmonary angiospasm causing flushes with heat and dyspnea, and hurried breathing, or congestion of serous membranes, more commonly the pleura, of internal organs, the pulmonary, renal, hepatic, or of pharyngeal constriction, laryngeal obstruction; least serious is when swellings of the hand or arm, of the supraclavicular fossæ, or anywhere in the integument, occur, which latter are rarely accompanied by the heat and redness of erythemata. Angiospasm of the radials during angina attacks the artery, these varying in diameter, being in the same case alternately small and large, in others dilated during the attack, but in all cases evidencing high tension.

In the average case the disease may announce itself from a clear sky with angina pectoris and precordial or poststernal oppression, together or separate, and with various heart irregularities.

Dyspnea is apt to be a marked early symptom, less so later until complications such as aggravated hepatic, gastric, renal, or cardiac conditions set in.

Cardiac asthma with, in early cases, slight or abortive angina, becoming more pronounced later, is a frequent decided chest symptom.

Cheyne-Stokes respiration appears during times of intentness upon mental or physical work, when patients can be unobtrusively observed, and often in sleep, during apparent health. It is of course well known in serious conditions, as is also the Adams-Stokes phenomenon most commonly met in severe bradycardia.

Renal symptoms, such as occasional albumin and hyalin, with less frequent slightly granular casts, are found in two-thirds of our personal cases. Often nervous, or again digestive and hepatic disturbances from dietary errors, cause their reappearance.

The next important group is that which begins with nervous or neurasthenic symptoms: vertigo, irritability, and increasing difficulty in continued work and fear of it, unsteady handwriting, slight hesitancy in speech, especially when excited, impaired memory and mind, depression, emotionalism, and lacrymoseness, most important of all insomnia, and not infrequently melancholia and suicidal tendencies of a mild type, which disappear later.

A certain number of patients, more especially women, show early symptoms of bad air effects when in overheated or badly ventilated rooms, particularly in public, when oppression, dyspnea, faintness, tachycardia, cardiac irregularity, with generally nervous flushings and fear supervene. The intimate relation of neurasthenia and arteriosclerosis is especially worth noting.

Vasomotor Disturbances.—The importance which abdominal arteriosclerosis assumes, the changes which closer investigation will demonstrate in the abdominal plexuses, just as has been demonstrated in a moderate number of cases in the cardiac plexus, has special significance in producing the class of disturbances already described, and which may be accentuated under this heading. Angina from an apparently cloudless sky, or from varying neurasthenic influences, with its condition of small and contracted arteries during the attack, succeeded in some cases at its maximum by apparently paralyzed or widened peripheral arteries having equal or almost equal high pressure in both the contracted as well as the dilated condition, and passing over to the danger point, when the pulse becomes markedly quickened, is a condition which is significant. Congestions of portions of the face and mental disturbance replacing angina, and occasionally masking it and calling forth hysterical manifestations or associated nervous phenomena and the numerous angiospasms, are not uninteresting appearances.

Blood States.—Anemia in its various form is common. Often pernicious anemia is simulated in women, but the absence of macrocytes and nucleated red corpuscles differentiates this.

Blood pressure presents high tension during a certain stage of all cases, declining to a later low tension, or varies under nervous, cardiac, renal, digestive, blood, and special localized arterial conditions, such as diminished aortic elasticity.

Only 18 per cent. of my own unequivocal cases showed normal or lower pressure. Dunin, in examining 420 cases, found 300 (71 per cent.) with pressure above 150 mm. and 120 (29 per cent.) with low or normal pressure. Casting aside one-third of the 120, 80 (21 per cent.) unequivocal cases of the latter remained.

Von Basch has divided arteriosclerosis upon a combined symptomatic and pressure basis into: true arteriosclerosis when pressure is over 150 mm. with more or less persistent albuminuria, latent sclerosis with over 120 mm. and under 150 mm., and pseudosclerosis with 120 mm. or under, each with certain symptoms and signs. This division, except with the experienced, may lead to error.

The absence of symptoms referable to the heart condition met with not infrequently in the senile and work type, when coronary change is suspected and found at autopsy, is worthy of notice, and finds this physiological explanation: that so long as some initial impulse-giving muscular fibers about the venous sinuses remain, and a sufficiently contractile continuous muscular conductivity in the ventricle exists, fair heart action is possible. In other words, the sclerosis here does not menace the most vital heart portions, or else insufficiently, or, again, the gradual coronary change may have undermined the muscle less. Again, quiet disposition may influence this absence.

It is interesting to note the tendency in the mental and city patient towards central lesions, while in the purely senile, the labor, and country patient that towards peripheral lesions predominates.

Limping gait, described by Charcot and Erb, is characteristic of some cases. Carious teeth, as an accident or incident, are often met with.

Diagnosis and Differential Diagnosis.—The diagnosis is based upon the clinical history pointing to old infection of some kind, unusual persistent mental or physical strain, either or both, abuse of stimulant of any kind, symptoms of gradually increasing irritability, insomnia, difficulty in ordinary mental processes, with some cardiac and either gastrointestinal or renal symptoms, or all accompanied by signs of decided cardiac weakness or irregularity, or both, with altered heart sounds, recognizable change in pulse trace, and pressure and ophthalmoscopic changes. Naturally, as the arteries of different portions of the body are more or less greatly involved, whether the cardiac, the gastric, the cerebral, or others, the symptoms and signs will be more intense in their direction, as when with aortic and cerebral vessel change we may have neck and head rhythmic pulsation, so do other marked symptoms and signs occur in other combinations.

In the pulse tracing care must be taken to separate the early and the postmyocardial trace. Then, too, the venous pulse trace has value for judging the right heart, as the radial has more particularly for the left. I advise the use of the simple Dudgeon (unimproved) to begin with, and later the use of the Mackenzie or Jacquet* for two or three combined traces of pulse, apex beat, or venous† impulse, under the following precautions: (1) Adjust straps properly, using a right and left arm arrangement; avoid the tightening under the wrist, making it at the outside. (2) Take the lowest of the most characteristic traces obtainable, not the lowest trace of any kind. (3) See that trace is in the middle of the tracing paper. Above the middle may mean over, and below the middle, underpressure of the instrument. If a proper midway trace is impossible for any reason, note it always. Such tracings are always open to question. They become valuable under similarly noted conditions of other observers. (4) Always take every kind of trace singly, as well, so as to judge the correctness of each individual trace in a combined series.

In pressure the following observations are important: (1) The time of day affects the pressure, for it is apt to be higher after meals and in the morning in certain cases. A restless night lowers pressure. Pressure varies with mental state, medication, etc., and should be repeatedly taken. It should indicate arterial (P.A.) or capillary pressure (P.C.) in records. Then, too, systolic and diastolic pressure have value, and so has the differential pressure of these latter. (2) The instrument should be properly tested, well understood by the observer, so that he knows his own personal equation of error and its relative value to other instruments. My own preferred instruments are an Oliver of the old type besides the Boulimié‡ or combined Potain-Gaertner instrument, and occasionally the Riva-Rocci improved (Janeway).

Radiogram.—In seeking to decide questions of uncertain cardiac enlargement or of sclerotic arteries, I have this to say: The expert upon this subject, Geheimrat Prof. Moritz of Giessen reported (three years ago) that it gave him the correct right border in 68 per cent., the correct left border in 70 per cent., both borders correctly in 50 per cent., and both borders wrongly in 12 per cent. Despite the fact that no adequate picture is as yet obtained except in calcification, which in external arteries is appreciable to the finger, it is of great value in such aortic conditions, of confirmatory value in heart cases, and of diagnostic value in emphysema, chest deformities, etc., when other methods are dubious.

We must remember that Roentgen pictures are silhouettes. The source of light, its direction and intensity, if allowed to vary, give different results, as does also the least variation in the patient's position. A flat, wooden, unyielding table, marked off in squares on the top and bottom, and a quarter-inch metallic (lead) strip at the nipple level attached to the table across underneath, the patient laid on the table with shoulders, certain ribs, and other anatomical points plumbed to their respective squares on the table (and recorded), and the metallic line projected through the nipples in the photograph, give the only satisfactory results. Sitting or semiprone postures give doubtful pictures.

Well-marked angina pectoris, always the strongest evidence of coronary arteriosclerosis, points to probable general arteriosclerosis. Persistent or oft repeated angina within the twenty-four hours, despite careful (sedentary) and regulated habit and nitroglycerin administration, always points to coronary sclerosis with marked cardiac dilatation, even when percussion and auscultation leave a doubt. Exceptionally in phlegmatic and well-ordered persons, even marked coronary sclerosis may present only signs of myocarditis when aortitis is absent.

In marked aortitis, of which coronary sclerosis usually forms a part, some aortic dilatation is present, the aorta (and the right subclavian artery) is sometimes within reach, there is neck and head rhythmic pulsation (Musset sign), and the greater transverse aortic dullness can often be made apparent early by first gently percussing, noting its transverse area, then striking five or six finger blows over the aorta, when repercussion will show a diminished area (Cherchewsky). Retrosternal pains are more or less constant, the radials are unequal, often show the aneurysmal trace, and a roughened coronary artery projecting into the aorta may cause a loud obstructive murmur.

Myocardial cases manifest the symptoms and signs referred to, of the changed heart sounds, the first being early, parchment like, the second comparatively or really reinforced. When the first is distinctly hollow or tubular and the second thin, like the snapping of thin cord, marked dilatation exists.

A gouty history and gouty symptoms, and strong uric acid and its related conditions, accentuate the suspicion of arteriosclerosis.

Prognosis.—A recent authority has said: "From a general standpoint nothing can be done (except in syphilis) to lessen the existing influences upon the diminished arterial resistance." To this opinion I take decided exception. In 1895 I heard the pathologist, Thoma, say, "by avoiding the causes of increasing blood pressure, by proper hygiene and regimen, serious and fatal vascular disease might be anticipated. If it became possible to recognize arteriosclerosis sufficiently early, it would be easy to limit the danger of rupture of blood-vessels and aneurysmal formation."

My labors for the past ten years along the latter indicated lines have taught me their truth, and that well-directed medical experience and a patient's intelligent aid can check the increasing danger. Readjustment of physique and work, not always retirement from work, are needed on the patient's part. Are not five, eight, and ten years' prolongation of life, with more or less working capacity and in comparative comfort, as Nauheim has frequently demonstrated, of value? Is not one year, even, with clearer mind, restored mental balance, and ability to enjoy life, as I have seen, worth a struggle? In ten years at Nauheim, with many hundreds of such cases, mostly serious, the mortality during treatment has been three-fourths of one per cent., and in all my cases the entire mortality, including those who died at home any time after treatment to date, 2.6 per cent. (under 3 per cent). And I add here that no patient has died at sea. The dangers are, when landing, from overdoing and from the new temptation to indulge in food and drink to excess.

Treatment.—The treatment implies mental and physical adjustment of the patient to his recognized condition, besides the physical and internal remedies to undo or prevent further trouble. Work must be diminished and limited for a long time to what is essential, and sources of irritation removed or ignored. A proper methodical life, hygienic surroundings, proper diet, regulated sleep and rest periods,

*The Jacquet instrument with two tracings is more practical than that with three.

†Use grooved venous pulsometer.

‡French standard 10 or 12 equals the German and others of 100, 120, etc.

and above all properly controlled method in everything, constitute the only safeguard against increasing disease, life with pain, or unnecessary earlier death. Well-aired and not too warm apartments never over 68° F., and for sleeping apartments as much less as the patient can bear, should be our aim, but brought about by careful graduation in the overheated American homes. Sleep in most cases of not over seven hours continuously, with rests during the day or a regular afternoon siesta, is best for most of these patients, a rule well applicable to most of our cardiac cases as well.

Daily exercise, as riding, driving, mild limited gymnastics in the room, all carefully directed, adjusted, and varied (guarding against overuse of the left arm and hand to prevent needless heartstrain), walking on the level, and later up moderate ascents. Respiratory exercises are indicated, as are also resistance movements (manual for a time), then in appropriate cases by the Herz or Zander system. When exercise is limited from whatever cause, massage* is most necessary, which may be followed by frictions. Dry frictions in the morning, with cool or cold sponging before retiring (the latter induces sleep), or reverse operations as to time. In some cases the morning cool or cold sponging or plunge is well replaced by warm dips.

Bath Treatment.—While fresh water baths often disagree, saline† warm baths are generally well borne. When saline baths cause discomfort, partial body immersion, enough to cover legs or more and douching the upper body, coincidently overcomes it. The happy influence of the saline carbonated baths, natural when possible, and otherwise artificial, is of far-reaching value in this affection. The special virtues of Nauheim, in relation to arteriosclerotic treatment are herewith affirmed after seventeen years of impartial observation and practice. In his recent work, Romberg of Tübingen corroborates another recent utterance of a great German scientist as follows: "Among the natural carbonated baths, Bad Nauheim, by reason of its wonderfully graduated baths, its excellent arrangements, favorable situation, and special local influences, unquestionably ranks first, and is to be recommended in all cardiac insufficiencies."

Diet.—Dietary directions constitute the most important of internal remedies, and its immediate permanent control in urgent cases, its gradual regulation in all in the course of a few months or less, absolute limitation in all after six months or a year, and final permanent restriction in every instance, are imperative. Avoid sudden revolutions, but always limit quantity and quality. Discard hearty meals, and in some cases give light food between.

Avoid fluids with ordinary hearty meals, giving up soups, especially meat soups, and confining the use of all fluids to 4 or 6 ounces at the meal. In proper cases permit fluids between meals. When digested, milk is best of all. Coffee should be discarded (save a few drops in milk when seemingly needed), and replaced by milk or freshly infused weak tea. In habitual tea drinkers, tilleul (linden tree flower infusion) may be substituted.

Increase vegetables and diminish meats. Use white meats, save in those with anemic tendencies, when red meat may occasionally be needed. Substitute digestible fish for even some white meat. Exclude game, save fresh white game.

Discard sweets and starchy desserts, overseasoning, spices, and condiments.

Test by accepted methods the digestibility, and the equally important assimilabilty of indicated articles of diet in individual cases, so as to select the best.

Reduce alcohol and tobacco, finally absolutely; gradually but without much delay all alcohol should be limited to small quantities of whiskey (a few tablespoonfuls) with water for gouty subjects, for others a glass of good claret or a not heavy but sound Moselle, all diluted equally with water.

Occasionally for a fortnight or longer in marked renal cases give milk diet partial or complete, especially when well borne. In all cases avoid fresh bread, which should be well baked and stale, and often may well be replaced by light soda biscuit, zwieback, and the specially made toasted rusks.

Digestion aids, antifermentatives, and relief for constipation rank first in the internal remedial agents. Six to eight ounces of vichy three-quarters of an hour before meals, gastric massage before meals, the various digestive aids, muriatic acid (German) among the rest; beta-naphthalin, creosote, salol, etc., and laxative agents find place. The important indication of antiautointoxication treatment is best met by food control and regular evacuations, helped by medicines where required. In these directions calomel for hepatic, intestinal, and antifermentative relief is a sheet anchor in this disease. Repeated doses at bedtime for a series of days or else weekly administration, or both for various lengths of time, are imperative. A combination of calomel gr. 1-4 to gr. 1, euonymin and sodium bicarbonate, each gr. 1, well triturated, given at night, and followed by a mild saline in the morning, is a favorite remedy with me. The arteriosclerotic intestinal colic is often relieved by horizontal rest.

Constitutional Treatment.—Iodide of potassium in 3 to 5 grain doses, continued for months or for one or two years with interruptions, or iodide of sodium, which is less potent and rather more of an antispasmodic, at first giving a few grains at night only, are universal favorites.

Trunecek serum and simlar remedies, which are composed of potassium, sodium, and allied salt mixtures, may replace the iodides at times, and also act as alteratives and help to diminish pressure. Ovarin and lutein, both organic derivatives, certainly diminish pressure and are efficacious in women. Lactoserum derived from milk has also been used of late years. The exact effect of these agents as direct antispasmodics, and their effect upon blood ferments and corpuscles, is variously attributed to blood realkalinization in diminished alkaline states, to white corpuscle increase, and to catalytic body introduction.

Arterial pressure reduction is more immediately attained by the specific agents, the nitrites, such as nitrite of amyl, nitroglycerin, etc. Nitroglycerin in as small doses (1-200 to 1-100 grain) as will keep the patient comfortable, not fearing the largest doses (gr. 1-50 to 1-20), may be maintained for months when needed, and reduced to a minimum, or entirely, when indications cease, when congestion, angiospasm, or angina ceases, or when pressure becomes and remains not excessive. Anticipatory doses often save large ones.

Myocardial indications are met in the usual way by cardiac agents, as irritable, spasmodic, or relaxed action indicates. Recognizing how digitalis leaves and preparations may vary, standard solutions of recognized firms only should be used. A standard fluid extract (one or two drops), the

*Massage must be moderate. Vigorous abdominal massage may increase blood pressure and cause intermission, that of the back and legs often reduces the pulse.

†Three to five pounds of common sea salt makes an artificial saline bath, to which carbonating salts or carbonated water may be added.

French Nativelle solution of one milligram of digitalin, or the German digitoxin derivatives may be given in small doses for long periods, or in full doses for immediate effect (remembering that in ordinary doses the full effect of digitalis takes forty-eight hours). Strophanthus (European preparations are two to four times stronger), spartein, or convallaria can be given for a long time.

Anemia.—This important indication may be met in the usual way, or else by arsenic substitutes hypodermically, such as cacodylate or methylarseniate of soda (0.03 on alternate days, later daily, or up to 0.05 for two or three weeks). Oxygen in daily inhalations, beginning with 15 to 20 liters, later 30 to 50 liters, avoiding overstimulation, is useful.

As general aids, we have electric treatment by current (D'Arsonvalization, etc.), or by light (Finsen) in individual cases. In gouty subjects the uric acid and allied tendencies are improved by stated use of urinary antiseptics. Insomnia, so common, is relieved by always avoiding brain tension in the evening and excitement by day, by light, early evening meals, sometimes adding a biscuit, etc., when needed before retiring, by late sponging, and by bromides, valerian tincture, etc.

Physiological salt solution by hypodermic or rectal injections often replaces diminished water supply.

The work of Zirkel and his disciples in osmology, and the labors of Wright in opsonology, are worthy of our highest attention in their influence upon our therapeutic endeavor.

MALIGNANT DISEASE AND MALARIA.

WITH REFERENCE TO THEIR SUPPOSED ANTAGONISM.

By Major CHARLES F. KIEFFER,

SURGEON U. S. ARMY, FORT D. A. RUSSELL, WYOMING, ON DETACHED SERVICE WITH THE ARMY OF CUBAN PACIFICATION AT SANTIAGO DE CUBA, CUBA.

Frequent comments have appeared on the apparent relative immunity of certain tropical peoples to malignant disease. The belief was quite widely held, and indeed is still held by some, that this is especially true of the tropical countries most severely infected with paludism. The idea is very old that a patient afflicted with cancer may lose his tumor after a sharp attack of malaria, and many striking cases are on record which lend color to the idea that there may be some antagonism between the two diseases.

About five years ago F. Loffler advanced the idea that the apparent immunity to malignant disease in tropical countries was due to the fact that in these countries practically the entire population had at some time or another in their lives suffered with severe paludic infections, and that the antagonism between the two diseases was the underlying cause for the absence of cancer. Following out this idea, he made the suggestion that cancer might be combated by inoculation with malarial parasites.

Following this suggestion, numerous papers have appeared tending to show the fallacy of the premise on which this theory is based. Reports were made from countries intensely malarial in which the death rate from malignant disease reached quite a respectable figure. Thus, Kruse (*Archiv für Hygiene*, Bd. XII, Hft. 3, 1902) studied the cancer and malarial statistics of Italy, and found that, despite the very general distribution of malaria, cancer is quite as common there as it is in Prussia, where malaria is almost nonexistent. Also Prochnik (*Wiener klinische Wochenschrift*), reporting from the South Sea Islands (Dutch India), finds that malaria is of no effect in the control of carcinoma. Malaria is so common in these islands that there are few, if any, of the inhabitants, foreign or native, who escape the infection. Carcinoma is stated to be also fairly prevalent, and, generally speaking, is more common among the natives than the foreigners. Indeed, the author has observed numerous persons suffering from both conditions at the same time, and he has never seen the slightest amelioration of the carcinomatous condition. He believes, in fact, that malarial infection, far from being preventative of carcinoma, is the indirect cause of the large proportion of malignant disease of the liver observed in those islands.

On the other hand, to show that where the disease is relatively absent in tropical countries, the diminution is not due to malaria, but to some other cause or causes, J. Goldschmidt (*Deutsche medizinische Wochenschrift*, July 10, 1902) cites statistics from

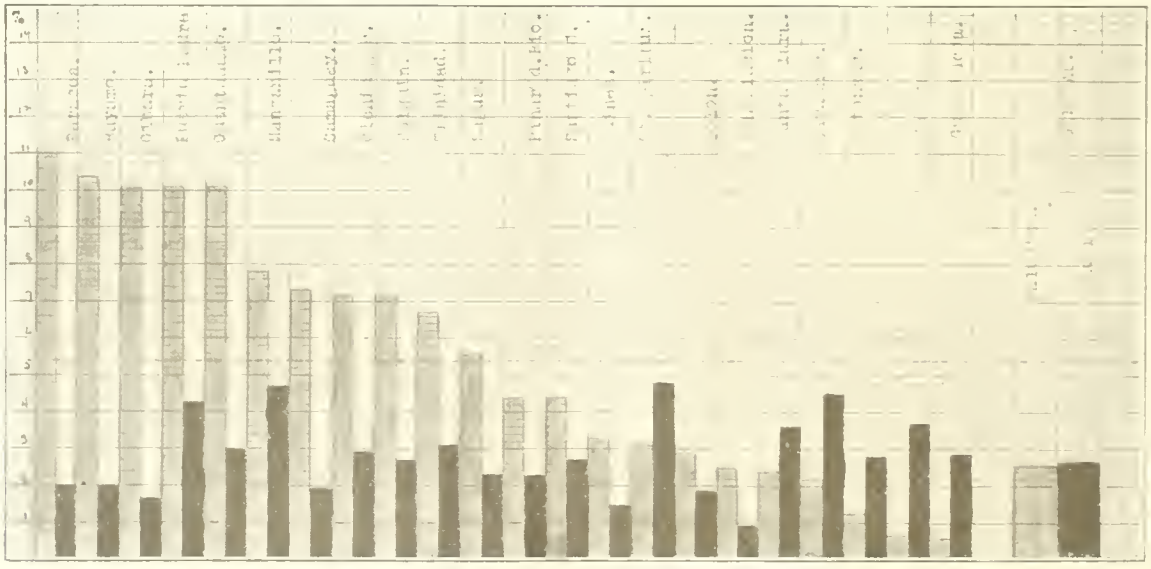

CHART 1.—Showing [illegible] cancer and malaria [illegible] more than [illegible] inhabitants in Cuba for the years 1894 and 1895; the light line denotes malaria; the black line, cancer.

the island of Madeira. In this island malaria is practically unknown, and at the same time the figures show that carcinoma is also a rare disease. He thinks it is very reasonable to suppose that if malaria and carcinoma are so distinctly antagonistic, then in the absence of the former the island should show a larger proportion of cases of the latter

disease. Robertson (*Journal of Tropical Medicine*, November 1, 1905) cites cases to show that malignant disease is fairly prevalent in the Gilbert Islands.

A considerable and varied experience in tropical practice has convinced me that malignant disease is relatively less frequent in hot countries than in cold countries, but, while in some hot countries it is extremely rare, in others it is quite a factor in the morbidity and mortality. When the distribution of

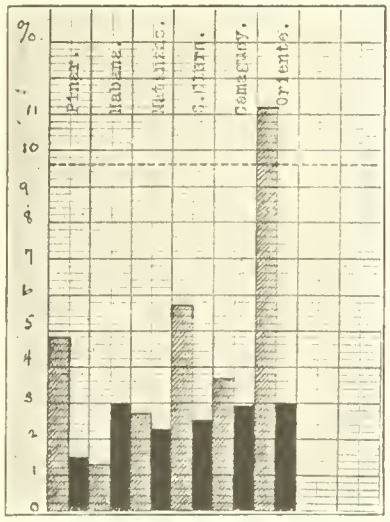

CHART 2.—Showing the percentage of total mortality due to malaria and cancer in the six provinces of Cuba during the year 1904. The light column indicates malaria; the black column cancer.

malignant disease in the various countries, or better still in the various towns and provinces of a country, is studied, it will be found quite independent of the distribution of paludism in the same regions. As far as individual instances are concerned, I have frequently observed carcinomatous patients suffering from intense malaria. In two cases severe explosions of latent malaria were observed after operations for the removal of malignant growths, and with no effect on the later recidive and fatal termination. Davidson reports the death of a European from cancer of the stomach who was stated to have suffered from frequent attacks of malarial fevers. Prochnik (loc. cit.) observed the concurrence of the diseases in "numerous cases." Cardamitis (*Grèce Médicale*, Vol VI., No. 3) encountered cancer associated with malaria, and consequently denies that there can be any antagonism. He has, in fact, witnessed the development of malaria in a woman with an operable cancer after she had been bitten by infected mosquitos. There was no demonstrable variation of either disease process.

There is an undoubted relative racial immunity which is not necessarily confined to tropical peoples. Kruse, in the paper already cited, calls attention to this fact. Cancer is more common in northern than in southern Italy, and the ethnological differences between the inhabitants of the two different sections is marked. He believes that the Alpine country gives evidence of a race distinctly more prone to malignant disease, and that this race helped to stock southern Germany and northern Italy. For this reason the prevalence of cancer in Continental Europe increases in the direction of the Alps. In the tropics this relative immunity is helped out by the simpler mode of life which the natives pursue, and particularly by the absence of many of the forms of continued irritation which we know lead to malignant disease. I am convinced of the correctness of the observation that improvement in native races in the way and mode of life of civilization is followed by increase in the rate of malignant disease. In many tropical countries increasing civilization means a more or less complete adoption of European modes of life, and of these principally excessive meat eating and increased consumption of alcohol. Both of these are, I believe, powerful indirect factors in the production of malignant disease. In many instances, when the tropical native eats little meat, it is not on account of any aversion to it as a food stuff, but because it is usually beyond his means. Where he has the means, then he becomes, as a rule, as excessive a meat eater as either the average European or the average American.

In the Philippine Islands malignant disease is not rare. In a restricted surgical practice among the natives, I saw numerous cases of skin cancer and extirpated four cancerous breasts. I was particularly impressed with the number of cases of malignant disease of the penis encountered. I then thought it a coincidence that I saw in a short time six cases of well-developed epithelioma of the penis. Since coming to Cuba I have seen several more, and it will be observed in the figures from the General Hospital at Santiago that among the operations for malignant disease there is an unusually large proportion of cases of malignant disease of the penis Able Cuban practitioners seemed surprised when told that epithelioma of the penis is among the rarer manifestations of malignant disease in the United States. I have not been able to discover any etiological factor. I have no figures bearing on the frequency of malignant disease in the Philippine Islands. My experience was, however, that I saw about the usual proportion of these cases to other pathological surgery. There certainly was no such marked disproportion either way as to call attention to it. Since coming to Cuba I have studied the

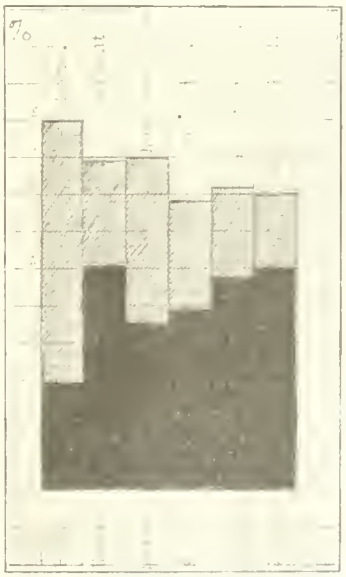

CHART 3.—Showing the percentage of total mortality due to cancer in the six provinces of Cuba during the year 1904, compared with that in the six New England States in the year 1900.

question carefully and compiled all available data, and the following interesting charts and figures are the result.

Chart No. 1 shows the percentage of the total mortality from paludism and cancer in twenty-two cities in Cuba exceeding 20,000 population. These figures are compiled from the monthly reports, and embrace the years 1904 and 1905. The light line shows the percentage of paludism and the heavy line

the percentage of cancer. The mortality from malignant disease, it will be observed, varies quite a little in the different communities, and yet an examination of the chart shows but little relation between this line and the fluctuations of the line for paludism. For instance, Puerto Padre, Manzanillo, Sancti Spiritus, and Cárdenas show the greatest malignant disease rates; yet in the first two the paludic rate is very high and in the last two it is relatively low. Consolación has the lowest malignant disease death rate and also one of the lowest paludic rates.

Chart No. 2 shows the percentage of the total death rate ascribed to paludism and malignant disease grouped by provinces for the entire island of Cuba for the year 1904. In this chart it will be observed that the province of Habana, with the lowest paludic death rate, and the province of Oriente, with the highest paludic death rate, have identical rates for malignant disease.

Chart No. 3 shows an interesting comparison between the malignant disease rate of Cuba and that of the New England States. The figures used for Cuba are the same provincial figures as used in the previous chart embracing the year 1904. The figures of the six New England States correspond to the year 1900, and were the only ones I had available for comparison. In both of them the figures are expressed in percentage of the total mortality.

A study of the mortality tables of the city of Santiago de Cuba, which has a fairly large morbidity and mortality rate from paludism, shows the following table of deaths from malignant disease and paludism in Santiago de Cuba for a period of sixteen months to include October, 1906:

	Natives		Foreign		
	White	Colored	White	Colored	
Paludism;	21.	60.	35.	2. (1, Hayti).	= 118.
Cancer, etc.	12.	35.	5.	3. (Martinique, Africa, China)	= 55.

Population of Santiago.—Native white.....15,711
Foreign white..... 3,458
Colored 26,309

45,478

The colored are not separated into native and foreign, because practically all those classed as foreign are from adjacent islands like Jamaica, Antiqua, etc., and are all tropical residents.

Annual ratio per thousand from malignant disease.. .916
Annual ratio per thousand from paludism..... 1.96

The following is a statement of the surgical work for malignant disease done in the General Hospital at Santiago during the eight years from 1899-1906:

All surgical operations..... 2,989
All major surgical operations over age 35..... 803
All major surgical operations for malignant disease.. 209

In the records of the hospital these patients are not classified by nationalities, but by color. Of the operations for malignant disease there were:

	White.	Mulatto.	Black.
Male	21	17	32
Female	36	66	37
Total	57	83	69

In the list of 803 major surgical operations on patients above the age 35, which has been assumed as the cancer age for this paper, all sorts of operations are included, such as special genitourinary operations, gynecological, and major obstetrical operations. This should be borne in mind when the figures are compared with other statistics where, under the head of operations, are only classed the usual operations of pathological surgery. In figuring up this list, however, all accident surgery, whatever its gravity, was excluded.

The special diagnoses of malignant disease as they appear in the records of the cases are as follows:

CASES CLASSED AS CARCINOMA.

Uterus	34
Uterus and vagina	4, 38
Breast	24
Stomach	6
Penis	5
Abdominal wall	2
Neck	2
Adenocarcinoma, Scarpa's triangle	2
Parotid gland	1
Face	1
Spermatic cord	1
Liver	1
Occipital region	1
Tibia (encephaloid)	1
Ovary	1
Hand	1
Kidney	1
Gall-bladder	1
Mesentery	1
Pancreas	1
Foot	1
Testicle	1
Carcinoma, iliac fossa	1
Groin	1
Vulva	1
	97

CASES CLASSED AS EPITHELIOMA, ETC.

Skin	17
Penis	10
Cervix	7
Mouth	6
Lip	4
Clitoris	1
Anus	1
Epitheliomatous degeneration of keloid	2
Malignant epulis	4
	52

CASES CLASSED AS SARCOMA.

Osteosarcoma of Femur	5
Lower jaw	5
Tibia	5
Humerus	3
Calcaneum	2
Foot	1
Finger	1
Malar bone	1-23
Uterus	2
Uterus and ovary	10, 12
Breast	5
Lymphosarcoma (not designated)	5
Fibrosarcoma (not designated)	5
Sarcoma Scarpa's triangle	2
Mesenteric	2
Eye	2
Carotid region	1
Face	1
Auricle	1
Angiosarcoma (supraclavicular)	1
	62

Grand total, 209

The following conclusions seem justified:

1. There is no real antagonism between malaria and malignant disease.

2. Malarial infection supervening on malignant disease does not modify the latter.

3. Natives of tropical countries enjoy a relative immunity to malignant disease, which, however, varies within wide limits.

4. The progress of civilization with the adoption of the ways of life of the white man materially diminish this immunity.

NOTES ON SIX THOUSAND CASES OF NEURASTHENIA.

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Neurasthenia is the bête noire of the dispensary neurologist. This condition of affairs is easily understood. It arises from the fact that certain essential elements in the treatment of the disease are well nigh impossible for the average dispensary patient to undertake. Such patients cannot, as a rule, cease their work, nor alter it; they cannot change their surroundings; they cannot regulate their hours of sleep, nor can they often take rest enough, and their diet can seldom be much improved. The treatment of the disease by drugs is thus, to a large extent, made necessary, though it is far from satisfactory. In the following notes, therefore, no endeavor has been made to draw conclusions from methods of treatment at the clinic, but to present the facts obtainable regarding the patient and his illness prior to the introduction of treatment, *i.e.* history and symptomatology.

Before giving any figures let us recall a few of the classifications of neurasthenia advocated by different men. Nothing could well be more varied. To begin, Beard[1] divided cases into (1) cerebral, (2) spinal, (3) digestive, (4) sexual, (5) traumatic, (6) hysterical, (7) hemineurasthenic. Starr[2] says we can recognize cases as due to (1) anxiety and worry, (2) overexertion, mental or physical, (3) beginning degeneration of neurons, (4) toxic cases. Again, Starr[3] divides the cases anatomically into (1) general neurasthenia, affecting all parts of the nervous system and (2) local, involving brain or cord, or vasomotor system chiefly. Dana[4] gives the following forms: (1) primary, (2) hysterical, (3) acquired, (4) climacteric, (5) traumatic, (6) spinal, (7) with fixed ideas, (8) angiopathic, and (9) grave. Finally, Proust and Ballet[5] state as forms of neurasthenia (1) cerebrospinal, (2) neurasthenia of women, (3) genital, and (4) traumatic.

Out of 37,564 patients who have applied for treatment in the neurological department at Vanderbilt Clinic during the eighteen years from October, 1888, to November, 1906, there were found 6,000 cases of neurasthenia. From this list are excluded cases which had any definite symptoms recorded of hysteria or insanity. No cases in children under thirteen years of age were found which could not be attributed to the ordinary nervousness brought on by fright or poor environment, though some of them might have been found to be neurasthenic had they been followed up for a sufficient time.

Of the 6,000 cases thus remaining, 3,516, or 58.6 per cent., were male and 2,484, or 41.4 per cent. females. These figures correspond quite closely with those of Savill[6] and those of Collins and Phillips,[7] though differing widely from those of Von Hössling (see Table I).

TABLE I.

Showing Sex Ratio in Neurasthenia.

Reported by	No. Cases	Male	Per Cent.	Female	Per Cent.
Savill	127	77	61	50	39
Collins and Phillips	333	183	55	150	45
Von Hossling	828	604	72.9	224	27.1
Cleghorn	6,000	3,516	58.6	2,484	41.4
Totals	7,288	4,380	60.9	2,908	39.9

Proust and Ballet[5] and Starr[3] state that the disease is more frequent in men, but they give no figures. Savill[6] says it occurs equally in the sexes, but his figures do not bear out this statement (see above).

The civil state of the cases in our series shows, as would be imagined, that the percentages of married and single patients are almost equal. Table II. gives the findings of Collins and Phillips compared with our own.

TABLE II.

Showing Civil State Ratio in Neurasthenia.

Reported by	Sex	Single	Married	Widowed
		Per Cent.	Per Cent.	Per Cent
Collins and Phillips	Male	20	29	.....
	Female	14	31	.....
Cleghorn	Male	31.3	24.2	.9
	Female	14.1	25.7	3.8

Neurasthenia occurs most frequently in the early years of maturity, a time when the organism should be strongest in repelling disease of mind or body, but a time when one is subjected usually to the greatest mental and physical strain. The part this plays as an etiological factor will be considered later. Our figures show a very large percentage of men affected between the ages of 20 and 30 years. This disproportion is explained by the frequency of the sexual type in men at that period of life, about 80 per cent. of sexual neurasthenias occurring in the third decade. Even omitting these cases, the third decade would remain on an equal footing with the fourth in its production of neurasthenia. The oldest case we found recorded was in a woman seventy-five years of age; the youngest, as stated above, was thirteen, at which age three girls were recorded. Table III. gives the numbers and percentages of our cases by decades compared with the percentages given by Collins and Phillips.

TABLE III.

Showing Ages of Neurasthenics by Decades.

Decade	Cleghorn			Collins & Phillips
	Male	Female	Per Cent.	Per Cent.
10-20	242	162	6.7	6.6
20-30	1,542	822	30.4	30.6
30-40	1,002	815	30.3	27
40-50	481	370	14.2	16.2
50-60	172	244	7	8.4
60-70	55	60	1.9	2.1
Above 70	3	0	.1*	†

*Age not reported in 24 cases.
†First decade not shown.

Natives of the United States, of course, predominate among the applicants for treatment at the clinics in New York. In our statistics due allowance must therefore be made for this fact. Russians and Poles are said to have a susceptibility for neurasthenia, but no statistics were found referable to the disease in Russia. Natives of that country formed 10 per cent. of our series, while Collins and Phillips had 20 per cent. among their 333 cases.

TABLE IV.

Nativity Percentages.

Birthplace	Cleghorn	Collins and Phillips
	Per Cent	Per Cent.
United States	48.7	43.5
Ireland	16.5	16.2
Russia	10.0	20.7
Germany	8.5	10.2
England and Canada	6.3	2.4
Austria	3.2	4.5
Hungary	1.1	.....
Italy	1.3	.....
Sweden	1.2	.....
France	0.6	0.6
Scattering	1.7	7.6

Occupation in its relation to neurasthenia has been the subject of much discussion. According to Starr[3] the disease is more frequent among the highly educated classes than among manual workers, and this view is borne out by Von Hössling's[8] report (q.v.). This distinction, however, is not available in dispensary work. Here we can compare only active with sedentary and indoor work. We found 2,063 cases occurring among persons engaged in the principal indoor occupations, *i.e.* housework, domestic service, sewing, tailoring, factory work, machine operating, clerking, studying, storekeeping etc. On the other hand, the active and outdoor workers, drivers, laborers, porters, waiters, carpenters, painters, firemen, watchmen, and railroad workers, yielded only 1,053, or about one-half as many cases. This would seem to be a strong piece of evidence toward proving the sedentary occupations a predisposing cause of neurasthenia. Table V. shows occupations as we found them, omitting the unimportant ones. Von Hössling's[8] table and one from Collins and Phillips[7] are also given.

TABLE V

Cleghorn.

Occupation	No.	Occupation	No.
Housework	542	Salespersons	92
Clerks	340	Agents	90
Laborers	297	Porters	85
Tailors	286	Printers	86
R. R. Workers	188	Tobacco Workers	79
Factory hands	174	Painters	73
Drivers	156	Barbers	61
Domestics	142	Plumbers	58
Sewing	137	Peddlers	56
Storekeepers	136	Students	51
Operators	117	Watchmen	28
Carpenters	100	Weavers	26
Waiters	103	Firemen	23
Metal Workers	94	Teachers	19

TABLE VI.

Von Hössling.

Occupation	No.
Merchants	198
Clerks	130
Professors, Teachers	68
Students	56
Officers	38
Artists	33
No occupation	19
Medical men	17
Farmers	17
Clergy	10
Scientists	6
School boys	0
Laborers	6

TABLE VII.

Collins and Phillips.

Occupation	No. of Cases
Housewives	94
Tailors	37
Clerks	26
Indoor Work	264

The etiological factors in neurasthenia are so many and so varied that they must be classified in some way, in order to simplify them. After dividing them into the predisposing and the exciting causes, hardly any two men use the same classification. Starr[3] gives heredity as the predisposing cause "par excellence," and as exciting causes (1) mental strain and worry, (2) alcoholic and sexual excess, (3) disease, (4) shock and anxiety, (5) sudden change in life habits, (6) genital disorders, especially in women, (7) reflex irritation, (8) poisons from imperfect metabolism, (9) injury, (10) fright. Savill[6] gives as predisposing causes (1) heredity, (2) sedentary occupation and indoor life, (3) general malnutrition, and as exciting causes (1) overwork, (2) alcohol, (3) masturbation, (4) long-continued pain, (5) dyspepsia, (6) constipation, (7) Graves' disease, (8) Glénard's disease, (9) illness, (10) grief, (11) eyestrain, (12) trauma, (13) drugs, (14) insomnia, (15) poor teeth.

Proust and Ballet[5] mention as special causes (1) heredity and (2) defective education, and as exciting causes (1) excessive brain work, (2) pressure in school, (3) moral overpressure, (4) intoxications, (5) disease, (6) trauma, (7) fright, (8) dyspepsia, (9) genital disorders.

Beard[1] said the fundamental causes were (1) mental labor and overstrain, (2) derangement of nutrition.

Drowse[9] places great stress on heredity, and says "the fundamental cause of neurasthenia is a want of correlative integrity between cerebrospinal and sympathetic centers."

Abrams[10] gives as causes (1) overwork, (2) worry, (3) alcohol, tea, and coffee, (4) syphilis, (5) illness, (6) trauma, (7) puberty, (8) genital disorders. Glénard gave enteroptosis as the cause. Dunin[11] stated that many cases were due to constipation, and Federn[12] thought that most cases had an intestinal origin. Collins and Phillips[7] had in their series as causative factors (1) overwork in 27 cases, (2) masturbation in 26, (3) worry in 18, (4) childbirth in 12, (5) sorrow in 11, (6) fright in 10, (7) trauma in 8, (8) disease in 7, (9) alcohol in 4.

A definite etiological factor was recorded in 1,793 cases in this series, or, if we include constipation as a cause, in about 3,000 cases. Should we also add to this list cases which gave dyspepsia as a most prominent symptom (according to Savill, and Proust and Ballet), we would have some hundreds more. The exact figures, however, cannot be had, as many patients gave constipation or dyspepsia as a symptom after stating some more generally recognized cause. The heredity of patients in our series unfortunately was not obtainable, as it was recorded in but a few instances. In the table showing etiological factors, the list is modeled after that given by Church and Peterson,[13] which is followed quite closely.

TABLE VIII.

Showing Etiology in Neurasthenia.

Etiology	Male	Female	Total
Heredity, Neuropathic	30	20	50
Heredity, Cachexias	3	7	10
Overwork and Worry	90	119	209
Alcoholism	343	87	430
Tea and Coffee excess	29	192	221
Trauma	115	61	176
Post-operative	29	52	81
Illness	58	75	133
Toxic States	69	8	77
Shock	48	150	198
Menopause		90	90
Miscarriage		83	83
Pregnancy		35	35

In the above table the toxic cases consist of five cases of lead poisoning and seventy-two cases of probable nicotine poisoning. The heading, overwork and worry, covers both mental and physical

overstrain, also worry or anxiety over family or business troubles. From the figures, excess in alcohol among the men, and in tea and coffee among the women, stand out as frequent causative factors. Together they form 33 per cent. of the whole list. Overwork and worry also play a prominent part, and in this class were found many of the fifty-one students recorded. It is of interest to note here that Nesteroff[14] found neurasthenic symptoms present in 30 per cent. of 588 pupils examined by him, the percentages increasing from a minimum in the young classes to a maximum near graduation. Illness, finally, as remarked by most men, is one of the chief causes of nervous exhaustion, and was a factor in 133 cases of our series.

Symptoms will be given in the order they are named by Church and Peterson, no other list apparently suiting all conditions so well. First, then, let us consider motor disorders. Tremors were noted in 1,087 cases and muscular twitchings in 166; weakness was complained of by 742 patients. The reflexes were recorded as exaggerated in 340 and decreased in 54 cases.

Among the sensory disturbances, headache was the principal symptom. It occurred in 1,935 instances (for subdivision see Table IX). Paresthesias were present in 434, dizziness in 560, and backache in 518. The vague sensations of indefinite character, which could not be classified, were rather constant, being found in 705 persons. Disorders of sight and hearing were not common.

The alimentary tract gave rise to the symptoms most frequently met with, as follows: Poor appetite in 898 cases, constipation in 1,499, and diarrhea in 90, gastric flatulence in 387, pain in the region of the stomach in 297.

The circulatory system showed cardiac palpitation in 479 patients, and vasomotor disturbance in 429.

Among mental symptoms emotional irritability was the most frequent, occurring in 550 cases. Then followed worry in 444, various fears in 351, and poor memory in 338. Insomnia, next to headache, was the most constant symptom found, being complained of by 1,684, almost equally divided between males (879) and females (805). Depression was noted 599 times. The complete figures and approximate percentages follow:

TABLE IX.

Symptoms in Neurasthenia.

Symptoms	No.	Per C't.	Symptoms	No.	Per C't.
Weakness	742	12	Lost taste, smell	5	....
Tremors	1087	18	Poor Appetite	898	15
Twitching	166	2	Constipation	1499	25
Reflexes +	340	5	Diarrhea	90	1
Reflexes −	54	1	Flatulence	387	6
Paresthesia	434	7	Pain in Stomach	297	5
Hyperesthesia	8	....	Palpitation	475	8
Fatigue	242	4	Pain in Heart	103	2
Headache, Occip.*	860	14	Vasomotor dis'd'r	429	7
" Frontal	672	11	No capacity work	197	3
" Vertical	295	5	Anemia	529	8
" Temporal	107	2	Secretory disorder	46	....
Dizziness	560	9	Poor memory	338	5
Heavy head	60	1	Worry	444	7
Backache	518	8	Fears	351	6
Tenderness	12	....	Emotional	550	9
Vague feelings	705	12	Insomnia	1684	28
Tired Eyes	22	....	Drowsiness	78	1
Poor Sight	83	1	Depressed	599	10
Poor Hearing	20	....	Syphilis	190	3
Tinnitus	101	2			

* Patients whose symptoms included constipation and headache with unrecorded location were put in Frontal Headache class.

The various symptoms, in order of frequency as we found them, compared with the lists given by Savill[6] and by Collins and Phillips,[7] may be of interest. They are shown below:

TABLE X.

Symptoms in Order of Frequency

Savill	Collins and Phillips	Cleghorn
Fatigue easily	Insomnia	Headache
Headache	Headache	Insomnia
Insomnia	Constipation	Constipation
Restlessness	Palpitation	Tremors
Pain in back and legs	Poor appetite	Poor appetite
Emotional, Irritable	Indigestion	Weakness
Timidity	Vertigo	Vague Sensations
Poor memory	Backache	Depression
No capacity for Cerebration	Hot flashes	Dizziness
Sighing and Yawning	Epigastric pain	Emotional irritability
Rapid Pulse		Anemia
Vertigo		Backache
Gastric Symptoms		Palpitation

One type of neurasthenia is still to be spoken about, namely, the sexual. This occurred in 839 cases out of 6,000, including 5 females. Loss of sexual power was shown in only 185, while 525 cases gave a history of masturbation.

TABLE XI.

Sexual Neurasthenia.

	Male	Female	Total
Sexual excess	196	3	199
Loss of power	184	13	185
Nocturnal emissions	462	.....	462
Masturbation	518	7	525
Pain in genitals	18	.....	18

Were it possible to make a careful study of each case among these 6,000, no doubt some would be found whose symptoms were caused by a pathological condition which was undiscovered. Some of the records of these cases were somewhat lacking in completeness, but they seem sufficiently definite to warrant certain conclusions of value about the disease.

To summarize the facts most clearly brought out:

1. Neurasthenia is much more frequent in men than in women.

2. It occurs between the ages of 20 and 40 in two-thirds of the cases, few comparatively starting after 40.

3. The indoor occupations furnish a large majority of all cases.

4. Among causative factors, the disturbances of the gastrointestinal tract and the intoxications stand out as principals, and

5. The most constantly present symptoms seem to be headache, insomnia, and constipation.

Is this last-mentioned condition really a cause or a result of the disease? I wish very much that more information on this point might be brought to light.

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312 WEST NINETY-THIRD STREET.

PATHOLOGY OF GONORRHEA IN WOMEN.*

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I RECALL an eloquent tribute paid by my reverend teacher, Dr. Oliver Wendell Holmes, to his colleague, Dr. James Jackson, the ancient Professor of Pathological Anatomy, who, unaided by the microscope, had attained a knowledge of his subject far in advance of his generation. With a similar admiration do we reread the classical paper of Dr. Noeggerath, who thirty years ago, with an imperfect knowledge of pelvic pathology and no inkling of the future achievements of bacteriology, had what now seems to be a prophetic vision of the results of the infection which claims out attention this evening. Few of those present can recall the incredulity with which his advanced views on "latent gonorrhea" were received, but all admit that he was the pioneer in this field of investigation. Like Sims, he sketched in outline a picture which those who followed him have gradually filled out in detail. In my student days gonorrhea was regarded as a trivial local affection, transient in its course, and easily cured. The medical student of to-day is taught to regard it as even more serious than syphilis, especially in the female. His familiarity with its results, as seen at the operating table, is a more forcible object lesson than could be furnished by any lecturer or text-book.

The brief time allotted to me forbids my discussing the more elementary points in pathology, which I assume are known to you, so that I shall devote my attention to the more recent investigations of the intrapelvic lesions in the female as they are seen by the surgeon. The old views as to the site of primary infection have been considerably modified. It was formerly held that the vagina was first infected, but we now know that the intact mucosa of this canal is quite resistant to the action of the gonococcus, and that the germ may enter the cervix at the time of the impure coitus, with or without accompanying infection of the urethra, Bartholinian glands, or vulva. Moreover, it is a fact often noted that the most virulent specific vaginitis may not extend beyond the cervical canal. It has never been satisfactorily explained why such extensive changes in the tubes should result from an infection apparently so mild that its inception was not noticed by the patient, or why a severe type should remain localized below the *os internum*. Doubtless the different powers of resistance in the tissues of different individuals accounts for this irregularity. Certain it is that gonorrheal infection assumes protean forms, as is known to surgeons who have operated during all stages of the disease.

It has been demonstrated beyond a doubt that the mere presence of Neisser's cocci in the secretion does not account for all the tissue changes that occur. They possess toxic properties which are active after the microorganisms themselves have perished. Bacteriologists are familiar with the frequent occurrence of mixed infection, and it is probable that the *Staphylococcus aureus* and colon bacillus remain active after the gonococci have disappeared. "Latent gonorrhea" is observed in the female as well as in the male, small foci of infection again spreading under the influence of pregnancy and the puerperium, or even in consequence of the menstrual congestion. It is customary to regard gonorrheal infection as superficial, rarely penetrating the subepithelial layer, and extending only by continuity to the tubal mucosa, thus offering a sharp contrast to the more profound and far-reaching effects of the streptococcus; but it has been shown conclusively that the muscular wall of the uterus may be invaded, and that lymphatic infection does occasionally occur in the specific form of inflammation, as well as in the septic. Gonorrheal cellulitis, like gonorrheal rheumatism, is rare in the female, and is probably due to mixed infection.

So far as my personal observation goes, I am inclined to doubt that the stroma of the ovary is primarily affected by way of the lymph-channels, as in septic oöphoritis, and there is no reason to believe that the *intact* cortical zone is easily infected secondary to specific salpingitis. In my opinion, the acute oöphoritis in this connection is more often due to mixed infection, while hyperplastic and cystic degeneration are rather the result of interference with the normal circulation in consequence of surrounding exudates. It is common to enucleate from a mass of adhesions a normal ovary, which can be safely spared when the tube is hopelessly diseased.

The subject of diffuse gonorrheal peritonitis has awakened much interest of late, several cases having been recorded which are explained by the theory of lymphatic infection. Most of those have been operated upon successfully, in striking contrast to the virulent character of diffuse septic peritonitis. Fortunately, Nature's protective power is shown in the majority of these cases by the localized inflammation which confines the focus of infection to the pelvis. Intraperitoneal rupture of a pus tube I have never observed. It must be most rare. The opportunities for studying the various types of gonorrheal affection in the female in Bellevue Hospital are probably unsurpassed. The routine bacteriological examination of vaginal discharges and of the contents of tubal and ovarian abscesses has developed many interesting facts, the most important practical result being the conclusion that irrigation and drainage are seldom necessary. Until recently abdominal surgeons prided themselves on saving many patients by this practice. Now we see that they recovered in spite of those measures. Why? Because in the majority of the cases either the pus was sterile, or the focus of infection was entirely removed at the time of operation.

Lack of time forbids my entering into details. It suffices to state that we have found in pus every variety of microorganism (except the pneumococcus, which has been found by other observers) associated with the gonococcus; that in patients with an acute gonorrheal vaginitis and urethritis the contents of diseased tubes has often proved to be sterile, although signs of a recent attack of peritonitis were present. In other cases where there was no evidence of vaginal or uterine infection, such an acute inflammation has been found within the pelvis and abdomen that in several instances it could be fairly charac-

*Read at a meeting of the Medical Society of the County of New York, March 25, 1907.

terized as a hemorrhagic peritonitis—in fact, they were supposed to be cases of ruptured ectopic on account of the amount of free blood, until a careful examination of the tubes showed that they were the seat of an intense gonorrheal inflammation. These facts are hard to explain, except on the supposition that the infection may actually skip the vaginal and uterine mucosæ to expend its action on the tubes.

The type of gonorrheal inflammation encountered by the surgeon is rarely of the acute type. It goes without saying that the presence of sactosalpinx, greatly thickened tubes, and dense adhesions implies a long-standing process. This applies even to those cases (such as one that I encountered to-day) in which, with an acute gonorrheal endometritis, the patient had an old inflammatory condition of the adnexa of undoubted specific origin. I have removed half a dozen tubes, the seat of intense salpingitis, the anatomical appearance corresponding to the history of acute infection, where Neisser's coccus was found in large numbers in the pus squeezed from the distal ends of the tubes. Conservative operations were performed in most instances, and no febrile reaction followed. The operation was not done intentionally, for I do not feel that there is sufficient warrant to either curette the endometrium during the acute stage of gonorrheal infection, or to remove such tubes as I have described.

Although so fond of the urethral glands, fortunately gonorrheal infection rarely extends to the bladder, and still more infrequent is ascending ureteritis and specific inflammation of the renal pelvis. The danger of interfering with Nature's barrier at the sphincter vesicæ has been shown in instances in which infection has occurred as the result of endoscopic examinations and catheterization.

Attention has been called to the susceptibility of the puerperal uterus to gonococcus infection. In a sad case of this sort, in which impure coitus occurred a day or two before delivery the symptoms were so acute as to be mistaken for those of perforative peritonitis. I operated on the fifth day, but too late to save the patient. The appendix was normal; both tubes were intensely congested and filled with pus, and there was a diffuse peritonitis. No adhesions were present. The infant had severe gonorrheal ophthalmia.

I have called attention in previous papers to the frequent association of appendicitis with tubo-ovarian disease. This is doubtless nearly always secondary to the perisalpingitis attending gonorrheal pyosalpinx, and not to specific infection.

All surgeons are familiar with the various forms of adhesions and exudates found at the operating table, especially the extensive intestinal form, which may render the enucleation of pus tubes so formidable to the inexperienced.

The interesting questions suggest themselves: Do such exudates disappear spontaneously or under palliative measures and if so, why? Is a *restitutio in integrum* possible in the case of a tube, the mucosa of which has been destroyed by gonorrheal infection? Can a pyosalpinx discharge itself into the uterine cavity? To what extent is a previous salpingitis an etiological factor in the causation of tubal gestation? Is "latent gonorrhea" the principal cause of sterility, as Noeggerath originally claimed? I regret that I cannot discuss these at length, but can only state briefly the results of my own observation.

There is no question that under the influence of rest, hot douches, and boroglyceride or ichthyol tampons the most extensive exudates do disappear (probably through lymphatic absorption), leaving the diseased tubes clearly outlined, where before they were indistinguishable, and that a symptomatic cure is obtained. I do not believe, from my experience both as a pathologist and a surgeon, that a tube once thoroughly diseased is ever restored to its previous normal condition. There is no question that the mucosa may be regenerated after exfoliation, but the ends of the tubes are nearly always agglutinated, so that sterility is inevitable. Clinical evidence alone does not convince me to the contrary.

I have never been able to satisfy myself, either clinically or from examinations of hundreds of pus tubes, that their contents can be spontaneously discharged into the uterus. Patients in whom this has been said to occur I have afterward operated upon, and have demonstrated its impossibility.

I think that too much stress has been laid upon the importance of gonorrheal salpingitis as a cause of arrest of the impregnated ovum in the tube, since the distal end is usually sealed up as the result of the disease. It is difficult to imagine a gonorrheal inflammation that has been arrested at the inner or middle third, leaving the outer third untouched. The old question of the frequency of "latent gonorrhea" in the male, as a cause of infection of the tubes and resulting sterility, must be answered with some qualifications. Since it has become the practice to pay more attention to the matter of azoöspermia in the husband before treating the wife for sterility, we have doubtless concluded that Noeggerath's percentage was rather too high, and that occlusion of the seminal ducts, as well as of the tubes, plays an important part in this question.

GONORRHEA IN WOMEN.*

INFECTION OF THE URETHRA, VAGINA, AND DUCTS OF THE GLANDS OF BARTHOLIN.

By WILLIAM S. STONE, M.D.,

NEW YORK.

The frequency of gonorrheal infection in women, and the opportunity thus afforded for every general practitioner to observe its clinical relations, would almost seem to render the present discussion of the disease unnecessary. The great importance, however, of the disease to the community, and the erroneous impressions that are still prevalent about some of its manifestations, may furnish the reason for its discussion at this time. This is especially true of the lesions of the external genital organs, the consideration of which has, perhaps, been somewhat neglected on account of the keen attention that has been directed toward the surgical treatment of the results of this infection in the internal organs. The infections of the external genitals also, representing as they usually do the early and more acute stages of the disease, are often not observed by the physician because of the frequently transitory nature of the subjective symptoms and of the erroneous significance which the patients themselves ascribe to their presence.

The writer's share in the evening's discussion will, perhaps, be best performed (1) by briefly referring to some of the features observed in his own experience, mentioning particularly some of the prevalent impressions that seem to him to be erroneous, and (2) by pointing out the practical value these lesions

*Read at a meeting of the Medical Society of the County of New York, March 25, 1907.

may have for the physician in the way of diagnosis and treatment.

The Urethra.—The common idea that the urethra rarely escapes being involved early in the course of the disease the writer believes to be true, although functional disturbances of the bladder from other causes are so frequent in women that the physician is often not consulted until the urethritis is better or well. On account of the shortness of the female urethra, its entire length is usually involved, but the course of the disease is usually milder and of shorter duration than in the male. It is the experience of the writer that, with appropriate treatment, the disease lasts only from four to six weeks, but that without treatment the involvement of Skene's ducts occurs in a large number of cases, thus persisting as a local complication for an indefinite period of time. On account of the early involvement of the entire length of the canal, frequency of urination and more or less vesical tenesmus are rarely absent, giving rise to the common expression "gonorrheal cystitis." Whenever the writer hears this expression used he wonders whether it is from ignorance or carelessness, because the truth of the matter is that, with the exception of a congestion at the vesical neck, gonorrheal cystitis rarely occurs, and the ascent of the infection to the ureters, as reported by Kelly, is the rarest of all complications. Chronic gonorrheal urethritis frequently occurs, usually, however, as a local condition in or about Skene's ducts. Stricture of the female urethra as a result of this disease the writer has only observed once in an experience of over twelve years at Vanderbilt Clinic. Suburethral abscess, as a result, has been noted by the writer three times. Based upon his observation of the natural course of the disease, the writer's treatment has consisted (1) in proper instructions relative to diet and the contagiousness of the disease; (2) in copious draughts of plain water and such internal medication as will render the urine bland, of which the tincture of hyoscyamus and the bicarbonate of potassium have been as efficient as any; (3) in the applications of heat to the external genitals, preferably by means of hot sitz baths, and (4), the most important of all, in frequent cleansing of the external genitals with plain or mildly antiseptic solutions, in order to prevent infection of Skene's ducts and the ducts of the Bartholinian glands. Injections in the acute form of the disease the writer believes are unnecessary and perhaps harmful. The writer's general conclusion in regard to the disease in the female urethra, then, is that it is usually less important than in the male, the chief thing being the frequent involvement of Skene's ducts whereby reinfection of other parts is always liable to occur, and the constant danger of the transmission of the disease to others.

The Vagina.—The most frequent misapplication of terms is the expression "gonorrheal vaginitis," as applied to the presence of the infection in adults. The absence of glands and the character of the vaginal epithelium render this part of the genital tract comparatively invulnerable to the invasion of the gonococcus, except in young girls before puberty, in adult women during pregnancy and the puerperium, and in elderly women at the time of the menopause. A redness and irritation from the stagnation of gonorrheal discharges from the uterus often occurs, but a few douches with a mildly antiseptic solution quickly clears it up. The writer at this time will only emphasize the importance of its early recognition and treatment as representing the chief lesion in young girls before puberty. It is commonly taught that, on account of the rudimentary condition of the uterus and adnexa at this period of life, these organs are rarely involved, but the reports of cases of obscure peritonitis in female children are rapidly accumulating, so that this observation may not be so true as it was once thought to be. In two cases of young women who have presented a chronic uterine discharge, with genital organs resembling those of women at the menopause, the writer was able to trace the course of the disease directly back to a gonorrheal infection in childhood.

In elderly women whose history shows that a gonorrheal endometritis has existed for a long time the atrophic changes incident to the age of the patient will be often seen associated with a very profuse and purulent discharge containing gonococci, often also in conjunction with an acute purulent urethritis. There is no doubt in the writer's mind that these atrophic changes are important factors in the lighting up of an old gonorrhea with a reinfection of the urethra. The vaginal mucosa, however, in its normal condition, should be considered as comparatively invulnerable to this infection, and to act upon the belief that treatment directed exclusively to this part of the genital tract will eradicate the disease can only lead to grave disaster. It should also be remembered that the taking of the vaginal discharge alone for a microscopic diagnosis of the disease will often lead to error.

The Ducts of Bartholin's Gland.—The common mistake of regarding the glands themselves as the seat of the disease is illustrated by the printed program for this evening, as the infection is usually limited to the ducts, and whenever the glands are involved it is generally regarded as a mixed infection. The infection of these ducts is considerably less frequent than that of the urethra, and usually occurs later in the disease. It is the result, probably, in most instances of the stagnation of gonorrheal discharges about the genitals, and thus is largely preventable. The smallness of the opening undoubtedly accounts for their escape in a certain number of cases, for in children in which the opening is very small the ducts are almost never involved. The swelling of the duct from the retention of pus in the closed duct is well known to all. Not infrequently, however, if seen early, the opening is still patent, and pus may be pressed out, and by daily milking its closure may be prevented until the inflammation has disappeared. I know of no way of treating the inflammation in the duct itself except by incision and drainage.

The Diagnostic Value of These Lesions to the Physician.—It has been the custom of the writer for a number of years to teach that as a matter of routine the external genitals should be inspected and palpated before the vaginal examination is made, interpreting the following as evidences of a previous or recent gonorrhea; the swelling of a Bartholinian duct, the presence of a purulent discharge from the opening, the presence of reddened patches about the orifice (the macula gonorrhoica of Sänger). Although as shown by Krönig and Menge, and others, infection of these ducts in exceptional instances may be due to the staphylococcus or other bacteria, the gonococcus is the causative agent, in almost all cases. The presence of pus in the urethra is given the same interpretation as it is in the male. In order to detect the presence of pus in the urethra, a certain technique in the examination must be followed. The meatus must be first wiped perfectly clean in order not to mistake discharges that may be present about the vestibule for urethral pus. With one finger in the vagina the urethra is milked from the vesical

neck downwards to the meatus. The pressure against the urethra must be continued down to the very edge of the meatus, the latter part of the pressure being made against the anterior surface of the symphysis. It is only in this way that discharges retained in Skene's ducts will be expressed, it frequently appearing on either side of the urethra at the very last moment. The frequency with which pus may be expressed from these ducts may be concluded from the fact that in fifty clinic cases recently examined by the writer, pus or muco-pus was present in thirty-six. In regard to the information that the presence of these lesions may give, the writer wishes to call attention to one particular class of case, which is often seen in any large clinic, namely, the patients applying for relief of sterility. In many of these cases the uteri have been previously dilated and curetted, and among them are not a few with symptoms that they did not have previous to their operation. The examination will disclose the presence of inflammatory diseases of the adnexa which, from their history, there is every reason to believe followed their operations. The signs of an old gonorrhea will also be found about the external genitals; usually pus can be expressed from Skene's ducts. The writer has made this observation so many times now that he always points out to the students the significance of these signs about the external genitals, and teaches them that, although the uterus may be of that type in which operative procedures are often of value, yet with the presence of pus in the urethra, for example, all operative measures are contraindicated.

In conclusion, the writer would call special attention to the value of these signs of gonorrhea as aids in the diagnosis and treatment of diseases of the female genital organs.

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GONORRHEA DURING PREGNANCY.*

By J. CLIFTON EDGAR, M.D.,

NEW YORK

The time limit of ten minutes allowed for the presentation of this important subject of necessity compels one to confine his remarks to the more prominent facts only regarding gestational gonorrhea.

Few observations have heretofore been made on the subject; in fact, so little work has been done upon both pregnancy and puerperal gonorrhea that there are some who deny the existence of a gonorrheal morbidity or mortality in pregnancy and the puerperium. The difficulty in recognizing the gonococcus has undoubtedly favored this belief.

It is in private practice particularly that our most valuable and reliable information can be obtained upon this subject, because here one often can observe the course of the disease from infection through pregnancy, during labor, and until the termination of the puerperium.

The average case in a maternity hospital is seen possibly once before confinement, and often not until labor actually sets in. Then, again, patients of the lower class can rarely be prevailed upon to remain more than ten days in the hospital after confinement, unless actually bed-ridden, so that observations and statistics of this class of patients must naturally be looked upon with discredit. To be sure, the difficulty of getting patients to speak the truth in such matters as vaginal infection applies to both classes of patients, but this difficulty is largely counterbalanced in private practice by reason that the patient is more often seen, and can usually be kept under observation from start to finish.

Even accepting, for the sake of argument, the statement of Blaschko, claiming that every man who does not marry until the age of thirty, has had gonorrhea twice, or that of Ricord, that the percentage of males who contract gonorrhea is over eighty, or the recent one of Erb[1] that about forty-nine per cent. of men have gonorrhea before marriage, most of them contracting it before the age of twenty-five. Accepting these figures as within the bounds of truth, still my observation leads me to take a rather optimistic view of the effects of gonorrheal infection upon the pregnant woman. By this I mean those instances in which infection has occurred either during pregnancy or just prior to impregnation, or during the act of conception itself. I do not wish to be understood as belittling the importance of the gonococcus as a causative factor in the production of endometritis and subsequent abortion, salpingitis, pelvic inflammation, a stormy or even a fatal puerperium, and one-child sterility, but simply that women who contract gonorrhea during pregnancy do not necessarily suffer as far as the pregnancy is concerned. Indeed, it would appear that invasion of the uterine cavity by the gonococcus during pregnancy is less likely to occur than in the nonpregnant state. To be sure, the gonococcus has been demonstrated in decidual endometritis in a limited number of cases by Neumann, Maslovsky, Williams, and others. Again, in a still more limited number of instances, the gonococcus is said to obtain access to the liquor amnii, causing antepartum gonorrheal ophthalmia in the fetus.

Armarguac[2] is authority for one case of prenatal gonorrheal ophthalmia, and Nieden[3] reports an instance in which the fetus was born with a caul, and when liberated from the membranes was found to have gonorrheal conjunctivitis. Such cases could hardly occur unless a gonorrheal endometritis or deciduitis had previously existed.

Wintersteiner's analysis[4] of 122 cases of actual ophthalmia neonatorum includes two instances of antepartum infection of the fetal eyes.

A glance at the literature of gestational gonorrhea will readily demonstrate a wide diversity of opinion upon the subject.

It was Sänger's belief that gonococci continue to thrive during gestation. He has seen them in various localities. One claim of his is that gestation is seldom interfered with, which is controverted by some of his colleagues.

Frühenholz also denies that the gonococcus is militant against pregnancy. For him gonorrhea in early gestation is a reawakened focus. On the other hand Audebers claims that gonorrhea interrupts pregnancy in two out of three cases.

Fehling calls attention to the fact that conception and contraction of gonorrhea are prone to occur at the same time. He believes under such circumstances that the cocci may reach the tubes before labor.

Steinbuchel studied 328 pregnancies to determine the frequency of gonorrhea. He found the cocci present in 70 in the secretions, but, notwithstanding, but three cases of puerperal gonorrhea resulted. Conversely Krönig found that of 296 cases of puerperal fever, 31 had antecedent gonorrheal endometritis.

Bumm thinks that gonorrhea is spontaneously healed late in pregnancy, as far as the disappearance of cocci from the secretions is concerned. But he believes that the said germs persist alive in the endo-

*Read at a meeting of the Medical Society of the County of New York, March 25, 1907.

cervical glands, and may be roused to activity at labor. Wertheim's views are the same.

The fact that gonorrheal infection of pregnancy is often apparently mild in character, and frequently fails to attract attention by reason of the absence of endometritis, tubal involvement, and pelvic inflammation, is liable to deceive the patient and her physician, into a position of false security. Treatment of the condition is desultory or neglected, and all too late the true seriousness of the infection is realized at labor and the puerperium, by reason of a gonorrheal ophthalmia of the infant and an extension of the infection into the uterus, tubes, and pelvic peritoneum of the mother.

The most severe case of gonorrheal ophthalmia I ever saw in private practice was in the instance of a patient who married in January, and whose husband subsequently confessed to me that he suffered from acute gonorrhea the previous August. The presence of gonorrheal infection in this patient was unsuspected during pregnancy, as her only symptom was a persistent leucorrheal discharge which she attributed to her pregnant condition, and for which she did not consult her physician. In another instance, gonorrheal infection of the glands of Bartholin resulted during the latter part of pregnancy in little if any systemic disturbance, but immediately after delivery the symptoms of pelvic infection became marked, general systemic infection followed, and death occurred ten days post partum.

A serious sequela of gestational gonorrhea, and one which, so far as I know, has received little if any attention, is the effect of several months' insidious endocervicitis of gonorrheal origin upon the tissues of the cervix and lower uterine segment. In several of my cases in private practice I can explain the prolonged and difficult dilatation of the os on no other grounds.

I am of the opinion that the teaching of Bumm and Krönig, which held that the vaginal mucus possessed a bactericidal action, has done more harm than good, because it has been widely misunderstood and generally applied to gonococcus infection. The vaginal mucus has never been proven to possess such an antagonism to the gonococcus. If we accept the frequency of gonorrheal infection in the male as laid down by Blaschko, Ricord, and Erb, as only approximately correct, then it must follow that the same infection in the female is more frequent than is generally accepted. It certainly, in my experience, is commonly met with in private practice. And if this be true, and moreover if it be true that gonorrhea in pregnancy is often overlooked by reason of the absence of uterine and parauterine, and periuterine conditions, then the tendency to consider the pregnant vagina sterile in most instances is dangerous and liable to increase the morbidity of the puerperium, and the cases of ophthalmia neonatorum.

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50 East Thirty-fourth Street.

The Differential Diagnosis Between Acute Appendicitis and Acute Salpingitis.—The sudden acute onset of abdominal pain with tenderness over the appendix region, but with rigidity of the right rectus low down, is very suggestive of acute salpingitis. The diagnosis is further confirmed if there is high temperature and extremely hgh leucocyte count (20,000-40,000; polynuclears, 80-90 per cent.), even though vaginal examination be negative.—*American Journal of Surgery.*

THE EYE AND EAR COMPLICATIONS OF INFLUENZA.*

By CHARLES GRAEF, M.D.,

NEW YORK.

As influenza is an acute, infectious disease, one may expect it to present eye and ear affections of a type common to other diseases of this class. As it is an infectious disease with a markedly catarrhal tendency, its effects are most marked on the mucous membrane portions of these organs. When we remember the vast numbers of persons commonly affected in any epidemic of influenza, it is proper to add, however, that eye complications are comparatively infrequent. The initial coryza common with many patients is accompanied by hyperemia of the conjunctiva. It is hardly a complication, and should be rather regarded as a *symptom* of the disease. It is an *irritation* of this mucous membrane—not an inflammation.

Conjunctivitis with mucous or mucopurulent secretion, is much less common and severe cases occur but rarely. Croupous, and even diphtheritic forms of conjunctivitis have been observed as a sequence of influenza, but are not properly classed as a complication of this disease. Endemic outbreaks of catarrhal conjunctivitis, commonly known as "pink eye," sometimes occur with or soon after the appearance of influenza in a community. Such an outbreak is a coincidence, rather than a matter of cause and effect. Sometimes edema of the conjunctiva and swelling of the lids are seen, and hordeola or styes are quite common.

Conjunctival hemorrhages occur at times in influenza patients, and are produced by purely mechanical means through severe spasms of coughing and sneezing. This is especially likely to happen in older persons, whose vessels have brittle walls.

Inflammations of the tear duct are caused at times by the infection of the membrane lining this passage, and in patients liable to such troubles, outbreaks of dacryocystitis are easily produced.

Influenza patients suffer quite often with eruptions of *herpes*. On the lips this occurs in as many as 25 per cent. of all cases. Similar eruptions occur quite frequently on the lids and cornea, and breaking open are likely to end in ulcers of a more or less troublesome form.

Aching pain about the eyes, with tenderness on pressure and on movement of the globe, is often complained of. These pains are more often due to inflammation and swelling of the mucous membrane lining the frontal sinuses and other cavities about the orbit, than to any affection of the eyes themselves.

More serious affections of the eyes, due to influenza occur, but it is pleasing to note that the more serious the complication the less often it is seen. Many of these, too, are due to embolic processes and are caused by mixed infections—staphylococci, streptococci, and the pneumococcus being most often responsible (Knies). Inflammations of the iris and of the connective tissue coats of the eye are among the rarer occurrences. I have seen recently several cases of iritis, in rheumatic persons, in whom the outbreak was very evidently due to an attack of influenza.

The occasional occurrence of acute glaucoma in persons disposed to this serious disease, following infection by the influenza poison, should not be for-

*Contributed to a symposium on influenza before the Bronx Medical Association, March 28, 1907.

gotten. The severe headache of influenza easily disguises the similar pains due to glaucoma, and the confusion of these causes may easily end in loss of sight. Any patient suffering from influenza and having a persistent headache which does not yield to the usual sedatives should prompt a careful examination of the eye, and nasal passages, for in these the root of the difficulty will be frequently found. Cases of optic neuritis due to influenza alone, occur very rarely. They have been reported.

Nervous disorders of vision, weakness of accommodation, and twitching of the lids, are not uncommon in persons who have had a severe influenza and a protracted convalescence. Such troubles are not infrequently aggravated by the patient's efforts to read too soon after his acute symptoms have subsided, and especially by prolonged attempts to read in bed.

Ear affections due to influenza are much more common. Every epidemic of this disease brings to the aurist a large increase in the number of acute ear cases under his care, and these cases are of a type distinctly more virulent, as a rule, than similar infections due to other diseases in which the ears are attacked. Many of these cases develop mastoiditis, and rapid destruction of this bone is frequently found. It is safe to say that no other disase is so frequently responsible for severe ear infections in older persons as influenza.

The pronounced catarrh accompanying the disease is of course responsible for this fact; the accessory sinuses of the nose and the middle ear and Eustachian tube being lined with a continuation of the mucous membrane lining the nasal chambers proper, inflammation and swelling of the latter, if severe, means a similar state throughout. The aching pains in the head and ears so commonly complained of should not be explained as neuralgic, in the sense that this term is usually used; they are due to acute congestion and inflammation of regions that are under our control in the majority of cases.

It is a mistake to wait for the rupture of the tympanic membrane to relieve the distressing earache, for instance. This pain is nearly always due to pressure caused by accumulated fluid in the ear drum, and while this is sufficient in most cases to burst its way through the macerated drumhead in time, the infective matter has during this interval a pronounced tendency to seek the antrum and other cells of the mastoid bone. Many of these sufferers make the mistake of putting such mixtures as warmed sweet oil and laudanum into the ear to relieve the pain. This is wrong, because the laudanum does little more good than plain warm water put into the ear would do, and the sticky mess thus made in the ear is surgically unclean and favors the activity of the infective agents, once they have penetrated the drum membrane.

A more logical and effective plan is that of applying to the drumhead a gauze drain, whose inner half has been soaked in glycerine. This undoubtedly acts well in many cases if used early, having a tendency to abstract from the drum a portion of the fluid collected in it. Three or four grains of carbolic acid to the ounce of glycerine does no harm, and is believed to be of advantage not only for its antiseptic properties, but on the ground that it acts as a local anesthetic of some value. The glycerine drops should be warmed before using. Heat applied to the inflamed ear by means of a hot-water bag, or bags of salt, etc., is very comforting and helpful. If these measures do not bring relief within an hour or two, nothing but an opening of the drum membrane and release of the accumulated fluid will do so, and a free incision should be made in the membrane for this purpose. The term "paracentesis" should not be used in this connection—the stab wound indicated by it, and even yet sometimes depended on in practice, being of little or no value as a therapeutic measure. A free opening made in the drumhead relieves the pain, shortens the after-period of discharge, and preserves the hearing, since knife wounds heal more readily and cleanly than ruptures of the membrane—and, above all, greatly lessens the danger of extension of the disease to the mastoid bone.

A fairly large number of influenza patients have ear troubles of a less severe form than this: Dullness of hearing, a feeling of stuffiness in the head, and noises in the ear (tinnitus) are often complained of. These are cases of catarrh of the Eustachian tube, and are, as a rule, readily cleared up with inflations by the catheter, repeated at intervals of a day or two for a week or ten days, though some of them are very persistent even under the most painstaking treatment.

Another form of ear trouble common in influenza patients is the painful condition of the canal, due to furuncles. The pain of this trouble is often intense and cannot be distinguished from that due to middle ear inflammations. These cases are commonly made more tedious by the introduction of such messy oils as I have spoken of. Nothing but a free opening of these furuncles, they are nearly always multiple, will cut short the pain and deafness caused by them.

Children suffer from influenza more generally than is recognized. In them the systemic symptoms are not so much complained of as in adults, but the numerous cases of cold in the head associated with earaches and middle-ear abscess seen in children during these epidemics, undoubtedly owe their infection to the same germs that are affecting the older members of the family with grippe. Such cases are, of course, most common among children who have adenoid vegetations in the pharynx, and correct treatment of cases of this kind should always include a clean removal of the adenoid growths. Lacking this the ear troubles are almost certain to persist or to recur from time to time.

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The Nurse's Obstetric Knowledge.—In a recent book on midwifery for nurses some opinions are expressed by the reviewer which are not in sympathy with the author's statements. The latter thinks that a nurse might treat chorea in pregnancy. The reviewer regards this as extremely inadvisable. The author says that he thinks "a nurse ought not to perform version in England. If she intends to practise midwifery in some foreign country, where doctors are few and far between, she may obtain special instruction with the phantom and fetus, and learn how to turn, when to turn, and when not to turn. The doctrine that it is better for a patient to run the risk of dying of hemorrhage than to have version performed by a nurse sounds a hard one, but the ordinary training of a nurse does not develop sufficient manipulative skill for her to perform version with safety, and unless she were given much more training than is at present considered necessary she would be very likely to do her patient grievous bodily harm." With this, as applied to version in placenta prævia, or to version early in labor, the reviewer entirely agrees, but he thinks it may reasonably be said that if a nurse when called to a case finds the membranes unruptured, the os uteri fully dilated, the child lying transversely and freely movable, she does better if she takes hold of a foot and delivers than if she sends for a doctor and runs the risk that the membranes may rupture, the liquor amnii escape, and the uterus contract round the child before he comes. In such cases there is hardly any risk in version, the risk being to the child in extraction, and extraction in breech cases is recognized as part of a midwife's duty.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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INFANT MORTALITY IN LARGE CITIES.

THE death rate of infants in all the large cities of the civilized world is far greater than it should be. This excessive mortality is ascribed to a variety of causes. In New York the chief reasons that infants die prematurely are overcrowding in the tenement districts, injudicious feeding, the impossibility or rather the great difficulty of procuring unpolluted milk at a moderate price, and the fact that many women of the working class labor themselves, either at home or in factories, thereby neglecting their infants. However, the situation here, so far as infant mortality is concerned, is hardly so bad as in London. In the British metropolis the death rate among the young and the great increase of degeneracy are exciting much concern, and of late the matter has been discussed from all points of view and by all sorts and conditions of men.

The most lamentable feature as regards London, and it must be said to a lesser extent as regards all large British cities, is the ever-increasing habit of women drinking at the bars of saloons. This in itself must react disastrously upon the offspring. But the worst phase of the matter is that not only do women of the lower classes frequent saloons, they also take with them their infants in arms, to whom they give beer or strong spirits. The question has become recently a public scandal in London, and one of the most brilliant journalists of that city has been writing a series of graphic articles narrating all the facts of the case.

So great an impression has been caused by the publication of these articles that on March 4 a large conference was called to discuss the matter, at which were present eminent men of all professions, the medical profession being especially well represented. The chair was taken by Sir Thomas Barlow, and speeches were made by Sir Victor Horsley, Sir Lauder Brunton, and Professor Sims Woodhead. Sir Thomas Barlow pointed out that the birth rate of Great Britain was going down in every division of society, and at the same time, so far as the children of the town were concerned, infant mortality was not lessening. In his opinion the panacea for the evil lay in the improvement of education and in the teaching of hygiene and temperance in the schools. As to the immediate peril of women drinking in saloons and teaching infants to drink also, protection should be afforded the infants in some way. The problem was to devise legislation, short, simple, definite, and direct, to meet the peril.

Sir Lauder Brunton spoke to the same effect, saying that it must be quite evident that the custom of giving infants gin or gin and water was a process of slow poisoning which destroyed the child one would say body and mind, were it not that very often the body was destroyed before the mind had had time to develop. Other speakers urged the necessity of legislation to stop as quickly as possible the custom of women taking infants in arms to saloons and giving them strong drink, as the results must be disastrous in the extreme.

While New York does not suffer to any extent in its mortality rate from the custom of women drinking and teaching children to do the same, yet in one respect, as concerns the influence on the death rate, the conditions in New York and London are very similar. The state of the milk supply is referred to. In London this, according to all accounts, is much worse than in New York. The *Lancet* has had recently special articles treating of the way in which milk is retailed in small general provision shops. It appears that in London something like 80 per cent. of the shops in which milk is sold are of this character. The sanitary state of these shops leaves much to be desired, and indeed from all points of view the milk supply of London is susceptible of great improvement. However, the physicians of London and to a lesser extent the population generally seem to be awakening to a realization of this fact, and no doubt, as is the custom in Great Britain, reforms will be introduced slowly but surely. The British people are not quick to move, but when they do move they usually do things thoroughly.

THE RIGHT UPPER ABDOMINAL QUADRANT.

IT is not so many years ago that the interest of the medical profession was centered in the lower right abdominal quadrant. But now we find that the appendix and the right ovary, having been thoroughly exploited, must bow to the upward march of progress and retire in favor of that group of organs and structures situated in the corresponding upper quadrant of the abdomen. Here may be included the gall-bladder and its ducts, the pylorus and first part of the duodenum, the head of the pancreas, and the right kidney, which together offer to the surgeon many varied opportunities for differential diagnoses and operative procedures. Thus an attack of pain in the region referred to may be due to stones in the gall-bladder or the common duct, to cholecystitis, stricture of the pylorus, ulcers or perforations, pancreatitis, and a number of other conditions. The differential diagnosis of these various disturbances is surrounded by many difficulties, and only too often must the surgeon wait for an exploratory laparotomy to reveal the true state of affairs. The question is very ably discussed in a recent paper by F. B. Lund (*Boston Medical and Surgical Journal*, March 21, 1907), who refers to the upper abdomen as the borderland not only of surgery, but also of medicine. The surgeon by early operation in cases of gallstones and gastric ulcer has given us our present knowledge of the pathology of these diseases in their early and curable stages. This fact

is of great importance to the general practitioner of medicine, who may acquire a greater skill in the diagnosis of these conditions if he attend the operation itself rather than gain his knowledge from the autopsy table. There a diagnosis may be confirmed or disproved and on a subsequent occasion he will be in a position to profit by the combination of clinical observation and that of the operating table.

As the diagnosis of pathological conditions in the upper abdominal quadrants is so often in doubt, the surgeon must be prepared to deal with whatever lesions may present themselves. Thus, where a case is supposed to be one of cholecystitis, the operator must be ready to change his opinion as soon as the abdominal cavity is opened and to perform a gastro-enterostomy or other operative procedure in case there is present an ulcer of the duodenum or pylorus. The early surgery of these conditions has been proved by experience to be perfectly safe in competent hands, and it is only in the late or neglected cases that the mortality is high. It is only by stimulating the interest in this comparatively new field that we can hope for better results in the surgical treatment of lesions of this portion of the abdominal cavity, for such interest means that the possibility of these various lesions will be borne in mind when the physical signs and symptoms in any given case point to some trouble in this section.

THE PROPHYLAXIS OF MENINGITIS.

The question of the prevention of epidemic cerebro-spinal meningitis is a subject which is of the most vital interest to the whole civilized world and especially at the present time to the medical men of New York. Since the cessation of the actual epidemic, which was at its height in 1904 and 1905, cases have occurred endemically in numbers sufficient to keep the subject alarmingly before the minds of those most conscious of our comparatively helpless condition to prevent them.

The prevention of any infectious disease, of course, is directly dependent upon the detailed knowledge we may be able to gain as to the organism which causes it, its vitality, its favorite haunts, its most common roads of invasion. The diplococcus of Weichselbaum is now pretty well understood as to its biological functions, but there is still a great deal of work to be done. The difficulties of its cultivation, we believe, have generally been much overestimated. The German observers, especially, lay much stress upon its delicate reaction to temperatures and the necessity of great richness in the constitution of the media—while several observers here in America appear to have been able to cultivate the organism with much greater ease and have shown with sufficient certainty that the organism is unfortunately not as delicate as had been supposed. Its resistance to external environment when not kept upon artificial media—that is to say, just as the organism would be cast off by the infected patient—has been variously determined. Sunlight will kill the meningococcus, according to Bettencourt and Francas, in two hours; according to v. Lingelsheim, in six hours. Complete drying will kill it—certainly in the space of twenty-four hours.

These observations, added to the fact that, so far, it has not been possible to isolate definitely identified meningococci from dust, furniture, and other objects in the rooms of patients, seem to indicate rather strongly that few if any of the new cases are traceable to an infection.

The investigations into the nasal and pharyngeal secretions of individuals in direct contact with patients have yielded rather more significant results. During the meningitis epidemic in Silesia the diplococcus was found—often in pure culture—in the throats of many perfectly healthy people. Of those in contact with patients, as many as 75 per cent. were found to harbor the organism in their noses and throats, and this, not for a short period, but for weeks and months.

Kutscher, in a thoughtful article in the *Medizinische Klinik*, 1907, No. 12, concludes that it is in the infection by agency of these indirect carriers that we must look for most of the propagation of the disease, and that in these persons we have the factor at present most reasonably offering hope for successful prophylaxis.

The difficulties of formulating a practicable plan on the basis of such knowledge are, of course, tremendous, but at any rate until our knowledge becomes more complete there can be no question that isolation, with all the usual precautions, is at least advisable for these cases, including their exclusion from the general wards of hospitals and the utmost care of disinfection of nose and throat of those in contact with the patients before they mingle with other and possibly more susceptible individuals.

ACUTE SUPRARENAL INSUFFICIENCY.

This condition is believed by Sergent and Bernard to be responsible in many cases for sudden death where no other cause is apparent. Two functions may be associated with the suprarenal gland, one an antitoxic, the other an angiotonic. The former becomes active against the various toxic substances which are developed as the result of muscular exertion as well as those due to other endogenous sources. The angiotonic effect is manifested by the phenomenon of vasoconstriction. Among the conditions which lead to this type of glandular insufficiency are tuberculosis, hemorrhages, neoplasms and inflammatory processes, and the affection may run an acute, a subacute, or a chronic course. In the acute cases which run their course in a few days, the alarming symptoms come on very suddenly and death follows rapidly. There may be no other previous evidence of trouble, and the subjects are often apparently healthy young men. Otherwise the condition is marked by an attack of extremely severe pain in the lumbar region accompanied by anorexia, vomiting, diarrhea, headache, prostration, and a small and weak pulse, with a tendency to collapse. The general symptom complex would lead one to suspect acute poisoning, cholera, typhoid fever, or some acute abdominal condition. Sudden death from this affection of the suprarenals during apparently good health assumes, therefore, considerable importance from the forensic standpoint, for it might be assumed that certain direct causes, such as trauma, slight infections, inflammations of the appendix or the adnexa, pregnancy, malaria, or vari-

ous forms of poisoning, acted as predisposing factors in the production of a suprarenal insufficiency.

From these observations it is quite apparent that the pathology of the suprarenal glands is not exhausted by a knowledge of Addison's disease and that other affections of the glands may exist. The diagnosis under any circumstances is surrounded by many difficulties. In the more chronic cases the administration of suprarenal extract is advised, and when a suspicion of beginning renal insufficiency exists a prophylactic treatment is indicated. Bernard states that this should consist of avoiding overexertion, traumata, infections, and intoxications, as well as the administration of tonics.

The Use of the Opsonic Index in the Diagnosis of Tuberculosis.

A further contribution to this subject was recently made by Drs. I. S. Stewart and L. C. Ritchie in a paper presented to the Edinburgh Medico-Chirurgical Society (*Lancet,* March 23). The method which they submitted and at which they had been working for some time was one which rendered possible a diagnosis of tuberculosis even when the signs and symptoms were not conclusive. It consisted in the injection of a minute dose of tuberculin R. in conjunction with the observation of the tuberculoopsonic index of the blood before and after inoculation. The conclusions were based on observations made on 122 consecutive cases of medical and surgical tuberculosis. The cases were divided as follows: 1. Those in which there was reasonable ground for diagnosing tuberculosis. In many diagnosis was based on pathological proof (examination of discharges, operation, etc.), and in the remainder by continued clinical observation. 2. Either normal cases or those suffering from diseases other than tuberculosis. The authors drew attention to the fact that several observers had shown that the tuberculoopsonic index varied slightly in health. The normal limits of variation were from 0.8 to 1.2. The first group (tuberculosis) consisted of 82 cases. The indices of 41 fell within the normal limits and 41 outside. In the second group there were 40 nontuberculous cases, of which 29 were within and 11 outside the normal limits. A diagnosis based on one examination of the tuberculoopsonic index would have resulted in an error of diagnosis in one-half the number. In the nontuberculous cases 27.5 per cent. were outside the normal limits, and a reliance on this test would have led to error to this extent. In acute tuberculous cases the swinging index might also lead to error in diagnosis. In a paper in conjunction with Dr. D. Lawson of Banchory it had been shown that if a small quantity of tuberculin R. were injected into a tuberculous patient there was a diminution in the index, but the reverse occurred in a healthy case. The conclusions were: (1) the opsonic index *per se* was an unsatisfactory means of diagnosis, as both tuberculous and nontuberculous cases fell within and without normal limits; (2) if a negative phase appeared after inoculation the existence of tuberculosis might be diagnosed; and (3) the absence of a negative phase indicated the absence of a tuberculous infection.

The Mimicry of Malignant Diseases.

It is very often a most difficult matter to differentiate between malignant and benign growths, for the clinical features and macroscopical appearances of both may closely agree, and it is only by the microscopical examination that the difference can be detected. In this connection it may also be assumed that in many instances a "cure" can be traced to the fact that the offending tumor removed by operation was not really of a malignant character. In the large intestine particularly a neoplasm may closely simulate malignant disease, not only in its general appearance, but also in the symptoms which it causes, and tuberculous lesions of the cecum or the ascending colon may produce effects which can only with difficulty be distinguished from those of cancer. Moynihan, writing in the *Edinburgh Medical Journal* for March, 1907, states that he has twice performed colectomy for supposed carcinoma, when subsequent examination of the tumor showed its undoubted tuberculous nature. Aside from these cases, which are very uncommon, there are certain tumors of the large intestine and the sigmoid flexure which present all the characteristic signs and symptoms of malignant disease, yet prove to be nothing more than simple inflammatory conditions. Moynihan gives the detailed histories of six cases in which this error was made, and although they differ in many respects, they all present a close resemblance if not an actual identity of symptoms with those of malignant disease. It would appear that the inflammatory tumors of the large intestine are perhaps more frequent than we have supposed. The pathological features are not always the same. The inflammation may begin in and penetrate the mucosa, a false diverticulum may form and may perforate, extensive undermining ulcerative processes may be combined with a form of polypoid growth, and finally the inflammatory deposit may affect the peritoneal coat chiefly or solely, leaving the mucosa supple or intact.

The Pathology of Burns.

As considerable doubt still exists regarding the cause of death in fatal burns, all investigations on the subject, particularly if they are of an experimental nature, will prove of general interest. Among the most recent of these is one by Pfeiffer (*Virchow's Archiv,* Vol. 180, No. 3), which was carried out on a large number of rabbits. He claims that death from burns in typical cases is caused by a toxin which circulates in the blood and is excreted by the kidneys unchanged. It is probably a disintegration product due to the action of heat on the albumin molecules. Other investigators have claimed that this toxin exerts a hemolytic or agglutinating effect, but this Pfeiffer denies. He thinks, moreover, that if death results within a period of about three hours, it is due to the nervous shock rather than to any toxic action. This may also exert an influence at a later period, from two to three weeks, by weakening the organism in such a manner that it readily succumbs to a secondary infection. Weidenfels and von Zumbusch (*Archiv für Dermatologie und Syphilis,* Vol. 76), working independently, come to a similar conclusion, believing that the toxic material is absorbed directly from the burned skin. These observers also made some experiments to determine a suitable method of treatment, and found that excellent results attended the subcutaneous infusion of decinormal salt solution even when one-third of the entire skin area was involved. Cardiac stimulants are immediately indicated, including caffeine or coffee, alcohol, camphor, and strophanthus or digitalis. Heart depressants

such as morphine should be avoided. The infusions may be preferably given under the healthy skin in several places at once in order to save time and obtain an immediate effect. As the results with the infusion treatment have been so uniformly good, the procedure, which is simple and easily applied, commends itself to further trial.

Domestic Animals in the Etiology of Infectious Diseases.

The rôle which the ordinary household pets may play in the dissemination of a considerable number of infectious diseases is not sufficiently appreciated by the laity. Attention has often been called to the danger which attends the more or less intimate contact between such animals and the members of a household, and yet the warning is little heeded. Among children particularly the fondness for certain pets is not limited to such association during the daytime, but must be satisfied by taking the animal to bed. Letourneur, in an interesting article in the *Bulletin général de Thérapeutique*, October 23, 1906, calls attention to the large number of infectious conditions prevalent among domestic animals which can be readily transmitted to human beings. Prominent among these is a series of parasitic skin diseases of dogs and cats which are very difficult to get rid of in the human patient, especially if the original source of the infection is not eliminated. The *Tænia echinococcus* also spends part of its life cycle in the intestinal canal of the dog, and it is most often found in persons who come into frequent contact with these animals. Investigation has shown that cats are also apt to contain this parasite, and so the danger of infection is correspondingly increased. There is moreover a form of diphtheria found in birds which is readily communicated to the human subject, and parrots are often afflicted with a type of infectious enteritis which has likewise been demonstrated in persons who had come into contact with these animals. It has also been frequently shown that tuberculosis may be communicated from man to dogs, cats, and birds, and although it has never been definitely proved that the reverse can take place, the possibility of such an occurrence must not be lost sight of. If in conclusion we remember the readiness with which rabies may be communicated from cats and dogs to human beings, it is quite evident that if we desire to keep such animals about us and live in more or less immediate contact with them, a most careful watch must be kept over their health and general condition.

Syphilis and Tabes.

The belief that tabes is directly dependent upon syphilitic disease has gained such widespread recognition that those who oppose the idea find it necessary to carry their studies in the most varied directions in order to substantiate their contentions. A French surgeon, Dr. Peyronie (*Centralblatt für Nervenheilkunde und Psychiatrie*, No. 229, Vol. XXX.), who has had considerable experience with syphilis among the Arabs of Northern Africa, states that among many Mohammedans the disease is looked upon as a holy visitation, and that the possession of a syphilitic necrosis of the nasal bones is regarded as an honor. The disease has, therefore, become widespread, and it has come to be a rule among physicians practising in these countries that in treating an Arab it may be safely assumed that he has had syphilis. One writer is referred to who found that among 4,000 Arabs who consulted him in a professional capacity only 100 were free from acute or hereditary syphilis. It is a well-known fact, however, that among these people, tabes and other paralytic affections are comparatively rare or entirely unknown, and this fact is brought forward by Peyronie in opposition to the theory of these diseases with which the names of Erb and Fournier are so closely identified. The direct dependence of tabes on syphilis has not as yet been satisfactorily demonstrated, although it has been very widely accepted as a fact.

News of the Week.

Insanity in Murder Trials.—Senator Agnew has introduced in the State Senate a bill adding a new section to the criminal code relating to the insanity of a defendant indicted for a felony. It is provided that either the defendant's attorneys or the District Attorney may apply to any justice of the court in which the indictment is pending, for an order committing the defendant to a State hospital for the insane for observation. The motion must be based upon affidavits, executed by two duly qualified examiners in lunacy, which must show that a personal examination within ten days before the notice of motion satisfied the examiners that the defendant was insane. If the judge be satisfied that the interests of justice so require, he shall make an order committing the defendant to a State hospital for the insane for observation for a period of not less than three, nor more than six, weeks. The Superintendent of the hospital or the physician in charge of the defendant shall report to the court at the end of three weeks the results of the observation, and should the defendant be detained in the hospital for more than three weeks a second report shall be made when he is returned from the hospital. Another bill introduced by Assemblyman Duell provides that in any criminal action wherein the issue of insanity is involved no evidence of statements made to the person alleged to be or to have been insane by a third party shall be introduced as showing or tending to show such insanity, or as aggravating such insanity unless the facts alleged to have been narrated be first proved.

Another Fire at McGill.—Less than two weeks after the disastrous fire which wiped out the MacDonald engineering building of McGill University, the Medical Building was also completely destroyed by fire on April 16. In addition to the usual equipment of a medical school the building contained one of the best medical museums in the country. The financial loss is placed at $500,000, though of course much of the material destroyed was practically priceless. It is supposed that the fire was of incendiary origin.

For a Federal Health Board.—The committee of one hundred appointed last June by the American Association for the Advancement of Science to further the project of founding a Federal Department of Health, held a meeting in this city on April 19. These Vice-Presidents were elected after Prof. Fisher had been elected President of the larger committee: President Eliot of Harvard, Felix Adler, Dr. William H. Welch, Dr. Lyman Abbott, President Angell of the University of Michigan, Jane Addams, Andrew Carnegie, Archbishop Ireland, Judge Lindsay of the Juvenile Court of Denver, and John D. Long, ex-Secretary of the Navy.

German Hospital and Dispensary Prizes.—On the occasion of the fiftieth anniversary of the German Dispensary Dr. Charles H. Jaeger announced the foundation of three yearly prizes to be known as the Marie Jaeger Memorial Prizes. The prizes are to be awarded for medical essays and consist of a first prize of $100, a second prize of $75, and a third prize of $50. The competition is to be open to members and collaborators of the German Dispensary and to members of the house staff of the hospital. The prizes are to be awarded on December 31 of each year. The essays are to be based on cases occurring in the service of the hospital and dispensary, and preference will be given to those embodying original thought or work. The right is reserved to withhold any or all prizes if the quality of the essays submitted is not sufficiently high or the numbers not sufficiently large. A committee is to be appointed to pass on the essays.

Plan for Hospital for Tuberculosis in Chicago.—A plan to establish in Chicago or its environs a free hospital for the treatment of tuberculosis patients is being considered. Dr. Wm. A. Evans, the new Commissioner of Health, will be one of the principal promoters of the project. It has been the object of a number of Chicago physicians to have a tuberculosis hospital, supported by the city, and Dr. Evans is ambitious to give this city an institution for the proper treatment of this disease.

In Honor of Lord Lister's eightieth birthday the *Münchener medizinische Wochenschrift* in its issue of April 2 prints a translation into German of Lister's classical series of articles containing the rudiments of the antiseptic theory as applied to the treatment of wounds, which began to appear in the *Lancet* of March 16, 1867.

Objection to Staten Island Tuberculosis Hospital.—The representatives of certain taxpayers have appeared before the Supreme Court at Richmond, Staten Island, and asked to have made permanent a temporary injunction obtained in December restraining Comptroller Metz and Charities Commissioner Hebberd from building a tuberculosis hospital on Staten Island. The Board of Estimate and Apportionment passed a resolution in favor of such an institution on the island, and it was approved by the Board of Aldermen. It is proposed to put up the building at Four Corners, near West Brighton, at a cost of about $50,000.

The Tuberculosis Question in Richmond.—The City of Richmond, Va., in response to an appeal from its health officer for funds to be used in fighting tuberculosis, decided to dispense with summer music in the parks, and turned over to the health department the sum of $2,800 usually expended for the former purpose.

The American Mosquito Extermination Society held its fourth annual meeting in this city last week, and Dr. O. L. Howard of Washington and Dr. E. Porter Felt, the New York State Entomologist, among others, described what had already been done in the way of checking the multiplication of the mosquitos in certain parts of this and other countries. It was shown that the complete extermination of the insects was simply one of funds and an enlightened public spirit.

A Heraldic Recompense.—An uncommon honor has been granted by King Edward to Sir Frederick Treves and Sir Francis Laking in recognition of their services during his attack of appendicitis in 1902. The King by royal warrant has granted them "honorable augmentation" to their arms, consisting in the addition to their shields of one of the lions from the royal arms. James I.'s apothecary, Gideon Delaune, received a similar reward for services rendered to his sovereign.

A Society of Eternal Youth.—The newspapers state that a society which already has several hundred members has been formed in Iowa for the purpose of prolonging life and preventing illness. All members upon joining must sign a pledge that they will continually assert that it is nothing but custom and habit of thought that causes people to be sick, grow old, or die. Any member who is reported sick from any disease, and is confined to his bed for a continuous period of three days is to be fined for the first offence, for the second offence he is to be suspended from membership, and for the third offence expulsion from the society is the penalty.

Legislation Against Tobacco.—The State Assembly of Wisconsin has adopted a bill prohibiting the sale of tobacco in any form to persons under sixteen years of age. The bill also prohibits such minors from using tobacco. The Illinois House has passed a bill prohibiting the selling of cigarettes or cigarette papers in that State.

Smoke Nuisance Award.—The Court of Appeals has just affirmed a verdict for $4,000 damages recovered by a plaintiff against a large corporation for damages arising out of the defendant's violation of the smoke nuisance law.

New Property for Lincoln Hospital.—The entire block bounded by 141st street, 142d street, the Southern Boulevard, and Wales avenue has been bought for a sum said to be in the neighborhood of $100,000, by the trustees of the Lincoln Hospital. The property is to be given to the institution, Morris K. Jesup and Miss Emily Booth being the principal donors. The Lincoln Hospital was established where it now stands, on the block bounded by 141st and 142d streets, Concord avenue, and the Southern Boulevard, about ten years ago. The increasing population of the Bronx has overtaxed the present building, and it is proposed to build additional wards on the property just bought. A convalescent ward will also be established.

Ambulance Accident.—While a Roosevelt Hospital ambulance was conveying a woman ill with pneumonia and her ten months baby to Bellevue Hospital last Sunday, the ambulance was run into by a crosstown car at the intersection of Thirty-fourth street and Broadway. The ambulance was badly smashed and the patients were severely jolted about, but through the surgeon's quickness of action were kept from serious injury. They finished their trip to the hospital in a New York Hospital ambulance.

Coney Island Hospital Opened.—The formal opening of the Coney Island Reception Hospital was held last week in the presence of a number of city officials. The hospital was started in 1901 for emergency cases, and has been kept open only during the summer months. It will now be operated the year around until the completion of a new and larger structure, now contemplated, which will be located in Surf avenue, near Fifth street. The hospital has eight beds and additional accommodations for emergency demands.

The Pathological Society of Philadelphia, which is one of the oldest, if not the oldest society, of its kind on this continent, will celebrate its semicentennial in May, 1907. The celebration will extend over two days, Friday, May 10, and Saturday,

May 11. On the first day addresses will be delivered by Dr. Frederick G. Novy of Ann Arbor, Michigan, on "The Rôle of Protozoa in Pathology"; by Dr. Simon Flexner, of the Rockefeller Institute, New York, on "The Newer Pathology"; and by Dr. A. E. Taylor, of the University of California, on "The Dynamic Point of View in Pathology." In the afternoon, at four o'clock, a commemorative meeting will be held in the Pennsylvania Hospital, where the first meetings of the society, in 1857, took place. At this meeting, Dr. William Osler, Regius Professor of Medicine, Oxford University, will deliver an address on "Pathology and Practice." At a dinner in the evening prominent men from all parts of the country will respond to toasts. An exhibition meeting of interest to pathologists, clinicians, and surgeons will be held on Saturday, May 11.

Plague in India.—According to despatches from Simla there were 75,000 deaths from the plague in India during the week ended April 13. Seventy thousand of these occurred in Bengal, the United Provinces, and the Punjab. Since the disease began in the Punjab in October, 1897, nearly 1,500,000 deaths have occurred.

Professor Politzer's Retirement.—At the end of the summer term of 1907 Hofrat Professor A. Politzer will have arrived at the age limit beyond which, according to the laws of Austria, he may not retain his chair at the University of Vienna, and will, therefore, resign his position, as well as the directorship of the Vienna Ear Clinic. At the same time the lectures which he has delivered throughout forty-six years will cease to be given. A committee has accordingly been formed for the purpose of organizing a suitable testimonial of the world-wide esteem in which this master of otology is held, to be presented on the occasion of his relinquishing the chair he has occupied so long. It was originally intended to hold a formal public celebration to which representatives of the world's otological societies should be invited, but Professor Politzer on becoming aware of these preparations requested that owing to several recent deaths in his immediate family no public demonstration take place. It has been decided, therefore, to issue a medal bearing a portrait of the master. A copy of this in gold is to be presented to Prof. Politzer on the designated day; other copies, some in silver and some in bronze, will also be struck off to serve as souvenirs of the eminent scientist. These will be put at the disposition of those who wish to subscribe to the celebration. Together with the medal an address, containing the names of all the subscribers, will be presented to Prof. Politzer. All communications should have plainly written the names, titles, and the exact address of the sender and should be accompanied by a remittance of $5 for the silver or $2.50 for the bronze medal and be sent to the treasurer, Dr. D. Kaufmann, Vienna, VI., Mariahilferstrasse 37. Any surplus that there may be, after the necessary expenses have been met, will be put at Prof. Politzer's disposal as a fund to further some scientific object. Subscriptions must be in the hands of the treasurer before May 15, 1907.

Appointment of Dr. Evans.—Dr. Wm. A. Evans has been appointed Health Commissioner of the City of Chicago by Mayor Busse.

Jefferson Medical College.—Dr. John H. Gibbon has been elected professor of surgery and of clinical surgery in succession to Dr. John H. Brinton, deceased.

Association of American Medical Colleges.—The next meeting of this association will be held in Washington, at the Hotel Raleigh, Monday, May 6, beginning at 10 A.M. The program will consist of two parts, one of which is educational and open to visitors. The second part of the program relates to the business of the association, and will be taken up in executive session at the conclusion of the first part. The president is Dr. George M. Kober of Washington and the secretary is Dr. Fred. C. Zapffe, 1764 Lexington street, Chicago.

Association of American Physicians.—The twenty-second annual meeting of the Association of American Physicians will be held in Washington on May 7, 8, and 9, 1907, under the presidency of Dr. Francis P. Kinnicutt. An amendment to the constitution and by-laws will come up for action, providing that not more than thirty papers shall be presented at any meeting of the association, these to be selected by the Council from among the titles handed in by March 1 of the year in which the meeting occurs. On May 7 there is to be a reception by President Roosevelt at the White House to members of the association and ladies accompanying them. The secretary is Dr. Henry Hun, 149 Washington avenue, Albany.

American Gastro-Enterological Association.—The tenth annual meeting of this organization will be held in Atlantic City, June 3 and 4, 1907, under the presidency of Dr. H. W. Bettman of Cincinnati. The secretary is Dr. Chas. D. Aaron of Detroit.

National Association for the Study and Prevention of Tuberculosis.—The third annual meeting of this association is to be held in Washington May 6 to 8, 1907. The preliminary program provides for a very active series of sessions, and in addition to the general meeting there will be five sections as follows: Sociological section, clinical and climatological section, pathological and bacteriological section, section of tuberculosis in children, and surgical section. The meeting will be held under the presidency of Dr. Hermann M. Biggs. The secretary is Dr. Henry Barton Jacobs of Baltimore, and the executive secretary is Dr. Livingston Farrand of this city. The chairman of the local committee of arrangements is Dr. George M. Kober of Washington. President Roosevelt will receive the members of the association, ladies, guests, and visitors at the White House on the afternoon of May 7.

American Academy of Medicine.—At the annual meeting of this organization to be held in Atlantic City June 1 to 3, 1907, the president, Dr. Casey A. Wood of Chicago, will take as the subject of his address "The Medical Career and the Intellectual Life." One symposium will be devoted to considering the relation of the medical profession to the housing of the people, and another to the relation of the medical profession to legislation.

Mississippi State Medical Association.—At the meeting of this organization held in Gulfport on April 12 officers were elected as follows: *President*, Dr. R. S. Curry, Columbus; *Vice-Presidents*, Dr. H. R. Shanck, Jackson; Dr. T. F. Elkin, Tupelo; Dr. R. D. Sessions, Natchez; *Secretary*, Dr. E. F. Howard, Vicksburg; *State Board of Health*, Dr. L. D. Dickerson, McComb City; Dr. G. S. Bryan, Amory; Dr. E. A. Cheek, Arcala; Dr. John Darrington, Yazoo City; Dr. D. J. Williams, Ellisville. The next meeting will be held in Natchez in April, 1908.

Central Oklahoma Medical Association.—At

the annual meeting of this organization, held in Guthrie on April 10, officers as follows were elected for the ensuing year: *President*, Dr. H. Coulter Todd, Oklahoma City; *First Vice-President*, Dr. J. H. Barnes, Helena; *Second Vice-President*, Dr. N. Rector, Henessey; *Secretary* and *Treasurer*, Dr. Geo. A. Boyle, Enid.

Otoe County (Neb.) Medical Association.—At its annual meeting, held in Nebraska City on April 6, this society elected the following as officers: *President*, Dr. Claude Watson; *Vice-President*, Dr. M. M. MacVean-Edmonds; *Secretary* and *Treasurer*, Dr. C. P. Crudup.

Washington County (Ill.) Medical Society.—At the annual meeting, held in Nashville on April 12, this society elected the following officers: *President*, Dr. W. D. Carter of Nashville; *Vice-President*, Dr. H. W. Wolf of DuBois; *Treasurer*, Dr. S. P. Schroeder of Nashville; *Secretary*, Dr. D. S. Neer of Beaucoup.

Hampden (Mass.) Medical Society.—At the annual meeting held in Springfield on April 16 officers for this society were elected as follows: *President*, Dr. C. A. Allen of Holyoke; *Vice-President*, Dr. George S. Woods of Springfield; *Secretary* and *Treasurer*, Dr. T. S. Bacon of Springfield.

Fairfield County (Conn.) Medical Society.—Officers as follows were elected at the one hundred and fifteenth annual meeting of this society, held in Bridgeport on April 9: *President*, Dr. Edwards M. Smith of Bridgeport; *Vice-President*, Dr. David C. Brown of Danbury; *Treasurer*, Dr. J. D. Gold of Bridgeport; *Secretary*, Dr. Frank W. Stevens of Bridgeport.

Henry County (Ia.) Medical Society.—The annual election of officers for this society, held at the meeting in Mt. Pleasant on April 9, resulted as follows: *President*, Dr. F. T. Stevens of Mt. Pleasant; *Vice-President*, Dr. Pittman of Salem; *Secretary* and *Treasurer*, Dr. J. N. Day of Mt. Pleasant.

German Medical Congress.—The seventy-ninth Congress of German Men of Science and Physicians will be held at Dresden this year from September 15 to 21.

Golden Belt (Kan.) Medical Society.—At the meeting of this organization held in Abilene on April 4, officers were elected as follows: *President*, Dr. Howard N. Moses of Salina; *Secretary*, Dr. William S. Yates of Junction City; *Treasurer*, Dr. John D. Riddell of Enterprise.

Middlesex County (Conn.) Medical Society.—The following officers were elected at the one hundred and fifteenth annual meeting of this society, held in Middletown: *President*, Dr. Charles B. Young of Middletown; *Vice-President*, Dr. James Murphy; *Clerk*, Dr. John E. Loveland; *Censors*, Dr. John E. Bailey, Dr. C. H. Hubbard, and Dr. M. C. Hazen; *County Reporter*, Dr. John H. Mountain.

Massachusetts Homeopathic Society.—At the sixty-seventh annual meeting of this society, held in Boston on April 10, officers were elected as follows: *President*, Dr. John P. Rand, Worcester; *Vice-Presidents*, Dr. Fred W. Halsey, Boston, and Dr. Nathaniel R. Perkins, Dorchester; *Corresponding Secretary*, Dr. Charles T. Howard, Boston; *Recording Secretary*, Dr. Thomas E. Chandler, Boston; *Treasurer*, Dr. Thomas M. Strong, Boston. It was decided to hold the next meeting in Worcester.

Cass County (Ill.) Medical Association.—At the annual meeting of this society held in Virginia on April 12 officers for the coming year were elected as follows: *President*, Dr. C. E. Soule, Beardstown; *Vice-President*, Dr. J. W. Houston, Virginia; *Secretary*, Dr. J. A. McGee, Virginia; *Treasurer*, Dr. C. M. Hubbard, Virginia.

The Late Dr. George B. Fowler.—At a meeting of the Medical Association of the Greater City of New York, held April 15, 1907, the following report was presented and adopted. *Whereas*, It has pleased the Almighty to call from his earthly labors George Bingham Fowler; *Resolved*, That the following minute be entered upon the records of the Medical Association of the Greater City of New York: Dr. Fowler was born in Alabama in 1847 and died in the Borough of Manhattan, New York City, on March 6, 1907. He was graduated from the College of Physicians and Surgeons, New York, in 1871. He served as assistant in the Department of Physiology in that school under the late Professor John C. Dalton, and for many years, in one or another capacity, he was connected with the Metropolitan Board of Health. He was associate editor of the *American Journal of Obstetrics*, contributing many articles on the diseases of children. Under Mayor Strong he was Commissioner of Health of the City of New York. He served for years as Attending Physician to the New York Infant Asylum and the Bellevue Hospital. In the latter hospital he was instrumental in founding the Training School for Male Nurses. He was Professor of Clinical Medicine in the New York Polyclinic, and later at the Post-Graduate Medical School, and he was an active member of many of the local and national societies. He was twice elected president of the Medical Society of the County of New York. Amidst all these activities his genial temperament prevailed to form warm friendships and deep loyalty on the part of a wide circle of patients. He carried sunshine into the sick-room and imparted courage to the ailing. Here his presence was indeed a benediction. In civil life he set an example of fidelity to duty which might well be emulated by others. (Signed) Egbert H. Grandin, William H. Porter, Leonard Weber, Committee.

Obituary Notes.—Dr. R. F. Michell of Montgomery, Ala., died on April 19 at the age of eighty years. He was born in Charleston, S. C., and served as surgeon in the Confederate army. He was the author of several books on medical subjects.

Dr. William M. Taylor of Talladega, Ala., died on April 7 at the age of eighty-one years. Dr. Taylor was a native of Sumner County, Tenn., but in 1839 his parents removed to Talladega and he continued to reside there for the rest of his life. He served as surgeon in the Seventh Alabama regiment, and as chief surgeon of Wilcox's brigade. Dr. Taylor was largely instrumental in the foundation of the Mobile Medical College, and was one of the incorporators of the Alabama School for the Deaf. He was a member of the Alabama legislature in 1876 and 1880.

Dr. W. Frank Morrison of Providence, R. I., died suddenly on April 9, at the age of forty-nine years. He was born in Millville, Mass., and was graduated from Harvard Medical School in the class of 1882. Shortly afterward he began practice in Providence, where he had resided ever since.

Dr. George F. Gale of Brattleboro, Vt., died on April 14 at the age of seventy-nine years. He was born in Petersham, Mass., and was graduated from the Berkshire Medical College in Pittsfield, Mass.,

in 1855. He practised for a time in Cummington and Deerfield, and for a year was in charge of a smallpox hospital in San Francisco. He was surgeon of the Eighth Vermont regiment in 1861 and 1862.

Dr. William R. Campbell of Niagara Falls died on April 9 after a lingering illness. He was born in New York City in 1854 and received his medical degree from Buffalo University in 1880. Immediately afterward he began to practise in Niagara Falls. Dr. Campbell was a curator of Buffalo University and president of its alumni association; he was also president of the Niagara Falls Academy of Medicine, and was a surgeon in the New York State National Guard.

Dr. Stanley A. De Paul of Carlton, Mich., died on April 7 at the age of forty-eight years. He was a graduate of the Detroit College of Medicine, and practised in Carlton for over twenty years.

Dr. J. S. Korn of Texarkana, Ark., died suddenly on April 4 at the age of fifty years. He was president of the Howard County Medical Society, and had practised for many years in Southwestern Arkansas.

Dr. J. C. Kilgore of Monmouth, Ill., died on April 9 of septicemia, resulting from an infection contracted while performing an autopsy. He was born in Holmes County, Ohio, in 1840, and served three years in the Civil War in the Sixteenth Ohio Infantry. He was graduated from Rush Medical College in Chicago in 1869.

Dr. Isaac Lechtman of St. Joseph, Mo., died on April 11 at an advanced age. He was born in Russia and received his degree from the military medical school at St. Petersburg. After serving for some time as army surgeon, in 1871 he came to this country and settled in St. Joseph. He was president of the Missouri Medical Society in 1803.

Dr. E. A. Woodward of Madison, Wis., died on April 8 of grip, at the age of ninety years. He was born in Litchfield, Conn., and received his degree from the Berkshire Medical College in 1842. He practised in Connecticut until 1855, in which year he removed to Madison. He served as surgeon in the Civil War.

Dr. James D. Pendleton of Bedford City, Va., died on April 10 at the age of eighty-seven years. He was the son of Dr. Micajah Pendleton, who practised for fifty years in Buchanan, Va.

Dr. William W. Genge of St. Johnsbury, Vt., died on April 10 of pneumonia at the age of thirty-nine years. He was born in Canada, and in 1891 began practice in Hyde Park. Three years ago he removed to St. Johnsbury.

Dr. W. H. Jopes of Greenfield, Mo., died on April 9 at the age of seventy-three years. He was born in Gallatin, Tenn., and had practised in Greenfield since 1855.

Dr. Austin S. Tinsley of Augusta, Ga., died on April 16 after an illness of two weeks.

Dr. Alfred J. Yost, Mayor of Allentown, Pa., died on April 16 of pulmonary tuberculosis, at the age of thirty-seven years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1803. In 1805 he was elected Coroner of Lehigh County, and he was re-elected in 1893. He was elected Mayor of Allentown in 1905.

Dr. Wm. M. Kern died at Philadelphia on April 17, at the age of eighty-seven years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1847.

Obituary.

THOMAS HENRY WAKLEY, F.R.C.S.,

LONDON.

With Thos. H. Wakley, who died on April 5, passes away the second generation of editors of the *Lancet* in the same family, for he was the eldest son of the founder of this important medical journal. On the death of his father in 1862 the two sons came into the possession of the *Lancet*. The younger son, James, took the more active part in the conduct of the journal, devoting himself entirely to it, but Thomas contributed as joint editor though he kept on his surgical practice for some years. His brother James died in 1886 and from that time Thomas became senior editor. His son, who has been for several years joint editor, survives him, so the third generation of Wakleys continues to control the *Lancet*. The late Thomas H. Wakley was an alumnus of University College and also studied in Paris. He took his M.R.C.S. in 1845 and the fellowship four years later, having been elected assistant surgeon to the Royal Free Hospital, which he continued to serve as surgeon and consulting surgeon and as lecturer on surgery. He took much interest in anesthesia and contributed to his paper a record of one hundred experiments on animals with chloroform and ether, and other surgical papers during the fifties. A still earlier contribution was on the "entire removal of the os calcis and astragalus with the malleolar processes of the tibia and fibula." The urethral dilator which he designed while in practice will be known to specialists in that department. He contributed to Cooper's Surgical Dictionary, but practically all his writing was in the *Lancet*. The Hospital Sunday Fund owed much to the unwavering support of the two brothers, who were largely concerned in founding it. More recently Mr. Wakley and his son, as joint proprietors, founded the Lancet Relief Fund to help medical men overtaken by acute distress, the whole of the money being provided by them. Other agencies for the benefit of the profession always enlisted the sympathy and help of Mr. Wakley.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LISTER'S BIRTHDAY—TUBERCULOSIS—PYORRHŒA ALVEOLARIS—GIANT GROWTH OF FEET—ENLARGED CLAVICLE AND JAW—OSTEOARTHROPATHY—OPERATIONS IN ASCITES—TEMPERATURE CHANGES—HYGIENE OF CHILDHOOD—OBITUARY.

London, April 5, 1907.

This is Lord Lister's eightieth birthday. As you are keeping it as well as we and the rest of the civilized world, I will confine my notice of the event to reporting that the arrangements made for its celebration here have been duly carried out. Yesterday the meeting convened by the Lister Institute was held at the Royal College of Surgeons, the president, Mr. Morris, occupying the chair. It was indeed a notable gathering, representing medicine and surgery, scientific and practical. As was intended members of the editorial committee were appointed, the republication of all Lord Lister's writings being the principal part of the celebration. A deputation was also appointed to wait upon Lord Lister to-day with the best wishes of the meeting. This, too, has been done, and we are all pleased to think that the venerable surgeon has expressed himself as gratified with the manner in which the esteem of his profession has been shown.

The appendix to the second interim report of the Tuberculosis Commission contains the comparative histological and bacteriological investigations made for the commission by Dr. Eastwood. The morbid processes set up experimentally by *Bacilli tuberculosis* of bovine and hu-

man origin and their cultural characters are compared. The general result is to emphasize the underlying unity of the morbid processes with every variety of *Bacilli tuberculosis*. Differences in severity were noted, due in part to the dose and virulence of the bacilli used and partly to the vary susceptibility of the animals inoculated. But even when animals of high resistance, as calves, are inoculated with bacilli of low virulence, lesions are produced in situations remote from the point of inoculation, such as those in bovines by bacilli of high virulence when the experimental conditions favor resistance. In highly susceptible animals, as monkeys and anthropoid apes, lesions are caused not only more chronic, but more acute by these less virulent bacilli. These and other considerations show the underlying unity of the morbid processes induced and the general resemblance in the characters of their growths on artificial media. But though Dr. Eastwood insists on the stability of the growth as a rule, he says at the same time there is interesting and very important evidence that the cultural and pathogenic characters of some of the viruses are not absolutely fixed. Instances were recorded of both diminution and increase of virulence, also of cultural luxuriance. These examples illustrate the variability and capacity for modification of the *Bacillus tuberculosis*, and from the evidence of the pathogenic and cultural instability Dr. Eastwood finds reason for assuming that during the course of a long residence in the human body a bacillus, originally of bovine origin, might undergo a modification of some of the characteristics which are met with in bacilli freshly isolated from the bovine, and that owing to this modification it might be indistinguishable from bacilli derived from cares of human disease.

The College of Surgeons did an excellent thing in appointing a dental surgeon to one of the lectureships, and no better selection could have been made than that of Mr. Kenneth Goadby. The result was a most suggestive contribution to our knowledge of a very troublesome affection which will interest every observant practitioner. Mr. Goadby is one of the foremost scientific dental surgeons, has devoted long years to bacteriological investigations in his specialty, and wisely based his lecture on these researches, taking for his subject pyorrhœa alveolaris. From careful examination of ninety cases, besides others of ulcerative stomatitis and allied conditions, he showed that a great many varieties of organisms are to be found, though there is not one so constant in pyorrhœa alveolaris as to appear as its cause. In fact, the bacteria found in these cases closely resemble those met with in gingivitis and ulcerative stomatitis. He described the bacteriological finds in thirty-six cases accompanied by general symptoms. In some he isolated a bacillus, which had the power of fermenting lactose, and referred to the observation of McConkey, who traced such an organism to a fecal origin. It may be that these bacteria are concerned in the production of the disease, but other organisms, including both varieties of staphylococci, are often found in milk. The suggestion, therefore, that contaminated milk may carry infective organisms along the alveolar margin and give rise to the general symptoms observed deserves consideration, or at any rate further investigation, especially as pyorrhœa alveolaris not seldom follows infectious diseases during which a milk diet has been employed. Mr. Goadby has successfully treated the disease by the injection of vaccines of organisms on the lines laid down by Sir A. E. Wright. He is unable to endorse the common opinion that extraction of the affected teeth arrests the disease, having seen an increase of symptoms after removal of a number of teeth, and this view is enforced by records of the opsonic index. He advised therefore, that only two or three teeth should be extracted at any one sitting.

Among interesting exhibits at Clinical Society the first place is due to one of congenital hypertrophy or giant growth of the feet, shown by the president, Mr. Clutton, who propose to amputate. The patient is a girl, now seventeen; her deformity was noticed at birth and increased slowly up to her fourteenth year. For the last three years the growth has been more rapid. The feet are now enormous, fairly equal in size. The whole left extremity is enlarged and nearly three inches longer than its fellow. Mr. Clutton proposes a Chopart operation for the shorter limb and a Syme for the longer one.

A case of enlargement of the clavicle and left side of lower jaw was shown at the same meeting by Br. Betham Robinson. It was in a boy of thirteen, and appeared of a chronic inflammatory nature. The swelling of the clavicle dated from a fall against a wall five months previously, that of the jaw from a toothache. There was also some enlargement of the right side of the thyroid, as to which Mr. Tubby remarked that he had seen such a condition of the clavicle secondary to a thyroid tumor. Mr. Robinson had given iodide with some benefit and he proposed to push it and also give mercury.

A woman of twenty-one, with hypertrophic osteo-arthropathy of the lower extremities, was shown by Drs. B. Shaw and H. Cooper. The patient was cyanosed, there was well-marked clubbing of the fingers, toes, and nose, swelling of both legs, due apparently to bony growths. There was a systolic murmur, but the lungs were free from signs of disease. The patient had always suffered from palpitation and breathlessness. Radioscopy showed both tibiæ and fibulæ to be enlarged, more markedly on the right side. There was uniform thickening of the lower two-thirds of these bones and irregular deposits at the attachment of periosteum to the interosseous membranes. The upper halves of the shafts of both femora showed similar changes, more marked on the right side. The other parts of the femora did not seem to be affected.

An infant of eight weeks was shown as an example of osteogenesis imperfecta, or more probably syphilitic. There had been fractures of thigh and leg bones and several ribs, which had united under mercury. The spleen was large, there was ulceration about the arms, and Dr. Sutherland, who showed the case, considered it most likely syphilitic, though it was suggested that it might be arrested development.

At the Medical Society a paper on the operative treatment of the ascites occurring with cirrhosis of the liver was read by Mr. Laurence Jones, who said the most suitable cases were those which had survived tapping of fluid, which was shown to be of mechanical rather than inflammatory origin. The common object of all operations was to increase the communication between the portal and caval systems, and the omentum was the portal area usually selected, and it was sutured to the abdominal wall outside the peritoneum. Various additional procedures had been suggested, but he did not advocate them. About one-third of the patients died within a month of the operation, another third were definitely improved, their lives being prolonged for some years in comfort. The other third were only slightly improved or not at all. The operation mortality should not exceed ten per cent.

One speaker thought the mortality depended on the case, not on the operation, as to which it ought to be *nil*. Another urged that the possibility of syphilis should always be considered, especially in the younger patients. Another remarked that in a febrile case, if the fever promptly abated under mercury, it was probably syphilitic. Another urged early operation, and yet another that success depended on the selection of the case.

Normal temperature, allowing for the fluctuations established by Ogle, Liebermeister, etc., seems not to be disturbed in its range by moderate changes of conditions in the health of individuals. Dr. Carter has reported to the Liverpool Medical Institute the results of observations made by the cooperation of the night nurses in his hospital. Each nurse towards the end of three months' night duty took her temperature, three-hourly, when not asleep in the day. The charts exhibited proved that the normal depression about 3 A.M., under ordinary conditions of life, also occurred after turning night into day for a period of about three months. The fall would, therefore, appear to be independent of changing conditions so far as these observations go.

Mental Hygiene in Childhood is the subject of an article in the new number of the *Westminster Review*, from the pen of Dr. Robert Jones, whose experience for some years at the Earlswood Asylum was extensive. He speaks of his interest in failures rather than successes as a reason for writing the article which is directed to the importance of a sound physical state in relation to mental development and activity. The child, he says, owes its possibilities to Nature, but the realization of them to nurture—the last term implying all those physical, mental, and normal agencies which surround the child, as well as those domestic, social, and scholastic influences brought to bear upon it. Such questions as maternal nursing and pure milk, he holds, concern both the state and municipality as does the feeding of poor school children, and he speaks of the improvement in the waifs and strays of our great towns on Canadian farmsteads. Speaking of lunacy his asylum experience tells him that the admissions are generally of persons poorly nourished and in impaired health, and as improvement takes place in the bodily state so does a simultaneous mental change occur. As a preventive of insanity he relies greatly upon the successful effects of societies which call attention to the hygiene of the young.

Dr. A. S. Myrtle, J.P. of Harrogate, died on the 29th ult., in his eighty-second year. He was M.D. Edin., 1844. He had been long identified with Harrogate and was a great authority on its mineral waters and the diseases in which they are most useful on which he had written prac-

tical brochures. He was consulting physician to the hospital, had been president of the County Medical Society, and also to the British Bacteriological and Climatological Society.

The death is also announced of Dr. Parcell of Manchester Square on the 1st inst. in his seventieth year.

Progress of Medical Science.

New York Medical Journal, April 13, 1907.

Atypical Phagocytic Cells in the Circulatory Blood.—M. R. Rowley enumerates the varieties of white cells found in normal or pathological blood as polynuclear leucocytes, lymphocytes, eosinophiles, mast cells, and myelocytes. The author has found cells quite different from those mentioned, in the blood of a patient with tertian malaria, and in three cases of lymphatic leukemia. In size and shape they vary much, but generally they are much larger than any of the usual blood cells. They are sometimes round in shape and sometimes irregular in outline, with protoplasmic processes. Pieces may break off, these resembling blood plates. They may have one or more nuclei which contain a fine reticular network, and in the majority of cells are kidney shaped. In the Wright modification of Leishman stains they resemble the large lymphocyte, the nuclei staining a reddish purple, and the protoplasm various shades of dusky blue. Occasionally reddish spots are scattered in the protoplasm, but in the majority of the cells there are no distinct granulations. The author presents illustrations showing the phagocytic action of these cells. As to their nature, they seem to resemble somewhat one of the elements found in exudates into the serous cavities, in the spleen, the so-called "endothelial cells."

Premature Detachment of the Normally Situated Placenta.—To three cases previously reported W. R. Nicholson adds two more, one recovering and the other dying. The general points in diagnosis are discussed and the author makes the following plea: First, that aberrant pain and unexplained bleeding, even if slight, during pregnancy should always suggest the possibility that placental separation is taking place. Second, that such cases should be watched with the greatest care. Third, that as soon as the provisional diagnosis is moderately certain, an active interference should be practised up to the point of the production of an amount of cervical dilatation sufficient for immediate delivery. Fourth, that in the rare cases in which the rigid unobliterated cervix is encountered, together with severe bleeding, valuable time should not be wasted, but that either a vaginal or a classical cesarean section should be performed according to the predilections and circumstances of the operator.

Milk as a Carrier of Infection.—C. Harrington says that the non-bovine diseases capable of being spread by milk are typhoid fever, dysentery, scarlet fever, diphtheria, and the so-called cholera infantum group of bowel troubles. The most important (excluding the bowel class) is typhoid. The author claims that the purchasing public is the element in the community which can correct the present faults in the question of milk supply in large cities. He says that it is the purchasing public that holds the key to the situation and can apply the remedy for all milk-borne infections; it is the man behind the dollar who can secure insurance against milk sickness by refusing to give any of it for milk as ordinarily produced and sold, and by a willingness to give a little more of it for the right kind. But no, the extra few cents daily appears to be an insurmountable obstacle, even to those who are free even to wastefulness in other ways; and they are content to buy dirt of all kinds, including cow dung and pus, with their milk, secure in the thought that by heating the mixture for a few minutes it is made much safer to drink. It seems unfair to the public and, in a business way, especially unfair to the clean dairyman, that dirty dairies should be permitted to exist; but the public is apathetic and will do nothing, and it appears that the only way to insure reducing milk-borne infection is State and municipal regulation of dairies and distribution.

Journal of the American Medical Association, April 20, 1907.

Protozoa and Disease.—C. W. Stiles discusses certain questions relative to the protozoa as disease factors, especially those at present somewhat disputed. He thinks the differences of opinion are largely justified, considering the difficulty of accurately defining the group. If zoologists can differ as to what are protozoa and what are not, certainly physicians and pathologists, to whom zoology is a side issue, can be excused for differing, and their difference of opinion, based on the imperfect present knowledge of the protozoa, are bound to be the most important factors in ultimately bringing out the truth. He defends the view, announced by him in 1901, that the diseases mechanically transmitted by insects are, with few exceptions, due to parasitic plants, particularly bacteria, and that those dependent on insects or other arthropods for their dissemination and transmission are caused by parasitic animals, particularly by sporozoa and worms. To this second rule he holds no exception has yet been proved. Such diseases as surra, which can be transmitted by inoculation, coition, etc., cannot be said to be biologically dependent on insect carriers, and he holds that this has not yet been proved to be the case with Rocky Mountain spotted fever or African tick fever. The claim made by Novy and Knapp that the parasite of African tick fever and of American spirillosis of chickens are vegetable rather than animal in their nature has more than impressed him, he says, but the possibilities of their transmission are not yet determined and these instances certainly do not disprove his rule. Stiles thinks that from what is known of the incubation period of yellow fever in a man and the life cycle of the microorganism in the mosquito and in man the biologic indications are that the specific cause is a protozoon; but he is in doubt as to whether it will prove to be a sporozoon or a flagellate. It is fortunate, he says, that the non-sexual reproduction of some of the protozoa is limited, as, were it otherwise, untreated malaria, for example, would be necessarily fatal.

Chronic Gastritis.—R. F. Chase remarks that chronic gastritis, understanding by the term a chronic inflammation of the stomach accompanied by pathologic changes, usually a diminution of the acidity with more or less impairment of the rennin and pepsin secretions and an excessive secretion of mucus, is a much less common disorder than is generally supposed. The diagnosis from the subjective symptoms merely, instead of by the well-known tests, is responsible for many incorrect diagnoses in the past. It is a disorder of rather long duration, often many years, more common in males. Ewald says that many patients said to die of old age, really succumb to gastric atrophy. Chase has not found evidence of this and his patients ranged between twenty and fifty years. It is impossible to ascribe it to any single cause, though alcohol has been considered as one of the most important. Chase agrees with Einhorn that loss of weight is not a usual symptom, the patients are often well nourished, appetite may be good, and pain, other than discomfort after meals, may be altogether lacking. Other symptoms that may occur are constipation, flatulence, eructations, etc., but no one symptom or set of symptoms is characteristic. Diagnosis must be based on the objective findings obtained by repeated examinations of the stomach contents and observation of the progress of the case. It seems that a rapid emptying of the stomach contents is rather common, and it is not positively determined whether this is due to hypermotility or to pyloric insufficiency. It is difficult to overcome and if, as some think, it is compensatory, hurrying the food into the intestine where most of the digestion is accomplished, it is better not combated. Chase thinks that most patients can be practically cured by measures to restore the hydrochloric acid secretion, care in diet and douches to free the stomach of the excessive mucus. Starches are better digested in the stomach in this condition than are proteids, and bearing this point in mind and remembering that all thermal, mechanical and chemical irritants are to be avoided, we have, he says, the key to dietetics in this disease. He advises lavage twice a week, using 30 grains each of sodium chlorid and sodium bicarbonate to a pint of water at 100° F. For the purpose of dissolving mucus and increasing the secretion, he uses from 10 to 15 grains of sodium chlorid and sodium bicarbonate in a glass of warm water to be taken about fifteen minutes before meals. Pepsin and hydrochloric acid are not relied on by him as agents to increase the hydrochloric acid secretion. Vacations and out-of-door occupations are important aids.

A Graphic Method in Practical Dietetics.—Irving Fisher proposes a new method of estimating the amount and proportion of proteids, fats and carbohydrates by taking, not units of weight, but units of food value as the starting point. This unit or standard portion is defined as that amount of food which contains 100 calories and a table is constructed which gives the weight of a standard portion of each particular kind of food, and out of the 100 calories contained therein, the number in the form of proteids, fats and carbohydrates. In order to carry out this method food should be served in standard portions or simple multiples of the same. Fisher has prepared a table, computed chiefly from the tables of Atwater and Bryant, and for made dishes from those of Kellogg. The main portion of his paper is devoted to the explanation of the use of this table and of a mechanical diet indicator which is figured and de-

scribed. By the apparatus thus devised the patient can avoid the necessity of having scales at the table, and after a little practice he can regulate his diet without any apparatus by simply exercising his visual memory of the same. The mechanical diet indicator was used for five months in an experiment on nine Yale students in the winter of 1906. No diet was prescribed and the indicator was used only to record the diet which the men themselves chose. It was found that by following Fletcher's rules as to mastication and obedience to appetite the men naturally and gradually reduced their proteids. The effect on their working powers was described in *Science*, November 16, 1906. Its value in pathologic cases has not yet been thoroughly tested, though one physician is reported to have found the apparatus of value in his practice.

Dilating the Gravid Uterus.—E. P. Davis describes the methods that are advisable in dilating the uterus in the later months of gestation for toxemia, placenta prævia and premature separation of the normally situated placenta. In the toxemic cases he does not include those due to the nephritis of pregnancy, but those of acute toxemia of hepatic origin with altered pulse tension, nervous disturbances of toxemia and the evidences of blood disintegration that accompany the condition. In such cases the uterus should be emptied as soon as consistent with safety, and for rapid dilatation he prefers bimanual dilatation with one or more fingers of each hand working synchronously in opposite directions, as most efficient. If unmanageable by the fingers, Bossi's dilator employed to one-half or two-thirds of its full capacity for from thirty to forty-five minutes with anesthesia has proved harmless and efficient. Except in rare cases, full dilatation with the instrument should be avoided. Vaginal Cesarean section is not favored in these cases by Davis, as he has never seen a case where he thought it clearly indicated. In many of these cases the patient is too far gone for anesthesia to be safe, and it should be avoided when pulmonary lesions are present. In placenta prævia the hand is also the best instrument for dilatation. As a rule the elastic bag is too slow in operation in these cases, as it is in toxemia. Bossi's dilator, Davis thinks, is a dangerous instrument to use in the vascular softened cervix of placenta prævia. In premature separation of the normally situated placenta, immediate delivery is called for, and Cesarean section, vaginal or abdominal, is the operation demanded. If this can not be done, multiple incision of the cervix followed by rupture of the membranes and dilatation by the hand as rapidly as is consistent with the integrity of the mother's tissues should be chosen. With the patient in good condition and not much hemorrhage, Bossi's dilators and the hand may be sufficient. The author emphasizes the importance of complicated cases of labor and the necessity of skilled and surgical assistance in such. The general practitioner should not depend on himself alone in these cases any more than he would in appendicitis or strangulated hernia requiring operation, and whenever possible such cases should receive attention in a hospital.

Multiple Aneurysm of the Aorta.—A. A. Eshner gives a very full account of a puzzling case which was first diagnosed as pleuritic, pericardiac effusion being also simulated. There were found on postmortem examination, however, five separate aneurysmal dilatations of the aorta, one of which had caused an erosion and penetration of the trachea. Pulmonary tuberculosis existed and was suspected during life, but the bacilli were not found in the sputum. No trace of pericarditis was found. The patient died suddenly of a hemorrhage which was entirely unexpected. The case is interesting as illustrating the possible difficulties of diagnosis, even by thoroughly competent physicians.

The Southern Maine Climate for Hypertonia Vasorum.—L. F. Bishop advocates the southern Maine coast as a climatic resort for persons suffering from disorders of the circulation due to mental overwork and worry. Such individuals show signs of chronic high tension in the arteries, which is followed later by cardiac dilatation and the well-known train of symptoms in these cases. A chronic vascular nervous overtone has been developed. He has seen such patients make satisfactory progress toward recovery in a single summer's sojourn in this region, which has a climate with an unusual combination of coolness and dryness. The recession of the coast makes the fogs, common elsewhere, infrequent, and the character of the soil is such that it very quickly dries. Excessive heat in summer is almost unknown. The pleasurable qualities of the southern Maine climate in hot weather are, he says, well known, but its advantages for this class of invalids should be better appreciated.

The Lancet, April 6, 1907.

The Pathology of Melanotic Growths in Relation to their Operative Treatment.—W. S. Handley describes the results of some of his work with pigmented growths arising in the skin. From examination of strips of tissue taken from the inguinal region of a cadaver containing a considerable number of melanotic growths the author concludes that (1) from the fairly regular distribution of skin nodules around the embolically invaded right inguinal glands it may be inferred that a process of local centrifugal spread, independent of the direction of the lymph current, took place around these glands as a focus. Examination of a radical strip of the parietal tissues extending from these glands showed (2) that permeation of the lymphatics is the principal agent in this local centrifugal spread, and that it occurs primarily and most extensively in the plane of the deep fascial lymphatic plexus. (3) Invasion of skin and muscle is due to upstream permeation of the lymphatics which carry lymph from these layers to the fascial lymphatic plexus. (4) Owing to the fact that arteries and veins usually run in close contiguity to lymphatic vessels, lymphatic permeation is followed by infiltration of the walls of the veins, and later of arteries, and by intrusion of the growth into the lumen of the blood-vessels. The importance of invasion of the veins with regard to pulmonary and systemic dissemination is obvious. (5) The order in time of these various events is deduced from the orderly sequence of processes seen as the strip of tissues is traced from its distal end towards the mass of glands which formed the local center of infection. (6) Regressive changes, due to inflammation excited by the growth, may occur in melanotic sarcoma.

The Area of "Acute Abdominal Conflux" and the "Incision of Incidence."—Under the former title C. P. Childe refers to an area located by the following rule: The esophageal opening of the stomach is situated behind the seventh costal cartilage, on the left side, about one inch from the sternum. A perpendicular line (a) is dropped from this point to Poupart's ligament. Then a line (b) is drawn from the right anterior superior iliac spine perpendicularly upwards to the lower border of the thorax. The author claims that within the area bordered by these two lines almost every acute abdominal crisis either must occur, or, as a matter of fact, does occur. He therefore terms this area the "area of acute abdominal conflux." It may be divided into upper and lower compartments by a horizontal line at the umbilical level. The incision which will lay bare this area is the vertical one midway between the lines (a) and (b), that is on just about the outer border of the right rectus muscle. This is the "incision of incidence" in an acute abdominal case. The advantages claimed for this incision are: (1) That it directly exposes to sight that part of the abdominal cavity which in a large proportion of cases *must* contain the offending organ, and which in another large proportion of cases does as a matter of fact do so. (2) That therefore in the large majority of cases it will enable the surgeon to deal directly with the offending organ, and without the necessity for any second incision unless this be required for drainage. (3) That for these reasons it makes, in the majority of cases, for the avoidance of delay and difficulty, two essentials of success in these operations, and will therefore give the best aggregate of results. (4) That in the minority of cases, in which it fails to expose the offending organ, the abdomen can be examined by touch just as well through the right semilunar as through the median incision. (5) That in those cases of intestinal obstruction where the patient can bear no more than the establishment of an artificial anus it is close to the seat of election for this operation—the cecum or lower ileum.

Amyl Nitrite in Hemoptysis.—G. A. Grace-Calvert does not think that any of the drugs usually given in pulmonary hemorrhages such as ergot, adrenalin, morphine, calcium chloride, or lactate, are of supreme value, though he admits that some of them may help if there is time for them to act. He places his faith in amyl nitrite. He carries three minim capsules of the remedy with him and breaks one, telling the patient to inhale the vapor quietly and regularly and not to be disturbed at the feeling of fullness in the head. The bleeding usually stops almost at once, though the patient may go on coughing up clotted blood which has been already effused. Later, if the patient is excited or alarmed, and the lungs appear to be irritable, he gives a hypodermic of morphine. The amyl nitrite produces such an immediate fall in the general blood pressure by dilatation of the vessels throughout the body that the pressure at the bleeding point is lowered and there is time for clotting to take place, and the hemoptysis usually ceases almost instantly. Even if the pulmonary vessels are dilated the ill effects are more than counterbalanced by the fall in blood pressure, and experiments seem to prove that it has a direct vasoconstrictor action on the vessels of the pulmonary periphery in spite of a vasodilator

action elsewhere. It may, however, be urged that this constriction of the pulmonary vessels is bad in that it must raise the blood pressure in those vessels, but this seems to be more than counterbalanced by the fall in general pressure, whereas in the case of adrenalin, ergot, etc., there is no corresponding fall in general pressure. Moreover, nitrite of amyl causes no reactionary pulmonary hyperemia (after the anemia), while adrenalin apparently does. Again, nitrite of amyl has a further good point, and that is the fact that it does not interfere with coughing and so does not place any obstacle in the way of the patient getting rid of the effused blood, and hence it considerably lessens the risk of septic trouble later.

British Medical Journal, April 6, 1907.

Coincident Embolism of Cerebral, Mesenteric, and Femoral Arteries.—T. R. Rodger reports the case of a woman of sixty-seven years who was seized with severe abdominal pain and soon began to pass blood by rectum. Four hours later it was noticed that the patient's speech had become indistinct and that there was a hemiplegia affecting the left arm and leg and the left side of the face. The discharge of blood had ceased, the abdominal pain was a little less, and the diminished rigidity rendered distinctly palpable a large tender swelling in the right iliac region. The question arose whether this might be an intussusception with secondary cerebral apoplexy due to straining, but the patient, who was quite conscious, said there had been no straining; the blood had merely trickled from her—indeed, she was uncertain from which passage it came—and examination of the blood showed it to be free from mucus. Moreover, the tumor had not the rounded outline of an intussusception, but was flat and extended more towards the middle line. The heart was rapid and irregular, and no distinct murmur could be detected, but five months previously the patient had been attended for a Pott's fracture, due to a fall, which she could not properly explain, but which seemed to be the result of a fainting turn, and at that time a mitral murmur was found. The diagnosis of embolism was further confirmed when, within a day or two, the right leg—the one unaffected by the hemiplegia—became cold and discolored with a bluish mottling from six inches above the knee downwards. No pain in this limb was complained of, but by this time the patient was semicomatose and could not feel pain. She died on the fifth day from the onset of the abdominal symptoms.

Sprains and their Consequences.—A. F. Shoyer reports the case of a man who fell on the doorstep. His right wrist was painful and there was a slight abrasion on the radial side of the joint. The patient applied lotions and carried the arm in a bandage and sling for two weeks before seeking advice. At that time the wrist joint was found swollen, red and painful. There was a small amount of fluid in it, and on movement there was distinct crepitus on the dorsal surface, which might or might not have been tendinous. A splint was applied, and two days later an *x*-ray photograph was taken, when it was seen that a large triangular piece of bone had been wholly or partly broken away from the dorsal edge of the lower or articular surface of the radius and projected above the dorsal surface of the bone. The splint was kept on for several days and both passive and active movements used every evening. The crepitus soon disappeared, and, movements being without pain, the splint was dispensed with at the end of a week. At the time of reporting the case the author states that, measured with the calipers, the anteroposterior diameter of the right radius at its lower end was about 1-4 inch more than that of the left. Flexion was slightly limited, and there was slight tenderness over the seat of fracture. It was expected, however, that full movement would eventually be secured at the wrist joint.

Iodine Spirit Catgut.—J. S. Riddell commends the use of iodine catgut, employing a solution of one part tincture of iodine to fifteen parts of proof spirits and keeping the catgut immersed eight days before using. He has used this material for ligaturing and suturing in hundreds of operations and strongly advocates it. He finds that it is sterile and antiseptic, loses none of its tensile strength in preparation, is readily and simply prepared, without any undue expense. All that is required is a glass jar, the solution above named, commercial catgut, and glass spools. The following suggestions are given: Ordinary glass tubing about the thickness of the little finger should be cut in lengths of two inches. This is long enough to take one length of Hartmann's catgut in single layer without knotting. The catgut must be tightly wound on the tube, or, what is better, the tube should be rolled into the catgut. The catgut is first fixed, either by tying it through or round the tube, and when wound on is fixed with a slip loop below the last turn. The spools are immersed in the solution and are kept there indefinitely till they are to be used. They must not be used till the eighth day after immersion, and for guidance the date of immersion and the size of the catgut should be noted on a small label on the side of the glass jar. The author finds No. 2 catgut most useful for ordinary purposes, and a larger supply of it should be prepared than of the other sizes. If many spools are immersed in one jar and are not used for some weeks after immersion, it is well to add fresh iodine spirit solution at intervals of two to three weeks, so that one may be certain that there is always an excess of iodine bathing the catgut. Finally the catgut is absorbed completely, but only after it has subserved its purpose.

Hughling Jackson's Views of the Functions of the Cerebellum.—V. Horsley reviews the opinions of Hughlings Jackson with reference to cerebellar functions as illustrated by recent research, and gives a brief résumé of the various steps by which we have come to our present knowledge. He contends that all research, both ancient and modern, confirms the view that the cerebellar cortex is the first chief station of representation of the afferent basis of all the skeletal muscles. He notes that in determining cerebellar effects due allowance must be made for accompanying influence of the cerebrum and of the spine. The cortex cerebelli and the nuclei cerebelli must be considered as two distinct organs. Naturally nothing particularly new is brought forward in such a paper as this, but it serves as an interesting commentary on the gradual and logical development of the views of the distinguished English neurologist.

Berliner klinische Wochenschrift, April 1, 1907.

Injections of Oxygen into the Knee-Joint.—Rauenbusch employed the injection of chemically pure oxygen into the knee-joint for the purpose of obtaining a better *x*-ray picture, as recommended by Werndorf and Robinson a few years ago. He was surprised to find that patients suffering from chronic joint diseases requested a repetition of this procedure, as it brought them so much relief from their pain. The experiments were continued and a number of cases of chronic arthritis and arthritis treated by this means with very favorable results. The gas was injected through a small canula under strict aseptic precautions, directly into the cavity of the joint. The intervals at which this was done varied from one to three weeks. In the presence of a synovial tuberculosis, the method was also attended with good results. The treatment is entirely empirical and the author is not prepared to state whether its effects have any permanent value, but recommends its use in selected cases as a means of alleviating the distressing symptoms.

A Contribution to the Treatment of Hay Fever.—Heymann publishes his experiences with the administration of thyroid extract in this disease. He examined a large number of cases and found that these patients are no more apt to be afflicted with nasal deformities than a corresponding number of others who are free from the attacks. He did find, however, that if the obstructions in the nares were removed a marked improvement always occurred. The best results with drugs were noted with the administration of thyroid extract. He gave this in tablet form, one to three daily, each containing 0.3 gm. of thyroid substance. The improvement in twenty-one cases was very favorable, and although no conclusions are possible as to the etiology of the disease the writer thinks that it is probably dependent upon a nervous diathesis in the domain of the sympathetic nerves. In a considerable number of the patients who were under treatment for the disease he found an enlargement of the thyroid gland, although not of sufficient extent to demand treatment for itself.

Congenital Stricture of the Urethra.—Posner calls attention to the possibility of this occurrence, although from the general prevalence of gonorrhea one is led to attribute almost every case to this source. It is possible that many cases of incontinence in children are due to this cause, where the lesion may be situated not only in the anterior portion of the urethra, but also at the junction between the membranous and bulbous portions. Posner reports a case of urinary retention in a boy eleven years old, which disclosed on passage of the catheter an obstruction in the region of the bulbous portion. The boy had been afflicted with enuresis and also occasional attacks of hematuria. Improvement followed gradual dilatation with elastic catheters.

Münchener medizinische Wochenschrift, March 12 and 26, 1907.

The Avoidance of Perineal Lacerations During Labor.—Toff discusses a method for preventing this accident which is very easily carried out. It depends on

keeping the head flexed as much as possible until the greater part of the occiput is delivered before allowing extension to take place. The less the occiput is permitted to come out under the symphysis the greater the sagital diameter of the child's skull which must come through the vulva. The delivery, as advocated by the author, necessitates the lateral position on the part of the patient. The hand of the attendant is placed on the occiput as soon as this appears, and then the latter is pressed down and pulled out both during and between the pains. By this means flexion is increased, and when the neck is engaged under the arch, then extension may be permitted to take place. By this procedure the writer claims to have saved lacerations in many cases where rigidity of the soft parts and a narrow vulvar outlet would have resulted in a tear.

The Alexander-Adams Operation.—Spaeth calls attention to the fact that in Germany this operative procedure is not appreciated as fully as it should be, notwithstanding its many advantages. It is applicable in cases where a more extended operation is impracticable or unnecessary, as in a virgin where a simple retroflexion without any descent may serve as the basis for a very severe reflex neurosis. It is also applicable in sterility and numerous instances have been recorded of its successful application in such cases. The writer reports a series of fifty cases in which a modified Alexander-Adams operation was done. Thirty of these were accessible for subsequent observation and in all the uterus was in a normal position. Pregnancy had occurred in ten of these women and in four instances it had taken place twice. In only four cases, however, did the pregnancy continue to term, and although this would lead one to attribute the abortions to the operation the author is of the opinion that the accident was due rather to the presence of an endometritis and most of the patients had already aborted at different occasions before the operation. The fact that only one-third of the patients became pregnant at all may be ascribed to the age at which the operation was undertaken. The labors were all normal, without any particular pains in the groins. The round ligaments, when doing the operation, should be shortened about 8-10 cm., and the writer thinks that many of the failures are due to excessive shortening.

Ocular Paralysis After Lumbar Anesthesia.—Ach reports four cases of abducens paralysis occurring in a series of 400 patients where lumbar anesthesia was employed. In three of the patients there was a unilateral and in the other a bilateral paralysis. This appeared on the fourth to the eleventh day after the operation and lasted anywhere from eight days to three weeks. In all these cases there were present severe headaches, pains in the back, and restlessness, and the anesthetic effect was either very brief or absent altogether. A comparatively small number of similar cases have now been reported by other authors, and from a study of the subject Ach has formulated a theory for the production of this paralysis of the abducens muscles. He believes that the latter depends on the direct action of the toxic material on the nerve rather than on its nucleus in the fourth ventricle. The phenomenon is similar to the paralysis of respiration seen in other cases, where the condition is also due to a direct action on the phrenic nerve rather than on the respiratory center in the medulla. In order to avoid the possibility of this complication, the writer advises the use of the most harmless preparations for the injections. The anesthetic should be used in the smallest possible doses and in a weak solution. Absolute rest on the back is essential, with the trunk raised.

Healing of a Carcinoma by Sunlight.—Widmer refers to the good results obtained in chronic ulcerative processes by exposure to the direct rays of the sun, and details a remarkable cure observed in a woman of eighty-one years who presented a circumscribed epithelioma of the back of the hand. Operative treatment being refused, the lesion was exposed to the sunlight for several hours daily, and after a period of three months the ulcerated area was completely healed, and remained so. The writer found that reflected light apparently increased the efficacy of the direct rays for the purpose indicated.

Deutsche medizinische Wochenschrift, March 21 and 28, 1907.

The Intravenous Administration of Strophanthin.—Starck places the three requirements of an ideal cardiac stimulant as follows: a selective action on the heart without the production of harmful after-effects on any other organs, ease and certainty of dosage, and lastly a rapid effect. Digitalis has usually been accepted as the standard drug for the treatment of cardiac condition, but it cannot be said to completely fulfill all of the requirements. Endeavors have repeatedly been made to overcome its disadvantages by the introduction of preparations of its various active principles, which could be used subcutaneously. It was found, however, that such preparations were not readily soluble, and caused a great deal of pain at the site of injection. When a more soluble preparation of digitalis was finally obtained, the intravenous injection was proposed and carried out with good results. Strophanthin was similarly employed, and with equally good, if not better results. Starck reports seven cases of acute and chronic cardiac disturbances, all of a severe character. The only bad result was in a case of advanced sepsis, which was practically hopeless at the start. The dose varied from 0.005 to 1.25 gm., advancing with caution from the smaller to the larger amount. There were no evidences of any after-effects, nor was any cumulative action noted. A well marked sedative action was absorbed after the injections, which relieved the patients greatly. Starck thinks that this sedative action is manifested on the central nervous system. The effect on the pulse seems almost immediate, and the dyspnea, if present, is relieved. The strophanthin injections may be recommended as the most efficient form of treatment for the purposes indicated.

Intermittent Articular Hydrops.—Kamp calls attention to this peculiar condition for which no remedy has apparently been found. The term is applied to a recurrent swelling which affects more particularly the knee joints, and is quite rare. In Kamp's case it was present in an elderly lady in whom the swelling came on at regular intervals of from five to nine days. The acute swelling came on within twenty-four to thirty-six hours, lasted about two or three days, and then gradually subsided. There is no fever present in these patients and very little pain. The writer thinks that the complaint has nothing to do with rheumatism or gout, as is commonly believed. Its exact cause is as yet unknown, but it probably depends on a trophic vasomotor neurosis of the joint The condition is very chronic, but may disappear for a time, thus simulating a period of cure. Treatment has thus far proved valueless, at least the use of water and bath cures, the salicylates, quinine, arsenic, etc., have not had any effect on the course of the disease.

Spirochetes in Framboesia Tropica.—Mayer confirms the findings of Castellani as to the presence of spirochetes in this tropical disease, the clinical similarity of which to syphilis has been noted by a number of writers, although no actual identity has ever been demonstrated. Mayer found in five cases of framboesia in Ceylon and Eastern Africa the typical form of spirochete described by Castellani, which closely resembles the *Spirochæta pallida* discovered by Schaudinn. The organisms were found in the serum from recent papules. Mayer claims that these spirochetes are the probable etiological factor in the production of this tropical disease.

Contusion Pneumonia.—Litten discusses this form of pneumonia, of which a considerable number of instances have been described, and which differs from the so-called traumatic pneumonia, in that there is no wound of the lung by the penetration of objects from without. The injury is due to a blunt force and produces a sudden and extensive compression of the pulmonary tissue. No evidence of any injury can be detected on the outside of the chest, although this may have been sufficient to have caused a complete tear of one of the lobes of the lung. Ecchymoses are more likely to be found in cases where the lungs have escaped injury. The pneumonia need not necessarily occur at the site of the external injury, but may take place in the opposite side of the chest, and if there are any old adhesions or tubercular foci present these act as a locus minoris resistentiæ. The lesion is most often the result of a fall from an elevation, but it may also be produced by a severe blow, by compression, or by being run over. Another cause to which the writer calls particular attention is the lifting of heavy weights, an instance of which he reports in the present paper. A man engaged with a number of others in lifting a heavy truck was soon after seized with severe pains in the chest, and was prostrated. Two days later a pneumonia was diagnosed, and within five days the man was dead. Three other similar cases were previously observed by the author, from which it appears that the cause referred to is an important factor in the etiology of the condition. The chief characteristic of this form of pneumonia is its sudden onset, brief course and high mortality rate, for as far as can be determined from the cases thus far reported the latter is apparently about 68 per cent.

Book Reviews.

Pulmonary Tuberculosis. Its Modern and Specialized Treatment, with a Brief Account of the Methods of Study and Treatment at the Henry Phipps Institute of Philadelphia. By Albert Philip Francine, A.M. (Harv.), M.D. (U. of P.), of the Staff of the Henry Phipps Institute, Philadelphia; Examining Physician to the White Haven Sanatorium; Instructor in Medicine and Physician to the Medical Dispensary of the University of Pennsylvania; Medical Registrar to the Philadelphia Hospital. Philadelphia and London: J. B. Lippincott Company, 1906.

This work contains a considerable number of facts and no inconsiderable number of unproved theories regarding pulmonary tuberculosis. It would appear from a perusal of the chapter on "Hints and Helps to Tuberculosis Patients" that this work is intended not only for medical men but for the tuberculous laity as well, and there is scarcely a doubt but that the layman will be interested and edified (?) to discover, as the author so frequently points out all through his work, what an ignorant, unscrupulous, careless, and altogether mischievous individual is the general practitioner of medicine when he comes to deal with the problems of tuberculosis. Indeed, the general practitioner does not alone suffer from the author's criticism. For instance, in the chapter on "Climate" (page 47) occurs the following: "Poor people often make a financial effort and pay one visit to some well-known physician for an opinion or diagnosis. The latter finds them suffering with tuberculosis, usually well advanced, and with self-complacent irresponsibility advises them to 'go out West.' He may even go so far as to tell them that in this course lies their only chance of getting well. Such advice cannot be too strongly condemned, both from a professional and humanitarian standpoint." Again in the same chapter one can imagine the feelings of the layman who has heretofore reposed some measure of confidence in the medical profession when he reads as follows: "Certainly one cannot condemn too strongly the advice so commonly given, founded on false conceptions, ignorance, and irresponsibility—to go away, live out of doors, take plenty of milk and eggs, and not 'overdo' exercise. Those who follow such unfortunate and reprehensible advice, and there are many thousands who do, are victims to the ignorance of the profession, and are hourly frittering away their chances of recovery." Yet, this does not seem such unreasonable advice—to "live out of doors, take plenty of milk and eggs, and not 'overdo' exercise."

The lengthy "Prefatory Word" under which title the author introduces his subject, is not merely prefatory but fundamental. Though on the whole most of the author's statements, when he is not attacking the members of his own profession, are no doubt sound, they are unconvincing because, on the one hand, of the dogmatism which characterizes the work throughout, and, on the other, of the haphazard manner in which the thoughts are grouped, and again because of the fact that some statements which must strike many as embodying entirely new ideas, are made without the least reference to authority.

In the chapter on "Koch's Tuberculin" and in that on "Serumtherapy" the author has exercised much better judgment and exhibited comparative freedom from the assertiveness and dogmatism which characterizes the rest of the book, but two chapters of sound, unprejudiced, good reading cannot serve as justification for the balance of the book which contains but little that is new or instructive on the subject of phthisis.

The Nervous System of Vertebrates. By J. B. Johnston, Ph.D., Professor of Zoology in West Virginia University. Philadelphia: P. Blakiston Sons & Co., 1906.

The author's own view of this work is given in the preface: "The attempt has been made in the following pages to give an account of the nervous system as a whole, to trace its phylogenetic history, and to show the factors which have determined the course of evolution. The functional point of view which is the chief characteristic of the present book, brings the treatment of the nervous system into close relation with the work of recent years on the behavior of animals." Dr. Johnston has had before his mind at all times the fact that the inherited organization of the brain is actually the product of the experience of the genus, species, and variety (sometimes), and of the individual parents, although of these last the influence is but small; that the brain as inherited by the individual man contains the results of untold ages of experiences, the experiences of the individuals who are a given man's progenitors, for example, which experiences at times reach the plane of the individual consciousness, and we recognize them as instincts or prejudices, which instincts and prejudices we but too well know as forces impelling, and sometimes compelling, us to action.

Syphillis du Poumon, chez l'Enfant et chez l'Adulte. Par le Dr. Bériel, ancien interne des hôpitaux de Lyon, préparateur au laboratoire d'anatomie pathologique. Paris: G. Steinheil, 1906.

This volume is a capable summary of our present knowledge of pulmonary syphilis, and contains an extensive bibliography of the more important publications bearing on the subject. The author studies in detail the gross and minute pathology of the various lesions, and their associated symptoms. He is very cautious in his acceptance of reputed cases, rejecting many of those reported as being tuberculosis occurring in a syphilitic subject. A few pages at the end of the volume are devoted to the results of treatment, the technique being omitted, as out of place in a special work of this nature.

Animal Micrology. Practical Exercises in Microscopical Methods. By Michael F. Guyer, Ph.D., Professor of Zoology in the University of Cincinnati. Chicago: The University of Chicago Press, 1906.

When Kölliker's Microscopical Anatomy appeared in English the only reagents in common use, so far as anything in the references to technique told the reader, were 5 per cent. solutions of caustic soda, a solution of acetic acid of the same strength, and a solution of chromic acid of a strength not definitely given. Frey's Microscopical Technology, translated by Cutter and published in the '70's, tells us in the preface that the methods of technique have become so numerous that they must be discussed in a volume other than one given up to the description of the tissues. But to-day, if one wishes to keep up a working knowledge of general technical development outside of his own small special field, a whole library is in demand. This fact is well illustrated in this admirable handbook which, so far as certain matters are concerned, leaves but little, if anything, unsaid.

Chapters 1 and 2 give a broad general view so that the beginner can see the end for which he is working, and Chapters 3 to 6 give an accurate insight to the way of handling the great development of modern technique, the section, the consecutive section, and finally, reconstruction to scale. Chapter 3 gives methods of killing and fixing, but omits the morphine method in reference to microscopical animals which in many instances is notably better than that with chloroform water or its substitute.

Then follows an exhaustive discussion on the processes of sectioning, the paraffin, celloidin, and freezing. There is no mention of the Bumpus modification of celloidin methods, which are truly admirable. The student who has mastered these chapters has also mastered the whole essential technique of sections and is to be congratulated accordingly. The discussion of stains and reagents is accurate and generally sufficient, but the technique described suggests a special interest in the nervous system. Appendix C is important, as it gives in full detail the best method of hardening and preparing every tissue of the body.

Diseases of Children. A Manual for Students and Practitioners. By George M. Tuttle, M.D., Attending Physician to St. Luke's Hospital; Martha Parson's Hospital for Children; Bethesda Foundling Asylum; and Professor of Therapeutics, Medical Department of Washington University, St. Louis. Series edited by Bern B. Gallaudet, M.D. Second Edition. Revised and Enlarged. Illustrated with five plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co.

Most books dealing with diseases of children can be divided into two parts; the first consisting of chapters on the special conditions of infancy and childhood, and the other treating of practice in general, but slightly modified to suit the requirements of young patients. The first part is, by far, the more important; and it is usually much the smaller of the two. In the present volume, this first or introductory portion consists of about sixty pages, and contains chapters on the infant at birth, normal development of the infant, examination of the child (one page only), diseases of the new-born infant, and the feeding of infants. This last chapter, which is probably the most important in the book, is clearly written, and deals ably with the subject. The remainder of the volume is concerned with the various diseases, arranged as in books on general practice; but following Diseases of the Digestive System there is another valuable chapter on Disorders of Nutrition, dealing with malnutrition, marasmus, scorbutus, rachitis, diabetes, and rheumatism. The book is well adapted to the requirements of the beginner in the study of pediatrics.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held April 4, 1907.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Public Health.

Street Dirt and Public Health.—Dr. W. GILMAN THOMPSON said that it should be admitted that the noxious influence of such dirt upon the human organism might constitute a predisposing cause of disease by maintaining a constantly irritated or congested condition of the respiratory mucosa, quite as much as it might act as a medium of the direct conveyance of disease germs. Street dirt he regarded as comprising any or all of the following ingredients: (1) The ashes, house sweepings, etc., which were freely blown about from exposed ash carts and ash barrels; (2) the excrement of horses and dogs voided in the streets, to become dried, pulverized, and distributed by wind and traffic; (3) the irritating, powdered asphalt, ground from the surface of the pavements, and often mixed into a slimy paste with mud, horse dung, and the petroleum drippings from automobiles; (4) pulverized earth, plaster, iron dust, cement, etc., derived from buildings undergoing construction or demolition, and carried about the streets in loosely constructed wagons; (5) the earth from street excavations, usually impregnated with sulphides and other products from leaking gas mains; (6) the soot from chimneys which eventually settled in the streets; (7) the garbage which, in the tenement districts, was frequently overturned into the street; (8) human excreta which, in the crowded tenement neighborhoods, was often voided by children or adults in blind dark alleys and ill-lighted streets. It was no exaggeration to state that nine-tenths of the diseases of this type, *i.e.* the acute inhalation diseases and chronic catarrhal diseases, were directly due to dirt inhalation. During the winter the masses of dirt-covered snow melted slowly and so modified the local climate by begetting moisture and chilliness of the atmosphere, which favored the development and maintenance of coughs, colds, and rheumatism. The sewers became clogged with street refuse and the crossings were often left ankle-deep in slush, making it impossible to keep the feet dry. In the tenement districts where the street life constituted so large an extension of the house life, the condition of the streets was most important from a social, moral, and economical standpoint. Articles of fresh food, such as milk, fish, vegetables, and fruits, were more or less exposed to contamination by street dust and coated with bacteria. As long as dirt remained moist it was relatively heavy but also sticky; this favored its being carried into dwellings, public buildings, street cars, and subways, there to be dried and pulverized. Dry dirt remained comparatively harmless while at rest. But in the streets it seldom remained at rest. The longer dry dirt remained in a given street, the more it became pulverized and the more widely was it disseminated in the atmospheric air. Sufficient nonspecific germs were conveyed by street dust to excite catarrhal or purulent inflammations, and by thus fostering a chronically diseased or irritated condition of the respiratory passages, the latter were rendered liable to more serious infections. Herein lay the chief menace to health from street dirt. The danger was complicated by the fact that the sputum of patients having chronic tuberculosis, bronchitis, or nasopharyngeal catarrh, expectorated when they were at large in the streets, was swept from the sidewalks and added to the general street dirt. Dr. Thompson said that one of the great difficulties in obtaining permanently clean streets in New York City appeared to reside in the multiplicity of authorities controlling them. Such a degree of subdivision was doubtless necessary in these days of extreme specialization in all classes of labor, but unfortunately it left a loophole of escape from complaints by shifting the responsibility perpetually from one department to another. Dr. Thompson submitted the suggestion that after further discussion of this important topic a resolution be acted upon to the effect that:

Owing to the accumulation of street dirt in this city, the health of many citizens was impaired so as to render them frequently and unnecessarily subject to serious and often fatal respiratory diseases, and that in order to secure permanent improvement in street cleanliness, the Mayor of the city be urged to appoint a commission to study and report upon the matter and formulate a proper scientific plan for permanent relief from conditions which afforded a constant menace to health, as they now existed.

Such a commission would consider the whole subject from its medical aspects as well as its engineering problems, its economic side, its administrative efficiency and responsibility, and its permanence. Its report would furnish an appropriate basis for legislation and secure permanent relief.

Practical Difficulties in Cleaning the Streets of New York City.—Capt. F. M. GIBSON, late Deputy Commissioner, Department of Street Cleaning, New York City, addressed the Academy on this subject. He said that after hearing Dr. Thompson's paper, he must enter upon a defense of the Street Cleaning Department. The matter of cleaning the city streets and keeping them clean must necessarily be predicated upon a number of prerequisites. First, the streets must be properly paved to be properly cleaned, as broken places made perfect cleaning absolutely impossible. In a city so congested as was New York, so crowded with traffic, there were limitations which made this a serious problem. In a conversation with President Ahearn he was told that between December 17 and March 17 there were but nine days when the asphalt could be repaired. Another prerequisite rested with the people themselves; it was necessary to have the cooperation of the public in observing the city ordinances. Many people swept the pavements into the streets after 8 o'clock in the morning, and orange, lemon, and other skins were thrown into the streets. Another obstacle to street cleaning was the restricted use of water; there should be a free and unrestricted use of water and when the weather conditions permitted, street flushing. Capt. Gibson said that if the Academy was going to make any recommendations, it was very important that the unrestricted use of water, when available for the purpose, should not be denied the Street Cleaning Department. He was a firm believer in flushing the streets. Another prerequisite was the earnest and hearty cooperation of the city departments which for some cause or causes seemed to be seriously lacking. This remark applied with special force to the city magistrates who, through kindliness or good heartedness perhaps, were much too lenient with old and persistent offenders. He said that so soon as the Bingham Police Bill was passed and became a law, it would be an excellent thing to discontinue the Board of City Magistrates and then to turn these old offenders over to the police captains of each district. They would be made to do their duty. Another important thing and serious obstacle to proper street cleaning was the licensing of pushcarts. There should be a discontinuance of pushcart licenses. As long as this was practised, and this kind of traffic was permitted, it would be absolutely impossible, especially on the lower East Side of the city, to keep the streets in anything like a sanitary or cleanly condition. The city would save about $70,000 a year by their discontinuance. The city of New York should not be placed at such an expense. There were approximately 5,000 pushcarts in New York City; each one must have a license which cost $2; thus the city only obtained $10,000 a year. Another prerequisite was the

maintenance of the strictest discipline possible, for, without it, in such a large aggregation of men, one's best efforts counted but for very little. More positive rules should be made, and if a man broke one he should be dismissed for good, and not be allowed to come back to the Street Cleaning Department, or any other. Another prerequisite was the total elimination of politics. Another was the definite fixing of responsibility for the furnishing of proper receptacles for refuse, and the necessary number of them, especially in the tenement house districts. The law required that they be filled only to four inches of the top; instead of this they overflowed and became scattered. Another prerequisite had to do with permits for building material. New York City in recent years had grown to be a city on top of a city; therefore, the work of cleaning the streets should be conducted on broad, bold, intelligent, and common sense principles, and, to do so, the laws governing such work should be as elastic as the honest interest of the city would permit. For instance, broader civil service regulations, extension of the Commissioner's powers in selecting officers of the uniformed force, etc. He should also have greater latitude in procuring the necessary supplies for his department. Captain Gibson then gave a few statistics which he thought might be of interest in regard to the quantities of material collected and disposed of.

Cart Loads, 1906.

	Ashes.	Rubbish.	Garbage.	Total.
Manhattan	1,074,725	225,227	230,697	2,130,646
Bronx	145,000	16,096	20,632	183,639
Brooklyn	522,525	112,711	102,822	737,058
	2,342,256	354,934	354,151	3,051,343

Population, December 31, 1906.

Manhattan	2,232,828
Brooklyn	1,448,095
Bronx	308,256
Total	3,989,179

In excess over 1905 by 119,178.

Appropriations.

1906	$6,011,537.48
1907	$6,258,257.17

Increase for 1907 of $246,719.69.

Miles of Paved Streets, December 31, 1906.

Manhattan	433.20	Decrease	5.69
Brooklyn	647.08	Decrease	13.08
Bronx	90.98	Decrease	4.76
Total	1,171.35		23.53

Number of Men Employed.

Uniformed force, including officers	5,302
Clerical force	55
Mechanics and help	219
Engineers, firemen, etc	25
Total	5,601

Captain Gibson closed his remarks by suggesting a practical change of municipal government, eliminating the boroughs and their machinery.

Practical Ideals of Street Cleaning—Mr. Rudolph Hering read this paper. He said that under practical ideals of street cleaning they should understand the nearest approach that could be expected from a modern municipal government, to keeping the streets of a city perfectly free from the accumulation of all kinds of dirt, which might propagate disease, be unpleasant or annoying to them, or injure property within buildings. Such dirt consisted chiefly of finely comminuted solid matter or dust, originating both in the houses and in the streets, or dragged into the city by conveyances, animals, or pedestrians, or blown into it by strong winds. Ashes, garbage, and rubbish were excluded from his discussion. The street dirt or dust consisted of organic and inorganic waste matter and was traced to the following sources: Buildings, pedestrians, horses and wagons, earth working up between pavements or paving stones, small litter, and dust and soot carried by the winds. Asphalt and wood generally gave the best satisfaction in keeping down the quantity of dirt generated upon the streets, and from their comparatively smooth surfaces allowed of the most perfect cleaning. A good, even, and smooth pavement, laid upon a firm foundation, was the first and most important practical ideal for street cleaning. He emphasized the importance of having narrow joints for stone blocks. The second most practical requirement for the best practical street cleaning was water. In some European cities some of the most important asphalt streets were washed daily with hose, connected either directly to the water mains or to a water truck. A squeegee, having a blade of rubber, was used to scrape the material thus loosened from the center of the streets to the gutters, where it either entered the sewers, as in Paris, or its water was allowed to drain away, as in Berlin, and the dried material was then carted away. With generally good grades for sewers, as in New York, there appeared no good reason why the Paris method should not be applicable here, except that a large amount of road detritus or silt would be deposited in the rivers near the sewer outlets and later require removal by dredging. Naturally all street cleaning with water was not applicable during freezing weather, but it had been demonstrated that if the streets were clean when winter began, and if the snow was promptly removed and no rubbish was cast upon the streets, there was no objectionable accumulation during the winter and no special cleaning was required until flushing or sweeping could be resumed. Another important requirement for perfect street cleaning was sweeping. On most of the streets of large cities the dirt was now removed by machine sweepers. The greatest defilement on busy streets came from the horse droppings; it was necessary to scoop them up as soon as possible after dropping and to deposit them into dust bins situated at convenient places, or into portable receptacles immediately at hand. Another important requirement to secure practical street cleaning related to the organization for effecting it. To do the best work in the shortest time and at the least expense meant high efficiency on the part of the managers and workmen. In conclusion he suggested that a careful and thorough collection of facts be made by the city covering this service in other principal cities of the United States and Europe, and basing it on properly comparable elements so that definite and practical conclusions were clearly indicated by them as to the best means for securing the highest attainable degree of cleanliness.

Dr. Francis P. Kinnicutt said he wished to emphasize the importance of the hearty cooperation of the public in the work of street cleaning. An ordinance against throwing litter in the streets was not sufficient. He remembered that Col. Waring said that a great deal of his success in keeping the streets clean was due to the cooperation of the citizens of New York; he was able to develop in them a civic pride. With regard to this civic pride, if 1,000 citizens should take a daily interest in street cleaning, as they saw it done before their own doors, and would give their ideas, or observations of defects or faults, much might be accomplished. It was preposterous to say that it was impossible to clean the streets of New York, or that this city should be less clean than the cities of Great Britain, or continental Europe.

Dr. S. A. Knopf said that to sweep a street when it was dry was a crime against one's fellowmen. It was a mistaken idea to think that dust which did not contain pathogenic, *i.e.* specific disease-producing microorganisms, was harmless. It was on the contrary most harmful, because of its irritating influence on the mucous membranes of the respiratory organs. The relative increase of tuberculosis among the New York street sweepers which was first noticed a few years ago was, in his opinion, not solely due to the inhalation of tuberculous sputum which might have been expectorated in the streets by consumptives and which had most likely been rendered innocuous

by sunlight and air; but it was due to the irritating influence of dry dust, raised by the street sweepers themselves, because they did not sprinkle the streets before sweeping. The pulmonary tissue thus irritated invited an invasion of the bacilli to which the street cleaner, in his unsanitary tenements and other unhygienic environments, was as much exposed as anybody else. When the streets were sprinkled before they were swept there would be less tuberculosis among the street cleaners. As proof of all this he cited the well known fact that the street cleaners of Berlin were the healthiest body of men of all the city's employees and virtually free from tuberculosis. Much had been said of cooperation between the various departments and the citizens at large. He approved of this most heartily, and even went a little further and said that they should not only have the cooperation of the adult citizen, but also that of the young rising generation, and should teach them civic pride. Some would perhaps recall the excellent service rendered by cooperation of the children, which was brought about by the late Col. Waring when he was at the head of the Street Cleaning Department. However, they needed above all things the cooperation of the corporations, surface and elevated street car companies, and all corporations who now constantly violated the law by burning soft coal. If these corporations would do their duty and obey the laws, there would be less dust in the air, less dirt in street cars, and less dust swept down from the elevated platforms on the pedestrians by the ignorant or wilfully careless porter. Lastly, there should be a training school for street cleaners as well as there was one for policemen and firemen, and the advancement in the ranks should not depend upon anything but practical knowledge of street cleaning and the record as to the performance of duty in previous positions. With trained sanitary engineers at the head, practically trained foremen and practically taught men in the ranks, a cooperation of all the city departments interested in the work, a cooperation of corporations, citizens at large, young and old, they should have as clean a city as any in the world.

Dr. T. R. Maxfield believed that the danger from street dirt was due more to the irritation produced than to any specific infection. One of the first things that struck him was the matter of educating the inhabitants, especially in the tenement districts, to keep dirt, ashes, garbage, etc., in proper receptacles. He believed the streets could be cleaned at night; the night air was heavier and was less conducive to the spread of the dust through the air. The ashes should be removed at night. Pushcarts should be abolished. A lack of cooperation of the different departments was a serious thing of to-day. There should be a more hearty cooperation of the police in enforcing the sanitary ordinances; it was now a dead letter. There should be proper cans for ashes and garbage. In Brooklyn this was being enforced as rapidly as was possible.

Mr. G. A. Soper agreed that the injurious effect of dust was due more to the irritating effects than to its microbic character. It was very necessary to get rid of the waste in the houses. A large quantity of street dirt was carried away by the sewers and rivers; the rivers finally became the depositories of this waste. The Department of Docks removed from between the slips and piers over 870,000 cubic yards of material, a large part of which came from the streets, carried there by the waters in the sewage. The cost of this was not far from $200,000. The government would be forced to continually dredge these channels in order to permit the ocean-going vessels to get by. It had recently been proven that the garbage that was emptied into the middle and upper bay had not been carried out to sea; most of it was not carried beyond the narrows. Again, much of this garbage came back. After the houses on Barren Island were destroyed by fire, the refuse was carried fifty miles beyond the New York harbor and, it was found, this garbage littered the coast of Long Island for fifty miles and the coast of New Jersey for seventy-five miles, some going even to Atlantic City.

Mr. Baker said that street cleaning was as important as was garbage disposal. He said that one of the great faults of American cities was the large amount of money expended in municipal works and the comparative neglect in their maintenance after. This applied particularly to the care of the street pavements.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held March 25, 1907.

The President, Dr. Walter Lester Carr, in the Chair.

Report of the Comitia Minora.—Dr. John Van Doren Young read this report and recommended the dismissal of the charges of malfeasance in office against the counsel of the society, Mr. Champe S. Andrews, by Dr. Charles J. Mooney. After a discussion, partaken in by Dr. Egbert Le Fevre, Dr. John J. MacPhee, and Dr. Samuel Lloyd, the motion was lost. A motion was then made that the charges against Mr. Andrews be considered at a special meeting of the society; this was carried.

Multilocular Glandular Cystoma of the Ovary Complicating Pregnancy.—Dr. B. S. Talmey presented this clinical report, which showed that large tumors did not always produce dystocia (to be published later).

The papers of the evening were devoted to a discussion on gonorrhea in women.

Pathology of Gonorrhea in Women.—Dr. Henry C. Coe read this paper. (See page 684.)

Infection of the Urethra, Vagina, and Glands of Bartholin.—Dr. William S. Stone read this paper. (See page 685.)

Gonorrheal Invasion of the Uterus and Fallopian Tubes.—Dr. Brooks H. Wells read this paper. He said that the subject chosen for discussion was one of the most wide-reaching importance and interest, and had to do with an evil that was born of the unbridled passions of man, a creature of darkness that stole the bloom and joy of life not only from the frail sister of the street, but too often also from the fairest and most carefully guarded daughter, striking her through him she had chosen and trusted as her husband and protector. He asked for how many childless homes was this evil responsible, for how many lives made sunless by the cloud of a chronic pelvic invalidism, how many marriages made failures by marital incapacity? For as many or more than from all other causes of pelvic ills combined. Twenty-five years ago gonorrhea was hardly considered as a cause of pelvic disability, of chronic invalidism, of sterility; now, we knew how widespread and serious were its ravages. It was difficult to find reliable statistical evidence of the relative frequency of gonorrheal endometritis and salpingitis, as compared with the frequency of infections of other portions of the genital tract in the female, but from his own experience he believed that at least one case in four developed a gonorrheal endometritis, and one in eight or ten had gonorrheal infection of the tubes. Although he had seen many cases of gonorrhea in little girls (infancy to six or eight years of age) he knew of none in which it could be shown that the disease had invaded the infantile endometrium or tubes. At or about puberty, however, with the development of these parts, the conditions were changed. Gonorrheal endometritis might be primary, but was more often secondary to infections of the lower portions of the genital tract. The only positive means of diagnosis was the microscope. It usually began within two or three months after the primary infection and sometimes within a few days. The symptoms were intensified just before, during and after menstruation, at which time the

gonococci became more numerous and virulent. Gonorrheal salpingitis was caused by an extension of infection from the uterus, and the interval between the primary infection and the invasion of the tubes might be only a few days, or might be after a long time and after periods of symptomatic health. A gonorrheal salpingitis was usually bilateral and might exist for some time without showing any distinctive symptoms. More often the symptoms were fairly well marked and rarely they might be so virulently intense as to produce a picture of acute peritoneal shock. The invasion was apt to be marked by a slight chill followed by a moderate rise in temperature, together with more or less malaise and prostration. There was pain in the ovarian regions, most often to the left side. The pain was at first sharp, cutting or pulsating, and was followed later by a dull steady ache or severe paroxysmal pain, sometimes both. The pain, when severe, was apt to radiate along the sacral plexus or sciatic nerve. The symptoms were aggravated by defecation, exertion, or coitus. Menstruation was usually profuse, irregular, and painful as a result of the accompanying endometritis and the disturbance of the pelvic circulation by the disease process. Micturition was frequent and painful. The general health suffered from the absorption of toxins and the effect of pain and anxiety. The patient often became more or less of a neurasthenic invalid. A bimanual examination revealed the enlarged tubes behind or at the side of the uterus and gave the familiar picture of a periuterine inflammation. There was sometimes a symptomatic cure, but more often the improvement was only temporary and the patient suffered recurrence of the trouble. The cases of rupture of the tubal abscess and discharge through some hollow viscus were very rare and he had never seen one. In the mild cases sterility was the most important result; in the more severe an increasing invalidism; in the rare fulminating type death might occur within a few days.

Abortive Treatment of Gonorrhea in Women.—Dr. Frederic Bierhoff outlined the following method of treatment: He said that by abortive treatment we meant that which brought about a cure upon one or two applications. The term was used in contradistinction to prophylactic or preventive methods. If women early in the course of a gonorrheal infection became aware thereof, and would go to the doctor, an abortive treatment might be possible in a fairly large number of cases. Unfortunately in almost all of the cases of gonorrhea in females, the patient presented herself for treatment when the process had already gotten a deeper foothold in the urethra, or when the urethral crypts, or the cervix uteri, had become infected. Then, of course, an "abortive cure" was impossible. In order to make the positive diagnosis of a gonorrhea early a microscopic examination of the urethral, vaginal, and cervical secretions was a *sine qua non*. If the cervix uteri was infected an abortive cure was impossible. Similarly with the Bartholinian glands, or periurethral crypts. If the diagnosis could be made early, before the gonococci had had a chance to penetrate deeply into the mucous membrane, or before the occurrence of complications, as mentioned above, and when the urethra alone, or the vulva, or vagina, or a combination of these, was the seat of infection was an abortive cure possible? When the conditions were favorable he employed the following procedure: 1. Microscopic examination of the urethral secretion or scraping, and of the vulvar secretion. 2. Cleansing of the meatus, and irrigation of the urethra and surroundings with a solution of one-fourth to one-half per cent. of soluble silver. The hand syringe or irrigator was employed and no forcible pressure was applied. In all about 300 c.c. was used for this purpose and some of the fluid was injected through the urethra into the bladder, to be there expelled by the patient. 3. Cleansing of the vulva by a stream from the irrigator. 4. A vaginal scraping was now made and examined. 5. The nozzle of the syringe was gently inserted into the vagina, so that the body of the syringe blocked the outlet. The vagina was then distended under gentle pressure, with the solution, and this was then allowed to flow out. About 300 c.c. were used. 6. A sterilized speculum was inserted into the vagina and all secretion gently wiped off, and the cervical orifice cleansed. 7. A microscopical examination of the cervical secretion was made. Should it be free from gonococci, then the vagina was lightly tamponed with absorbent gauze, saturated with five per cent. soluble silver solution, and the speculum withdrawn. He employed the tamponade whether the vagina was infected or not. 8. A urethral bougie of five per cent. soluble silver in cocoa butter was inserted into the urethra. 9. A pad moistened with one per cent. soluble silver solution was placed over the urethral and vulvar orifices and kept moist with the solution. 10. Rest in bed, if possible, bland diet, and a daily warm sitz bath completed the treatment. The patient must be subjected to the same tests as the male patient before being pronounced cured.

General Treatment of Gonorrhea in Women.—Dr. H. J. Boldt read a paper on this topic. He said that, so far as treatment was concerned, it was essential to bear in mind that in the greater majority of acute cases the disease was limited to the lower part of the urogenital tract and that, if we could bring the patients under proper care early enough, we could almost always hold the disease in check so that the upper parts of the genital tract would not be infected. The opinions as to treatment were as divergent as in the case of diphtheria before the discovery of the diphtheritic serum of Behring. Each method of treatment had its advocates and likewise its opponents. Most authors were, however, unanimous in stating that no active treatment should be employed during the acute stage. Cleanliness, restricted diet, and rest were most approved of in this stage. When the acute stage had subsided, local treatment was begun; but in the employment of local treatment, the use of vaginal douches was generally discarded. The secretion should be wiped out dry with absorbent cotton. The most favored remedy for local applications was a five per cent. solution of soluble silver. If the ducts of Bartholin were involved they must be treated on surgical principles. If a cyst formed it should be exsected. If an abscess formed it should be opened by a long incision parallel to the inner lip of the labium. The cavity after being cleansed might be swabbed with pure carbolic acid, which should immediately be wiped out again with pure alcohol. The cavity should then be packed with iodoform gauze. Where the infection remained obstinate in the small ducts he split them and used the actual cautery. Condylomata were best removed with a cautery knife. Personal observations in the matter of the various silver solutions seemed to show that it took about the same length of time to effect a cure, no matter which one was used. Some patients were cured in from four to six weeks and others were not entirely cured after six months' treatment. Patients with subacute infection did much better if they could keep themselves free from physical exertion. It was important to see that the husband was put under the care of some one who appreciated the danger of reinfection, so that cohabitation was not permitted until both husband and wife were cured. While for a time the gonococci infection might remain limited to the cervical mucosa, it must be admitted that it was extremely difficult to tell some patients when the invasion had encroached into the uterine cavity he had, therefore, placed himself on the side of those who at once attacked the entire uterine mucosa. If the patient permitted it he put her under an anesthetic and disinfected the genital tract, and then before proceeding to dilate the cervical canal the uterus was copiously irrigated with a double current bladder catheter; then the cervix was dilated slowly and gently, but effectually, and a thorough curettage was done with a sharp curette. He preferred a Martin curette for the first general abrasion of the mucosa, followed by

a small sharp curette used around the tubal openings. The uterus was then again copiously irrigated with plain sterile water, or a mild antiseptic solution, and was tamponed with a long strip of gauze soaked in a five per cent. solution of soluble silver. The rest of the genital tract was tamponed with iodoform gauze and the patient put to bed. If urethritis was still present it should be treated at this time, and also the ducts if infected. The gauze was removed on the following day, and on the third day the entire treatment, with the exception of the curettage, was repeated. If consent to curettage was not given office treatment was used. An intrauterine application was made by means of the intrauterine applicator syringe. The intrauterine tampon was left in the uterus for two or three hours and the patient directed to remove it by means of the attached string. A medicated tampon was placed in the upper part of the vagina, if desirable, and was held in place by a plain non-absorbent wool tampon. The strings of the tampon were so marked that the patient could know which to remove first. After removal of the tampons a copious antiseptic douche was used by the patient. This treatment was not as desirable as the first, as it was fraught with more risk of causing subsequent pelvic inflammation. The treatment should be repeated every two or three days, and the advantage of a perfectly made intrauterine applicator could not be overestimated. In case menorrhagia complicated gonorrheal endometritis, he had found patients benefited by the internal administration of hydrochloride of cotarnine, in doses of three grains, given in gelatin capsules, three times daily, if the previously instituted treatment did not have the desired effect. Alone, without local treatment, especially curetting, it gave unsatisfactory results. In that class of patients in whom metrorrhagia and menorrhagia were almost uncontrollable, he awaited a non-bleeding period and then made intrauterine applications of pure carbolic acid, leaving the intrauterine tampon *in situ* for a couple of hours. The treatment was repeated every second day until six or eight treatments had been applied, and at the next menstruation interval it should be repeated. He had no untoward results from the application of pure carbolic acid to the uterine cavity. In acute gonorrheal infections of the adnexa, with or without invasion of the pelvic peritoneum, rest, the application of the ice coil, or ice bags, a narcotic, preferably in the form of suppositories for the purpose of lessening peristalsis, and the avoidance of subsequent local examinations should be insisted on until the acute symptoms had subsided, when one might begin with warm vaginal douches containing a mild antiseptic. The cold applications should be continued until the temperature was normal and the patient free from pain. The patient should not leave her bed until the temperature had remained normal for one week, and upon any exacerbation of symptoms the rest treatment should be resumed. If at any time the Fallopian tubes became distended with pus, and sunk to the floor of the pelvis, further delay with conservative treatment should not be practised. The patient should be anesthetized and the cul-de-sac of Douglas widely opened. The tubes could then be incised and evacuated. There was a class of patients who, while they made a temporary recovery, had more or less pain either constantly or at varying intervals, with menstrual irregularities and perhaps occasionally acute exacerbations. Bimanual examination revealed the symptoms of salpingo-oophoritis with a metroendometritis. The Fallopian tubes were more or less distended and sometimes the adnexa and uterus were matted together in the perimetric exudate. It might be impossible in these cases to demonstrate the presence of gonococci. In these cases local treatment had proved useless in his experience. Surgical intervention was the only form of treatment that held out hope. There was another class of patients in whom the disease had, to a large extent, became spontaneously cured, so far as pyosalpinges were concerned, but the residue of the old chronic pelvic inflammation, consisting of tubes thickened and adherent, ovaries in a constant state of inflammation, and uterus perhaps smaller than normal; in some cases larger. Menstruation with this class of patients was likely to be at longer intervals, six weeks to three months, though in some instances it might be frequent, at intervals of two or three weeks, and the amount of blood lost variable. Severe dysmenorrhea might be present. Local therapy seldom benefited this class of women, who usually had been sterile or had but one child. If their suffering made it difficult for them to pursue their vocation, and they were past the middle thirties, a radical vaginal operation was most expedient. If younger, then a salpingectomy should be resorted to.

Dr. James N. West said, speaking on the treatment, that there was the greatest field of usefulness in prophylaxis. The disease which had produced such ravages on mankind was so little under control and the reason was, he believed, because it was accepted as a social evil among all, and all feared to speak of it in good society. At the Post-Graduate Hospital they had adopted active measures, measures which were practical, and which instructed people in regard to the nature of the disease, gonorrhea as well as syphilis. Also, the Society for Moral Prophylaxis in this city was discussing this question, agitating it, and bringing it before the public mind, by which the public had their eyes opened to the ravages of this disease. At the Post-Graduate Hospital a slip of paper was given to every patient suffering from either gonorrhea or syphilis, having on it printed instructions, given in simple language. They were fundamental instructions, and they went to the root of the matter. Dr. West hoped that those who were connected with clinics, and those in private practice as well, would have something of this sort to present to every patient suffering from gonorrhea or syphilis.

Dr. Lapowski discussed the papers.

Dr. Wells and Dr. Boldt closed the discussion.

Gonorrhea During Pregnancy.—Dr. J. Clifton Edgar read this paper. (See page 687.)

NEW YORK PSYCHIATRICAL SOCIETY.

Stated Meeting, Held March 6, 1907.

Dr. Allan McLane Hamilton in the Chair.

The Psychogenetic Factors in Some Paranoic Conditions, with Suggestions for Prophylaxis and Treatment.—Dr. August Hoch read this, the paper of the evening. He pointed out that among the paranoic states there were cases, and that they probably represented a large proportion, in which the psychogenesis could be clearly traced when the facts of the cases were really accessible. The theory of the development of paranoic states Dr. Hoch summarized briefly as follows, stating that besides basing his ideas upon facts of his own studies he had been influenced by the work of Adolf Meyer, Freund, Bleuler, and Jung: Every person has certain points on which he is especially sensitive. He has ideas or complexes of ideas which are associated with very strong feelings. These complexes refer either to personal defects, shortcomings, limitations, or to feelings of guilt, remorse, shame; on the other hand, to certain longings and desires. We may, therefore, generally speaking, say that they belong either to the realm of self-assertion or to the sexual sphere, in the broadest sense of the term. Now, most people are able to get square with such things, partly because their nature is such that these feelings never reach anything like a great intensity, or partly also because they have a healthy way of dealing with these matters. Other people do *not* get square with such difficulties. They do not acquire balancing, healthy habits, such as a healthy turning away from one's difficulties to outside interests, or a habit of unburdening or a certain aggressiveness and the like. While, then, such undercurrents, as we may call these complexes, when they are of any intensity have them-

selves a tendency to set narrower and narrower limits to the interest and to create a certain fascination, they often become a menace to the sanity of mind, also because they are not balanced sufficiently by sound mental tendencies. In this way there develops a growing disharmony which gradually, or sometimes under the influence of acute causes, physical or mental, may suddenly lead to an unbalancing of the mind when, finally, the undercurrents break through to the surface. But the mind, even in the cases in which the undercurrents are not handled properly, makes certain miscarried attempts at readjustment. Thus, the feelings of defect and the longings do not come to the surface as such, but are transformed; the former give rise to a general suspiciousness and delusions of persecution, probably for the same reason that we are inclined to blame everyone else except ourselves when anything which we do goes wrong; the latter give rise to ideas that the innermost longings are fulfilled. And there are still other forms of such miscarried adjustments. We see, then, that we have two things, the undercurrents and the abnormal manner of dealing with these undercurrents, upon which we should lay stress as important in the causation of these paranoic states. To a certain extent this division is, of course, artificial and the two principles often enough overlap greatly. Then again it is often difficult to find a correct or a definite formula for that which we have called abnormal mental habits, or difficult to pick out from among the complex fabric of mental reactions those which are disastrous, to estimate the dangers of certain combinations, or to correctly gauge the value of saving traits. Naturally it will often be a combination of traits rather than single traits which we have to consider, and while we speak of some reactions as dangerous mental habits they may exist in certain combinations in which they are sufficiently safeguarded. It is also very evident that causes other than an unhealthy manner of dealing with the undercurrents may enter into the causal constellation as well—such as influences which increase the strength of the undercurrents, or influences which, in other ways than those indicated, lessen the resistance, such as the action of alcohol, the menopause, and the like. These principles were demonstrated by means of careful analysis of four cases and certain indications for treatment were discussed.

Dr. H. R. Stedman of Boston, in discussing the paper, was inclined to lay more stress on the influence of heredity in affecting the progress of a genuine paranoia than did Dr. Hoch. Numbers of cases of the disorder were seen in patients who had been sensibly brought up and who were treated affectionately by their families, nothing being left undone to make their surroundings congenial and their lives smooth and happy, yet in spite of it all they developed paranoia. Little could be hoped for, he believed, in the way of materially modifying the psychogenetic factors so as to make any real impression on these cases of typical paranoia, a disease arising on a defective constitutional basis and gradually and logically developing into an inflexible system of delusional thought and conduct. He thought, however, that after the disease had developed, when family, friends, and a normal development had proved powerless to influence the disease, and the patient was sent to the hospital, his condition was more susceptible of improvement than is generally thought to be possible. He had not infrequently found the paranoiac to be rendered decidedly more manageable and his life made far more comfortable by regular friendly and explanatory talks, answering his questions, making the endeavor to set him right, and satisfying such of his minor demands as were not wholly unreasonable. The fact that many of them are hopeless and cannot be reached at all by such means—in fact, only become worse in consequence—accounted, he thought, for the tendency that exists to pay them as a class little or no systematic attention such as Dr. Hoch adopts with his cases. Dr. Stedman questioned if the reader had not chiefly in mind the paranoid state rather than the paranoiac, that symptomatic, persecutory condition so often found in dementia præcox. If so, he was wholly in accord with his view that much might be done in the way of prophylaxis. Dr. Hoch's masterly analysis of the psychogenetic conditions in his cases showed this plainly and he believed it to be due to the fact that the morbid direction of their thought had become less impaired than in the true paranoiac. Dr. Stedman felt the same confidence that he had expressed at length several years ago, that not a few cases of this kind, when recognized early by the psychiatrist while yet the patient is comparatively comfortable may be saved from an attack by well directed medical oversight and guidance and regulation of his habits and sourroundings. He attached little importance to the menopause as a special causative factor in insanity, as individual experience and statistics seem to show quite conclusively that paranoia develops to the same extent in both sexes during the period of life in which the menopause occurs.

Dr. Charles L. Dana said that he had been interested in Dr. Hoch's analysis, which was instructive as showing that in a certain group of cases of paranoia conditions might be improved by careful therapeutic effort. He had not been in a position to carry out this method of treatment, which could not be very successfully employed by those not connected with institutions. He agreed with Dr. Stedman as to the importance of hereditary taint in all these cases, and that a goodly proportion of paranoiacs develop in spite of careful bringing up. Few of these patients could be influenced unless they were taken in hand very early. He had been much interested in two or three cases of paranoia which illustrated that the undercurrent does not always break through in a way that particularly disturbs the mental makeup or general life of the patient. Such a case was a woman, about fifty years of age, now under his care, who was first seen by him when she was forty years old. She was married and the mother of two healthy children. About fifteen years before he first saw her she had developed delusions of a certain kind of persecution—that when she went out on the streets people made remarks about her, trying to annoy her and to injure her. She had these delusions throughout her married life and during her pregnancies. She was a good mother, however, and to most people who knew her she remained a good, kindly woman, about whose mental condition no one had suspicions except her husband, some members of her family, and Dr. Dana. She was probably preserved from a general paranoiac state by the fact that she was able to stay in the house and keep away from sources of irritation. He had had under observation also a man, now forty years old, who had been engaged in business all his life. For fifteen or twenty years this patient had had similar delusions of persecution—that the police and detectives were after him and that attempts were being made to watch him. But this undercurrent delusion never broke through except in one little spot in his brain. One or two of his children developed dementia præcox at the age of sixteen. Such very limited types of paranoia certainly lent themselves to treatment by instruction and by careful selection of environment, which was all essential. As to the general correctness of Dr. Hoch's analysis there could be no question.

Dr. Maurice C. Ashley of Middletown, N. Y., agreed with Dr. Hoch in the main, but he questioned whether the therapeutic talks with paranoiacs would accomplish very much as a curative measure. In his experience there had been no such beneficial results. He recalled one paranoiac who, for ten years, had believed that he had been giving him poison. At first the patient was inclined to retaliate; he threatened, and made definite efforts to take the life of the doctor's children. The man had some

somatic symptoms which he himself attributed to the poison which he thought had been given him. He still has the delusions, but no longer attempts to execute his threats. Another patient, a woman, for eight years had believed that he had been turning an electric current upon her for the purpose of annoying her. Every argument had been used to convince her that this was impossible, but without effect. As the disease progresses the reason of such patients becomes enfeebled and less active, and while they continue to have their delusions they become accustomed to them and cease to react much to them.

Dr. William Hirsch thought that in forming a definite opinion concerning the cases analyzed by Dr. Hoch, it must first be determined whether one had to deal with genuine paranoia, or with a paranoical state of another disease. Genuine paranoia is always a congenital and not an acquired disease, although the true paranoical symptoms often do not manifest themselves during the earlier part of life. But there is always a congenital condition, a constellation of mental factors, which not only predisposes to, but which necessarily develops, at some time of life, such a combination as to produce that mental condition known as paranoia. When such a point in any given case would be reached cannot be determined in advance, but we are, in most cases, able to predict the development of a true paranoia. Various conditions, such as environment, worry, etc., might have something to do with it, at least with a premature manifestation of the condition. He did not believe, however, that in any given case anything could be done to prevent the manifestation of the paranoical condition, even though it were recognized that the development of such a condition existed. This opinion was not based merely on theory. In his practice he had had children brought to him whose parents realized that they were a little peculiar, nothing more, but whom he recognized as abnormal individuals who in later life would become paranoiacs. In such of these cases as he had been able to follow for ten or fifteen years he had found that they developed genuine paranoia in spite of all the precautions which had been taken. He had warned the mother not to let the child have any impressions which would stimulate the imagination or fancy of the child, not to let it read any fiction, to guard it against any undue emotions; all this was carried out with the greatest care. But at some time in life, generally after an unusual emotion, such as falling in love, slight business troubles—something which otherwise would be of no importance—would develop a true paranoia. A normal individual, normal from the start, would never develop paranoia. A normal individual might develop melancholia, or some other acute disease, but never paranoia. When he said one must differentiate between types he meant cases in which there was genuine paranoia and those in which there was a paranoical state. The paranoical state might occur in a great many psychoses. He had seen such a case lately. A man of sixty years of age, a good business man, perfectly normal all his life, suddenly developed a paranoical condition; he had delusions and hallucinations, imagined there was a conspiracy against him, that his neighbors tried to kill him, etc. After remaining in this condition for nine months he gradually became demented. He is still living, and is suffering from a condition of general arteriosclerosis. The case could be defined as dementia senilis, but not as paranoia.

Dr. P. C. Knapp of Boston thought it a mistake always to regard delusions of persecution, with hallucinations of one form or another, as constituting paranoia, and that we should be guarded in speaking of such conditions as paranoiac states. He agreed entirely with Dr. Hirsch's opinion that true paranoia, while not a congenital condition, is dependent upon a congenital malarrangement, so to speak, of the brain. Tanzi had taken the same position, viz., that, whereas other forms of mental disease might be spoken of as true diseases, paranoia was not a disease, but a morbid congenital state which, later in life, under the influence of various factors, might develop into typical paranoia with hallucinations and delusions. He thought that the "undercurrent" did not always "break through." In this connection he cited the case of a woman who, for years had had a limited type of delusion. She had lived a secluded, narrow life in one of the smaller New England cities; for many years she had been active in the care of her household and family and in church work; she had been trained in the old New England habit of keen theological discussion and argument, and for many years she had had the very definite idea that she had been excommunicated from the church. In the main the idea had been suppressed, many of her church associates did not know of it, and those who did kept it secret. The idea existed for many years without going on to any real mental disturbance. Cases were not uncommon in which the delusions occupied a limited field in the consciousness and affected but little the conduct. With a true paranoiac, however, he questioned very much the real importance of any emotional stress, or of any psychical ideas as influencing materially the genesis of the disorder. They might influence the development in so far as changes in modern belief influence the character of delusions. As Dr. Hirsch had suggested, it was impossible to protect these patients from all influences that might give rise to the condition. Not infrequently delusions of persecution developed in normal individuals in connection with hallucinatory conditions having a distinctly physical basis. He had recently seen such a case, a man with well systematized delusions on an alcoholic basis, derived largely from tactile disturbances, which proved to arise from the paresthesias of a very mild alcoholic neuritis.

Dr. Pierce Clark was of the opinion that the cases cited by Dr. Hoch might be called paranoid states rather than typical or true paranoia. The therapeutic suggestions outlined would be of undoubted value in these paranoid states. During the past three years he had been treating several cases by analyses and talks, and the method had been very advantageous. He thought the method was of little use in true paranoia, as the mental state was too fixed; his experience in asylum service had proved this fact to his entire satisfaction.

Dr. Swepson J. Brooks of Harrison, N. Y., was very glad to know of the success Dr. Hoch had had with therapeutic talks. He had tried this plan and found it productive of results in many cases, but the patients would relapse into the old condition after being released from institutions. He presumed that Dr. Hoch had reference in his paper to simple paranoid states. The question of paranoia was a hard one to go into, and sometimes one almost concluded that paranoia and paranoid states were the same, only differing in degree. The forcing of patients to do things, as suggested by Dr. Hoch, was often neglected. He had in mind two cases in which it certainly had a very salutary effect. One case was a woman, forty-five years of age, who had delusions of persecution. She was put in a very quiet hall. She complained that she was merely brought to the place to be put in jail, that there were no sick people there, and that she would like to see some sick people. She was allowed to see some sick patients; the next morning she was convinced, and she got well. That was four years ago and she had remained well since. The other case was of the manic-depressive type. The patient confessed after her recovery that her family physician had had to force her to take medicine, that he would stand her up against the wall and knock her head against it if she did not take the medicine, and that she believed his method did good.

Dr. Smith Ely Jelliffe said that Dr. Hoch's paper had offered glimpses into a large and but partly explored territory. To him, four different trends of thought were

suggested, all of which were the subjects of much investigation. In the first place, the importance of the study of the mental development of the child was emphasized. The work of Weygandt, on Abnormal Children; of Koch, on Pathological Inferiority; of Hall, in his masterly work on Adolescence; and of Sommer, on Character and Personality, were instances in point as to the activity of these lines of investigation. As to the psychogenic origin of certain types of delusions, Dr. Jelliffe was in accord with Dr. Hoch. He spoke of the help that might come from the literary side, as evidenced by the stories of Henry James, "The Turning of the Screw," and "The Two Magics"; Weir Mitchell's "Constance Trescott," and Ansty's "Statement of Stella Maberly." In all these this type of delusion formation is beautifully brought out, with great literary charm, if not with scientific pedantry. Therapeutically, he deemed Dr. Hoch's paper as stimulating, and he himself regarded certain phases of the subject with optimism. Paranoia, he said, was too large a term to use in a general blanket manner. While it is true that little can be accomplished by the most tactful of psychotherapeutic conversations in chronic lunatics who have been in the asylums for years, yet the important factor in the whole problem is to recognize the beginning stages, before the delusional ideas have become too firmly crystallized. Greater success had not been attained because the psychogenic origin of many delusional states had not been sufficiently understood. It required a rare tact to work on these patients, and the outlines given by Dubois, Dejerine, and Oppenheim were but the beginnings of a scientific psychotherapy which for some time had been grasped at by pseudoscientists. Dr. Jelliffe desired to rank himself with those who saw a hopeful outlook for the amelioration, if not cure, of certain cases of dementia præcox, and of the paranoid states, by early and intelligent psychotherapy.

Dr. George H. Kirby had been interested of late in the management of paranoic states along the lines suggested by Dr. Hoch, and thought that much could be accomplished in this way toward the correction of morbid trends. Dr. Hoch's work was particularly important in regard to the study of delusions in general. Such a method of analysis opened the way to an understanding of certain mechanisms which heretofore had been practically inaccessible.

Dr. Hoch, in closing the discussion, stated once more that what he wished to bring out was the fact that certain paranoiac states were produced by purely mental causes, *i.e.* by conflicts and unhygienic ways of dealing with them, and that they were more or less amenable to treatment early in the course, but that naturally he did not mean to claim that old cases of paranoia could thus be influenced. It was necessary in order to help such cases that one could still get at the root of things and explain to the patient the genesis of his delusions and train him to healthy mental habits. The criticism that his cases were not cases of typical paranoia, he could not quite understand, because he was unable to see where the line could be drawn between cases such as his and cases of so called typical paranoia. Again, to say that paranoia was caused by heredity was an exceedingly unsatisfactory way of stating the situation because it did not mean enough. He had claimed that some paranoiac states were due to an unhealthy dealing with conflicts. Such an unhealthy dealing may be due to tendencies which were more or less inherited, but that it was time to make an attempt at determining what these tendencies were, because the mere statement of heredity was absolutely barren, that the same may be said about the statement which had been made that paranoia was due to a congenital malarrangement. If Dr. Hirsch said that a normal individual would not develop paranoia, this was doubtless true, if by normal individual was meant one who had perfectly healthy mental habits.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS

Oklahoma Territorial Medical Examining Board.

December 20, 1906.

ANATOMY.

1. Describe the femur, its articulations and what portions of it are not covered by periosteum.
2. Give the number of sutures and fontanelles in the skull, and by what and how is each formed?
3. Where is the reticular elastic cartilage found, and locate the coracoid and acromion process.
4. Give origin, insertion and uses of the following muscles: trapezius, supinator-longus, latissimus-dorsi, internal-oblique and the gracilis.
5. Describe the right ventricle of the heart, give its capacity and name the valves connected with the ventricle.
6 and 7. Locate and give uses of the Fallopian and Eustachian tubes, lacrymal duct, prostate gland, crystalline lens, antrum of Highmore, clitoris, spleen, ureter, suprarenal capsule, the abdominal and thoracic cavities.
8. Give origin and branches of inferior dental and the mastoid arteries.
9. Name the bones, main muscles, arteries, nerves, and other fascia gone through in amputating leg at the thigh.
10. Enumerate the changes the bones of the lower jaw undergo in very aged persons.

PHYSIOLOGY.

1. Define special and comparative physiology.
2. Name the digestive juices and the organs that produce them, and give their actions on bread, eggs, milk, and butter.
3. Name the ferments found in the digestive juices and give source of glycogen and dextrose.
4. Give the composition of normal and healthy urine, and of urine in a case of diabetes mellitus.
5. Give structure and functions of the liver and kidneys.
6. Where and how is urea formed, and give cause of rigor mortis.
7. How do the products of digestion find their way into the blood?
8. What would be the results of eating in excess of albuminous, oleaginous, and farinaceous foods.
9. Give the changes of the air in respiration and the respiratory changes in the blood.
10. Name the heat-producing tissues of the body.

CHEMISTRY AND URANALYSIS.

1. Define (a) chemistry, (b) matter, (c) atom, (d) molecule, (e) element.
2. Differentiate between chemical and physical changes in matter and illustrate.
3. Define chemism, atomic weight, specific gravity.
4. Name the alkaline elements; give symbols for the gaseous elements.
5. Name two *ic* and two *ous* salts of mercury and give formula.
6. Give common name, formula, and uses of four zinc salts.
7. Give common names of following formula, CO_2, H_2O_2, $FeSO_4$, NACl, $HgCl_2$.
8. Give chemical name and formula of borax, marble, blue vitriol, Rochelle salts, oil of vitriol.
9. Discuss arsenic, mention its properties, compounds, and uses.
10. Name four normal, and give in detail tests for four abnormal constituents of urine.

MATERIA MEDICA AND THERAPEUTICS

1. Give therapeutics of quinine, iron, strychnine, digitalis
2. Give dosage of remedies you use in pneumonia, membranous croup, typhoid fever.

It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.

3. Give dosage and indications for four remedies you use in jaundice, rheumatism, malarial fever.
4. Give habitat, preparation, dosage, and uses of twelve leading remedies you carry in your medicine case.
5. Give indications that guide you in the use of each of the remedies you mention in answer to previous question.

PHYSICAL DIAGNOSIS AND PATHOLOGY.

1. Name the topographic lines of the thorax, outline and locate the heart's area of absolute dullness and the upper border of the normal liver.
2. Describe the usual course of parenchymatous nephritis, also interstitial nephritis. In what class of patients is the latter most frequently observed? How would you differentiate one from the other?
3. Under what conditions would occur a physiological leucocytosis? Under what pathological conditions would you expect to find a polymorphonuclear leucocytosis? A lymphocytosis?
4. Designate which component part of the spinal cord is involved in locomotor ataxia and describe the metamorphosis of structure characterizing the pathological process.
5. What pathological changes occur in cirrhosis of the liver?
6. Give differential diagnosis between septicemia and pyemia.
7. Give the principal diagnostic points of difference between mitral regurgitation and aortic regurgitation.
8. Give differential diagnosis between scarlet fever and erysipelas in their early stages.
9. Give differential diagnosis between phlebitis and lymphangitis.
10. Give differential diagnosis between variola and varicella.

PRACTICE OF MEDICINE.

1. What are the intrinsic and extrinsic causes of dilatation of the heart with broken compensation? How would you treat the latter condition when very extreme?
2. Describe Bell's paralysis, Cheyne-Stokes respiration.
3. What are the early manifestations of pulmonary tuberculosis and give your method of management in a case.
4. Give the etiology, pathology, symptoms, treatment, dietetic, medicinal, hygienic and prophylatic of enterocolitis.
5. Give symptoms and treatment of acute ptomaine poisoning.
6. Give symptoms and treatment of pulmonary edema.
7. Give cause, symptoms, and treatment of herpes zoster.
8. Name one infectious and one contagious disease and give diagnosis of the diseases named.
9. Describe a case of uremic coma and your treatment for same.
10. Give symptoms and diagnosis and treatment of follicular tonsillitis.

OBSTETRICS AND GYNECOLOGY.

1. Define menstruation, give duration, age of appearance and cessation, and abnormal manifestations.
2. Name and give measurements of female pelvis; of fetal head.
3. Give briefly the anatomy of uterus, ovaries, placenta.
4. Give theory of menstruation; of conception.
5. Name the three important forms of hemorrhage met with in obstetric practice and give causes and treatment of each.
6. Define ectopic gestation, caput succedaneum, vitellus, amnion.
7. Into what stages is labor divided, and where does each stage begin and end?
8. How would you treat mastitis, puerperal eclampsia?
9. Give in detail technique of repairing laceration of perineum involving floor of vagina.
10. How would you prepare your patient for delivery and yourself for attendance in a case of labor?

SURGERY.

1. Diagnose, give prognosis and treatment of the following diseases: Erysipelas, rhinitis, pyemia, and traumatic or surgical fever.
2. Describe and differentiate the following, viz.: Concussion and contusion, an incised, punctured, lacerated, gunshot and poisoned wounds.
3. Give signs of fracture, dislocation, reduction, and the process of repair.
4 and 5. Give differential diagnosis and treatment of fracture of the surgical neck, capsular fracture of the femur, and a case of hip joint disease.
6. Define and give treatment of tinea-versicolor, tinea-circinatis, herpes zoster, and scabies.
7. How would you diagnose? Give prognosis and treatment of septicemia, pyemia, and septic-pyemia.
8. Give differential diagnosis between coma the result of an injury and that produced by opium poisoning, alcoholic intoxication, apoplexy, and uremic poisoning.
9. Describe and give treatment of hydrocele, hypospadias, varicocele, hematocele, and epispadias.
10. Give symptoms, prognosis, and technique of the operation for an ectopic gestation, or an extrauterine pregnancy.

MEDICAL JURISPRUDENCE.

1. In a medicolegal sense, what constitutes a dying declaration and what is necessary to make it evidence in a court of justice, and how should it be taken?
2. Determine in a case of supposed infanticide whether the child was still-born or killed after birth.
3. What are the symptoms and treatment of corrosive sublimate poisoning?
4. At what period will a body float after being drowned?
5. In a case of opium poisoning, what are the post-mortem symptoms?
6. What is malpractice?
7. How would you treat a patient suffering from poisoning by coal gas?
8. What are the symptoms and treatment for poisoning by the castor bean and what is considered a lethal dose?
9. What are symptoms of poisoning by wood alcohol and treatment for same?
10. Give symptoms and treatment for poisoning by turpentine taken internally.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

OKLAHOMA TERRITORIAL MEDICAL EXAMINING BOARD.

December 26, 1906.

ANATOMY.

3. Reticular elastic cartilage is found in the external ear, in the Eustachian tube, in the epiglottis, in the cartilages of Santorini and of Wrisberg in the larynx.

9. *Bone*: the femur. *Main muscles*: rectus femoris, vastus externus, crureus, vastus internus, biceps, semitendinosus, semimembranosus, adductor magnus, gracilis, adductor longus, sartorius. *Arteries*: femoral, profunda femoris. *Nerves*: great sciatic, small sciatic, external cutaneous, middle cutaneous. *Fascia*: superficial fascia, fascia lata.

10. "The changes which the lower jaw undergoes after birth relate (1) to the alterations effected in the body of the bone by the first and second dentitions, the loss of teeth in the aged, and the subsquent absorption of the alveoli; (2) to the size and situation of the dental canal, and (3) to the angle at which the ramus joins with the body.

"*At birth* the bone consists of lateral halves, united by fibrous tissue. The body is a mere shell of bone, containing the sockets of the two incisor, the canine, and the two temporary molar teeth, imperfectly partitioned from one another. The dental canal is of large size, and runs near the lower border of the bone, the mental foramen opening beneath the socket of the first molar. The angle is obtuse (175 degrees), and the condyloid portion nearly in the same horizontal line with the body; the neck of the condyle is short, and bent backward. The coronoid process is of comparatively large size, and situated at right angles with the rest of the bone.

"*After birth* the two segments of the bone become joined at the symphysis, from below upward, in the first year; but a trace of separation may be visible in the beginning of the second year near the alveolar margin. The body becomes elongated in its whole length, but more especially behind the mental foramen, to provide space for the three additional teeth developed in this part. The depth of the body becomes greater, owing to increased growth of the alveolar part, to afford room for the fangs of the teeth, and by thickening of the subdental portion, which enables the jaw to withstand the powerful action of the masticatory muscles; but the alveolar portion is the deeper of the two, and, consequently, the chief part of the body lies above the oblique line. The dental canal after the second dentition is situated just above the level of the mylohyoid ridge, and the mental foramen occupies the position usual to it in the adult. The angle becomes less obtuse, owing to the separation of the jaws by the teeth. (About the fourth year it is 140 degrees.)

"*In the adult* the alveolar and basilar portions of the body are usually of equal depth. The mental foramen opens midway between the upper and lower border of the bone, and the dental canal runs nearly parallel with the mylo-

hyoid line. The ramus is almost vertical in direction, and joins the body nearly at right angles.

"*In old age* the bone becomes greatly reduced in size; for with the loss of the teeth the alveolar process is absorbed, and the basilar part of the bone alone remains; consequently, the chief part of the bone is *below* the oblique line. The dental canal, with the mental foramen opening from it, is close to the alveolar border. The rami are oblique in direction, the angle obtuse, and the neck of the condyle more or less bent backward." (Gray's *Anatomy.*)

PHYSIOLOGY.

1. *Special Physiology* treats of the nature and function of particular organs, as the lungs, heart, etc.

Comparative Physiology treats of the study and comparison of the physiology of different animals (or plants).

2. The digestive juices are: (1) Saliva, produced by the salivary glands (parotid, submaxillary and sublingual). (2) Gastric juice, produced by the stomach. (3) Pancreatic juice, produced by the pancreas. (4) Succus entericus, produced by the small intestine. (5) Bile, produced by the liver.

Bread consists of proteid, fat, and carbohydrate; *eggs* of proteid and fat; *milk* of proteid, carbohydrate, and fat; *butter* of fat, and a little proteids. They all contain water.

For the effect of the digestive juices on these constituents, see next answer.

3.—

	Ferment	Function
Saliva	Ptyalin	Changes starch into dextrin and sugar.
Gastric juice	Pepsin	Changes proteids into proteoses and peptones in an acid medium.
	A curdling ferment	Curdles the casein of milk.
Pancreatic juice	Trypsin	Changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; in an alkaline medium.
	Amylopsin	Converts starches into maltose.
	Steapsin	Emulsifies and saponifies fats.
	A curdling ferment	Curdles the casein of milk.

Glycogen is formed in the liver, chiefly from the carbohydrates of the food, and also from the proteids.

Dextrose is derived from the digestion of starch and cane sugar.

4. The following table (from Dunglison's *Medical Dictionary*) gives the average composition of normal urine:

	(Parts in 1000.)		Voided Per Day	
			Grains	*Grams*
Water	950.00			
Urea	28.00		520.80	35.00
Uric acid	0.60	Organic	11.16	0.75
Hippuric acid	0.35	matter,	6.51	0.44
Creatinin	0.65	37.60	12.09	0.81
Extractives	8.00		148.80	10.00
Sodium chloride	8.00		148.80	10.00
Phosphoric acid	2.00		37.20	2.50
Sulphuric acid	1.25	Inorganic	23.45	1.56
Lime (CaO)	0.25	matter,	4.65	0.31
Magnesia (MgO)	0.30	12.40	5.58	0.37
Potash (K_2O) and soda, (Na_2O)	0.60		11.16	0.75
Total	1000.00		930.20	62.49

In diabetes mellitus the total quantity voided is greatly increased, the specific gravity is higher, and it contains amounts of sugar varying from an ounce to two pounds per day; the urea and uric acid are also increased.

5. The functions of the *liver* are: (1) The secretion of bile, (2) the formation of glycogen, (3) the formation of urea and uric acid, (4) the manufacture of heat, and (5) the conversion of poisonous and harmful into inert material.

The functions of the *kidney* are: (1) The secretion of urine, and (2) the secretion of an "internal secretion."

6. Urea is formed in the liver, from proteids, by a process of hydrolysis and of oxidation.

Rigor mortis is caused by the lowering of the body temperature and the coagulation of the albumin of the muscles.

7. By absorption through the portal vein and the lacteals. The portal vein absorbs the greater part of the water, salts, peptones, sugar, and soaps, and a trace of fats. The lacteals absorb the greater part of the fat, some water, and peptones, and a trace of salts and sugar.

8. "*Albuminous food* in excess promotes the arthritic diathesis, manifesting itself as gout, gravel, etc. *Oleaginous food* in excess gives rise to the bilious diathesis. *Farinaceous food*, when long continued in excess, favors the rheumatic diathesis by the development of lactic acid."—(Brubaker.)

9. The changes of the air in respiration are shown in the following table:

	Inspired Air	Expired Air
Oxygen	21 per cent.	16.0 per cent.
Nitrogen	79 per cent.	79 per cent
Carbon dioxide	0.04 per cent.	4.4 per cent.
Other gases	Rare	Often present.
Watery vapor	Variable	Saturated.
Temperature	Variable	That of body.
Volume	Varies	Diminished.
Bacteria	Always present	None
Dust	Always present	None

The respiratory changes in the blood: (1) In the *lungs*, the blood is changed in color, gains oxygen, loses carbon dioxide, loses heat, and loses watery vapor. (2) In the *capillaries of the body*, the blood loses oxygen and receives carbon dioxide.

10. The heat-producing tissues of the body are: (1) The muscles, during contraction; (2) the secreting glands, during functional activity; (3) the brain, during mental activity; (4) all the tissues of the body are capable of adding to the total amount of body heat, but the first three named are the chief contributors.

CHEMISTRY AND URANALYSIS.

1. *Chemistry* is that branch of science which treats of the composition of substances, their changes in composition, and the laws governing such changes.

Matter is that which occupies space, or is evident to one or more of the senses.

An atom is the smallest quantity of an element that can enter into chemical action.

A molecule is the smallest quantity of any substance (element or compound) that can exist in a free state.

An element is a substance which cannot by any known means be split up into two or more dissimilar substances.

2. "A bar of soft iron may be made to emit light when heated, or sound when caused to vibrate, or magnetism when under the influence of an electric current. Under the influence of these *physical forces* the iron suffers no change in composition, and, on cessation of the action of the inciting force the iron returns to its original condition. But if the iron be heated in an atmosphere of oxygen, both the iron and a part of the oxygen disappear, and a new substance, a new chemical species, is produced, having properties of its own, different from those of either the iron or the oxygen. In this case there has been *chemical action*, causing change of composition, as the new substance contains both iron and oxygen. The result of such action is, moreover, permanent, and the new product continues to exist, until modified by some new manifestation of chemical action."—Witthaus' *Manual of Chemistry.*)

3. *Chemism* is the force which holds together the atoms in a molecule.

Atomic weight is the weight of an atom of an element as compared with the weight of an atom of hydrogen.

Specific gravity is the weight of a substance compared with the weight of an equal volume of another substance taken as a standard.

4. The alkaline elements are: (1) The alkali metals: lithium, sodium, potassium, rubidium, cesium, and (2) the metals of the alkaline earths: calcium, barium, strontium.

The symbols of the gaseous elements are: H, O, F, Cl, N, He, Ne, A, Kr, and Xe.

5. Mercuric chloride, $HgCl_2$; mercuric oxide, HgO; mercurous chloride, Hg_2Cl_2; mercurous oxide, Hg_2O.

6. (1) Zinc chloride, butter of zinc, $ZnCl_2$, used as a caustic, disinfectant, antiseptic, and for embalming.

(2) Zinc sulphate, white vitriol, $ZnSO_4$, used as a styptic, astringent, and emetic.

(3) Zinc oxide, tutty, ZnO, used in the arts as a pigment.

(4) Zinc carbonate, calamine, $ZnCO_3$, used as a dusting powder and astringent.

7. CO_2, common name carbonic acid; H_2O_2, common name peroxide of hydrogen; $FeSO_4$, common name green vitriol, or copperas; NaCl, common name table salt; $HgCl_2$, common name corrosive sublimate.

8.—

	Chemical Name	Formula
Borax	Disodic tetraborate	$Na_2B_4O_7$
Marble	Calcium carbonate	$CaCO_3$
Blue vitriol	Cupric sulphate	$CuSO_4$
Rochelle salts	Potassium sodium tartrate	$KNaC_4H_4O_6$
Oil of vitriol	Sulphuric acid	H_2SO_4

9. Arsenic is an element, with atomic weight of 75, molecular weight 300, valence three or five; the molecule contains four atoms. It occurs chiefly in combination in orpiment, realgar, mispickel or iron pyrites. It is a crystalline solid or an amorphous powder, the vapor has an odor of garlic; it is insoluble in water; it unites with nascent hydrogen; it burns in oxygen; on being heated in air it is converted into arsenic trioxide, As_2O_3. It is used in the manufacture of shot, flypapers, fireworks, and pigments. Its chief compounds are: Hydrogen arsenide, arsenic trichloride, arsenic trioxide, arsenic pentoxide, arsenous acid, arsenic acid, arsenic bisulphide, arsenic trisulphide, arsenic pentasulphide.

10. Four normal constituents of urine: Water, urea, uric acid, and sodium chloride.

Test for (1) *Albumin*: The urine must be perfectly clear. If not so, it is to be filtered, and if this does not render it transparent it is to be treated with a few drops of magnesia mixture, and again filtered. The reaction is then observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral, or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3.

Test for (2) *Sugar*: Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 cc. of the alkaline liquid in two test tubes. To one test tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color.

Test for (3) *Acetone*: Add a few drops of a freshly prepared solution of sodium nitroprussid, and then KHO or NaHO solution, when, in the presence of acetone, the liquid is colored ruby red, and on supersaturation with acetic acid changes to purple.

Test for (4) *Indican*: The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1000 of ferric chlorid, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.

—(From Witthaus' *Essentials of Chemistry.*)

PHYSICAL DIAGNOSIS AND PATHOLOGY.

1. The topographic lines of the thorax are *vertical lines* and *horizontal lines*, as follows:

"The *vertical lines* are from front to back: (1) The *midsternal line* and its prolongation upward. (2) The *sternal line*, corresponding to the lateral border of the sternum. (3) The *parasternal line*, midway between (2), and (4) The *mamillary or nipple line*, which, even in the male thorax, does not always pass through the nipple, but may be more exactly defined as a vertical line dropped from the center of the clavicle. (5) The *anterior axillary line*, drawn through the point at which the great pectoral muscle cleaves the chest when the arm is raised sidewise to a horizontal line. (6) The *middle axillary line*, drawn through midway between (5) and (7) The *posterior axillary line*, which is drawn through the point at which the latissimus dorsi leaves the chest, the arm being raised as in (5). (8) The *scapular line*, drawn through the inferior angle of the scapula. (9) The *midspinal line*.

"The *horizontal lines* are, in front and at the side, from above downward: (1) A line running from the cricoid cartilage to the outer end of the clavicle. (2) The line of the clavicles. (3) A line through the third chondrosternal articulation. (4) A line through the sixth chondrosternal articulation. Posteriorly they are (5) A line through the spines of the scapulæ. (6) A line through the inferior angles of the scapulæ. (7) A line through the spine of the twelfth dorsal vertebra."—(Butler's *Diagnostics of Internal Medicine.*)

3. A *physiological leucocytosis* is found: In the newborn, after parturition, after exertion, after a cold bath or massage, during pregnancy, and during digestion.

A *polymorphonuclear leucocytosis* is found in all acute inflammatory diseases, in certain of the acute infectious diseases, and accompanying the cachexia of malignant disease.

A *lymphocytosis* is found in lymphatic leukemia, and sometimes in sarcoma, and whooping cough.

4. In locomotor ataxia the posterior columns of the spinal cord and the posterior nerve roots are involved.

The process is destructive and progressive; it is not a simple wasting, although the nerve fibers are atrophied, but it is characterized by irritation, changes in the axis cylinders, overgrowth of the connective tissue, and sometimes congestion. The spinal ganglia may be affected; the membranes over the affected parts are adherent and opaque.

6. *Septicemia* begins with a rigor, followed by a rise of temperature up to about 104° F., which remains constant. The pulse is weak and progressively rapid; there is anorexia and constipation, which is followed by diarrhea; the urine contains albumin; the temperature may become subnormal. There are no repeated rigors and no secondary (metastatic) abscesses.

Pyemia begins with a rigor, which may last for half an hour, and is repeated every one or two days. The temperature rises as in septicemia, but rapidly falls, and at the same time the patient suffers a profuse perspiration. The pulse is weak and rapid; there is anorexia; and there may be delirium, with jaundice and signs of abscesses in the lungs, joints, etc. In pyemia there are repeated rigors and secondary abscesses.

7. In *mitral regurgitation* there is a systolic murmur, heard loudest at the apex, transmitted toward the left axilla, and often heard at the angle of the left scapula. The heart is enlarged.

In *aortic regurgitation* there is a diastolic murmur, heard loudest at the second interspace, transmitted down the sternum. The left ventricle is hypertrophied. There will also be present Corrigan's pulse, and pulsating arteries in the neck.

8. In *erysipelas* the rash is local; it is not punctate; the surface of the skin is smooth and edematous; bullæ are often present, and have a well-defined margin; the skin of the affected part is burning, tender, tense, and painful.

9. *Phlebitis* is apt to begin in a varicose vein; the vein is felt as a hard cord; edema is present, and the skin has a dusky hue.

Lymphangitis generally begins in a sore, the neighboring lymph glands are involved, it tends to spread in a spiral line, and the skin has a rosy tint, which appears before the edema.

10. (1) Very young children are attacked with varicella, whereas variola usually shows itself in adults. (2) Vaccinated children readily take varicella; not so variola, even in the modified form. (3) Children who have had varicella may contract variola, even soon afterwards; or the two diseases may co-exist. (4) Varicella is non-inoculable, whereas variola is notoriously so. (5) The eruption of varicella appears in twenty-four hours; that of variola not till the third day. (6) The febrile symptoms continue after the eruption appears in varicella; those of variola subside. (7) In varicella the spots come out in successive crops; this is never seen in variola. (8) The spots in varicella are unilocular, and collapse on being punctured; the spots in variola are multilocular, and do not collapse on being punctured. (9) In varicella the eruption is very irregular, and appears over the body generally; in variola it appears in groups of threes and fives, and is always seen on the limbs. (10) The papule in varicella is soft, and disappears on stretching the skin; in variola it is hard and shotty, and does not disappear on stretching the skin. (From J. W. Moore's work on *Variola and Varicella.*)

PRACTICE OF MEDICINE.

2. In *Bell's paralysis* "the muscles of the face being all powerless, the countenance acquires on the paralyzed side a characteristic, vacant look, from the absence of all expression; the angle of the mouth is lower, and the paralyzed half of the mouth looks longer than that on the other side; the eye has an unmeaning stare, owing to the paralysis of the orbicularis palpebrarum. All these peculiarities increase the longer the paralysis lasts, and their appearance is exaggerated when at any time the muscles of the opposite side of the face are made active in any expression, or in any of their ordinary functions. In an attempt to blow or whistle, one side of the mouth and cheeks acts properly, but the other side is motionless, or flaps loosely at the impulse of the expired air; so, in trying to suck, one side only of the mouth acts; in feeding, the lips and cheek are powerless, and, on account of paralysis of the buccinator muscle, food lodges between the cheek and the gums."—(Kirkes' *Physiology.*)

In *Cheyne-Stokes respiration* the respirations gradually increase in volume and rapidity until they reach a climax, when they gradually subside, and finally cease for from ten to forty seconds, when the same cycle begins again.

3. The early manifestations of pulmonary tuberculosis

are: (1) *Physical signs*: Deficient chest expansion, the phthisical chest, slight dullness or impaired resonance over one apex, fine moist râles at end of inspiration, expiration prolonged or high pitched, breathing interrupted. (2) *Symptoms*: General weakness, lassitude, dyspnea on exertion, pallor, anorexia, loss of weight, slight fever, and night sweats, hemoptysis.

OBSTETRICS AND GYNECOLOGY.

2. The pelvic diameters are easily remembered from the following table:

	Antero-posterior	Oblique	Transverse
Brim	4 inches.	4½ inches.	5 inches.
Mid-plane	4½ "	4½ "	4½ "
Outlet	5 "	4½ "	4 "

The fetal head has the following diameters: Occipito-frontal, occipito-mental, bitemporal, biparietal, suboccipito-bregmatic, trachelo-bregmatic, and mento-bregmatic. Of these the occipito-frontal is 4½ inches, the occipito-mental is 5½ inches, and all the others are approximately 3½ inches.

MEDICAL JURISPRUDENCE.

1. Any statement made by a dying person who believes that he cannot recover and that he is, at that very time, in actual danger of death. The statement need not be sworn to; it should be voluntary and sincere; and it is admissible as evidence in a court if the individual dies. An official or someone else should take down the deposition in the exact words of the patient, who should, if possible, sign the declaration.

3. *Symptoms* of poisoning by corrosive sublimate are: A burning pain in the mouth, pharynx, and stomach; the mouth and tongue are white; the vomitus is white, with shreds of mucous membrane, and tinged with blood; there may be bloody stools, also salivation.

Treatment: The antidote is white of egg, but too much must not be given at one time; this should be followed by an emetic.

4. "The time at which the bodies of the drowned will float varies with the temperature of the air, the water, the age, sex, and corpulence. As the human body is slightly heavier than water, it must remain submerged until it becomes lighter through the development of gases of putrefaction. Hence, in summer the body may rise within twenty-four hours. In salt water it will float sooner than in fresh; very fat bodies float sooner than lean ones; the bodies of women and those of young children sooner than those of men. Hence, in infanticide by drowning, the infant's body speedily rises to the surface."—(Reese's *Medical Jurisprudence.*)

5. "The postmortem appearances are neither certain nor characteristic. There is usually some fullness of the vessels of the brain; occasionally, extravasation of serum into the ventricles, very rarely of blood. Sometimes there is congestion of the lungs and other vascular organs. The blood is apt to be fluid. The stomach and bowels may be perfectly natural in appearance. The odor of opium may be observed in opening the body. It is hence impossible to diagnosticate a case of opium poisoning from the postmortem appearance exclusively."—(Reese's *Medical Jurisprudence.*)

6. Malpractice is a failure on the part of a medical practitioner to use such skill, care, and judgment in the treatment of a patient as the law requires; and thereby the patient suffers damage. If due to negligence only, it is *civil* malpractice. But if done deliberately, or wrongfully, or if gross carelessness or neglect have been shown, or if some illegal operation (such as criminal abortion) be performed, it is *criminal malpractice.*

7. The patient should be removed to pure air; inject normal saline solution; the patient should be bled; artificial respiration may be necessary; inhalations of oxygen under pressure have been recommended. The body temperature should be maintained by external heat

8. The *symptoms* are: Vomiting, purging, collapse; the secretions (including the urine) are suppressed, and the pupils may be dilated.

Treatment: Emetics, lavage, and mucilaginous drinks, with opium to relieve pain.

Lethal dose: Three beans have proved fatal.

9. *Symptoms*: Headache, vertigo, blindness, weakness, and neuritis.

Treatment: Lavage, and strychnine hypodermically

10. *Symptoms*: Contracted pupils, odor of turpentine on the breath, stertorous breathing, collapse, convulsions, odor of violets to the urine.

Treatment: Lavage, Epsom salts, and mucilaginous drinks, with opium.

BULLETIN OF APPROACHING EXAMINATIONS†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION		
Alabama*	W. H. Sanders, Montgomery	Montgomery	May	1-6
Arizona*	Ancil Martin, Phoenix	Phoenix	July	2
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July	9
California	Chas. L. Tisdale, Alameda	San Francisco	Aug	2
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	2
Connecticut*	Chas. A Tuttle, New Haven	New Haven	July	9
Delaware	I. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W.C.Woodward, Washington	Washington	July	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville	May	15
Georgia	E R. Anthony, Griffin	Atlanta / Augusta	April / May	30 / 2
Idaho	J. L Conant, Jr., Genesee	Boise	October	1
Illinois	J. A. Egan, Springfield	E. St Louis	May	8
Indiana	W T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	—
Kansas	T. E Raines, Concordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	22
Louisiana	F. A. La Rue, 211 Camp St., New Orleans	New Orleans	May	9
Maine	Wm. J. Maybury, Saco	Augusta	July	9
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	—
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May	14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	W S Fullerton, St. Paul	St. Paul	June	4
Mississippi	J. F. Hunter, Jackson	Jackson	May	14
Missouri	J. A. B. Adcock, Warrensburg	St. Louis / Kansas City	—	—
Montana*	Wm. C. Riddell, Helena	Helena	October	1
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May	6
N. Hamp're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C.F.Wheelock Univ of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May	21
N. Carolina*	G. T. Sikes, Grissom	Morehead City	May	—
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	June	—
Oregon*	B. E. Miller, Portland	Portland	May	8
Pennsylvania	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June	—
Rhode Island	G. T. Swarts, Providence	Providence	July	4
S. Carolina	W. M Lester, Columbia	Columbia	June	—
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville,	May	—
Texas	T. T Jackson, San Antonio	Austin	April	30
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	7
Vermont	W Scott Nay, Underhill	Burlington	July	9
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne	June	19

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for latest details regarding the examination in any particular State.

West Virginia.—Under the new law which took effect on February 13, 1907, undergraduates are no longer permitted to take the State Board Examinations.

New York and Ohio.—Medical reciprocity no longer exists between these two States.

Fibromyomata in Uteri of Defective Conformation.—Andrea Boni describes an interesting case of fibromyomata in a uterus which had a single cervix with double vagina and fundus. The anomaly of the uterus was not diagnosticated until the examination previous to operation on the fibroids showed a double vagina, and the operation showed a double fundus. There were fibromata of both fundi, an ovarian cyst with a cystic tube on the right, and enlarged adnexa on the left. The cause of this anomaly is unknown, and we must be content to say that there is some force which prevents the union of the two ducts of Müller to form a single fundus at an early period of intrauterine life. The author has collected fifty-eight cases, to which he adds his own. He finds that fibroids occur in malformed uteri most frequently between the ages of thirty-five and forty-five, and they are rare after fifty. They are more frequent in nulipara and bear some relation to the presence of sterility. As uterus bicornis unicollis is the most frequent anomaly fibroids occur most frequently in that form. The symptoms do not differ from those of ordinary fibroids, and the diagnosis of the anomaly is first made at the operation for the removal of the tumor. (*Archivio Italiano di Ginecologia.*

Therapeutic Hints.

Angina Pectoris.—During the attack Barber recommends that amyl nitrite be inhaled at once; a capsule containing three or five minims should be broken in a handkerchief and the vapor inhaled; if this fails to relieve in a minute or two chloroform may be tried, which is best administered on a sponge in a smelling bottle by the patient himself; and for pain which is persistent, morphine, gr. 1-4 hypodermically, is required, which in a feeble patient may be counteracted by an injection of strychnine. At the same time, if at hand, the following stimulant should be taken:

℞ Spirit. ætheris.....mℳ xxx
Spirit. ammonii aromatici.....mℳ xxx
Aquæ camphoræ.....q. s. ad ʒj
Or failing that, fʒss of brandy.

Erysipelas.—The following local application is recommended by Meunier:

℞ Menthol.....gr. xl
Pulv. camphoræ.....gr. x
Olei betulæ.....ʒj
Guaiacol.....mℳ x
Petrolati liq.....ʒiij
Lanolini.....ʒiv
M. S.: Apply locally with slight friction.
—*International Journal of Therapy.*

Burns.—For burns of the third degree Prager uses the following dusting powder:

℞ Iodoform.....ʒi
Acidi borici.....ʒvii
M. S.: Apply locally over the area involved.

For extensive burns Leweson recommends the application of a 6 per cent. solution of aluminum acetate. After twenty-four hours' use of this a powder should replace it:

℞ Zinci oxidi.....ʒii
Bismuthi subnit.....ʒiv
Lycopodii.....ʒi
M. S.: To be applied locally, freely.

For the pain of severe burns Dale advises first a hypodermic injection of morphin and after the initial shock:

℞ Chloral. hydrat.....gr. x
Sodii bromid.....gr. xx-xxx
M. S.: Give in water at a dose, and every three hours until relief is obtained.
—*New York Medical Journal.*

Gonorrheal Rheumatism.

℞ Acidi salicylici.....ʒi
Mentholis.....gr. xv.
Guaiacolis.....ʒss.
Alcoholis.....fʒi
M. S.: To be painted over the affected areas, and the parts covered with cotton and oil silk.
—*Merck's Archives.*

Iron-Lemonade.

℞ Tinct. ferri chlor.....ʒiv
Acidi phosphoric. dil.....ʒvi
Spt. limonis.....ʒii
Syrupi.....ʒvi
M. S.: A dessertspoonful, in water, after meals.
—Goodell.

Dermatitis Venenata.—

℞ Sodii hyposulphit.....ʒi
Menthol.....gr. v
Spir. vini rect.....ʒi
Spir. æth. nit.....ʒi
Aquæ dis.....ad Oi
M. S.: Apply locally.
—*Medical Times and Hospital Gazette.*

Chamomile Enema.—For obstinate postoperative intestinal atony the following is often successful:

℞ Infus. chamomil.....ʒviii
Ol. terebinth rect.....ʒii
Carbo. lig.....ʒii
Aq. menth. pip.....ʒii
M. ft. Enema. S.: Inject warm.

Chapped Skin.—For chapped face or hands, or for sunburn, the following is highly recommended:

℞ Acid acet. dil.....
Glycerin.....āā. ʒi
Bismuth subnit.....q.s. ad. ft. massa.
S.: Apply locally.

Anorexia.—

℞ Tr. nucis vomic.....ʒiv
Ferri et. quin. citrat.....ʒiii
Tr. gent. comp.....ʒi
Vini xerici.....q.s. ad. ʒvi
M. S.: A teaspoonful in water before meals.

Medical Items.

Infantile Asthma and Its Treatment.—Méry, in his discussion of this subject, says that infantile asthma often exists in patients with adenoid vegetations or in those who have repeated colds. In certain cases the coexistence of other manifestations of arthritism have been noted. This affection must be differentiated from capillary bronchitis and from tracheobronchial adenopathy. Cardiac and renal affections must be looked for. The cause of this affection should be searched for and removed. Treatment of the attack consists in the application of moist dressings to the chest. In cases without fever warm applications are preferable.—*Journal de Médicine de Paris.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 19, 1907:

SMALLPOX—UNITED STATES.

			CASES.	DEATHS.
California, San Francisco	Mar.	23-30	1	..
Florida, Duvall Co., Jacksonville	Mar.	30-Apr. 6-13	1&1	Total, 2
Hillsboro County	Apr.	6-13	7	..
Polk County	Apr.	6-13	7	..
Santa Rosa County	Apr.	6-13	6	..
Georgia, Augusta	Apr.	2-9	1	..
Illinois, Chicago	Mar.	30-Apr. 13.	4	..
Galesburg	Mar.	30-Apr. 6..	3	..
Peoria	Mar.	30-Apr. 6..	17	..
Indiana, Indianapolis	Mar.	31-Apr. 7..	4	..
South Bend	Mar.	30-Apr. 6..	2	..
Iowa, Everly	Mar.	30	..	Present
Spencer	Mar.	30	..	"
Kentucky, Louisville	Mar.	28-Apr. 11.	11	..
Louisiana, New Orleans	Mar.	30-Apr. 6..	3	..
Massachusetts, Chelsea	Mar.	30-Apr. 6..	8	..
Haverhill	Mar.	30-Apr. 6..	1	..
Lawrence	Mar.	30-Apr. 6..	27	..
Michigan, Detroit	Mar.	30-Apr. 13.	12	..
Minnesota, Winona	Mar.	30-Apr. 6..	2	..
Mississippi, Natchez	Mar.	23-Apr. 6..	1	..
Missouri, St. Joseph	Mar.	30-Apr. 6..	9	..
St. Louis	Mar.	30-Apr. 6..	4	..
New Jersey, Hoboken	Apr.	6-13	1	..
New York, New York	Mar.	30-Apr. 6..	4	..
North Carolina, Charlotte	Mar.	30-Apr. 13.	2	..
Ohio, Cincinnati	Mar.	29-Apr. 5..	1	..
Cleveland	Mar.	24-Apr. 12.	2	..
Tennessee, Nashville	Apr.	6-13	1	..
Texas, Bell County	Mar.	23-Apr. 6..	206	..
Galveston	Apr.	5	5	..
San Antonio	Dec.	29-Apr. 6..	9	..
Washington, Spokane	Mar.	30-Apr. 6..	6	1 Imp't'd
Wisconsin, Appleton	Mar.	30-Apr. 6..	1	..
Milwaukee	Mar	23-30	5	..

SMALLPOX—INSULAR.

Porto Rico, San Juan	Apr.	2	13	..

SMALLPOX—FOREIGN.

Brazil, Rio de Janeiro	Mar.	3-10	..	1
Canada, Winnipeg	Mar.	30-Apr. 6..	2	..
China, Ninchwang	Jan.	1-Feb. 3..	..	Present
Shanghai	Feb.	27-Mar. 9..	1	7
Egypt, Cairo	Mar.	11-18	1	..
France, Marseille	Mar.	1-31	..	238
Paris	Mar.	16-23	12	..
India, Bombay	Mar.	5-12	..	1
Calcutta	Feb.	23-Mar. 9..	..	68
Rangoon	Feb.	23-Mar. 9..	..	1
Italy, General	Mar.	21-28	22	..
Turin	Mar.	9-16	1	..
Mexico, Aguas Calientes	Mar.	23-30	..	6
Mexico City	Mar.	2-9	..	12
Tuxpam	Mar.	26-Apr. 2..	..	2
Portugal, Lisbon	Mar.	16-23	12	..
Russia, Moscow	Mar.	2-16	4	1
Odessa	Mar.	9-16	32	2
Riga	Mar.	16-23	2	..
St. Petersburg	Mar.	9-16	..	1
Warsaw	Feb.	23-Mar. 9..	..	11
Spain, Valencia	Mar.	17-24	3	..

YELLOW FEVER.

Brazil, Rio de Janeiro	Mar.	3-10	1	1

CHOLERA.

India, Bombay	Mar.	5-19	..	4
Calcutta	Feb.	28-Mar. 2..	..	33
Madras	Mar.	2-8	..	10
Rangoon	Feb.	23-Mar. 9..	..	29

PLAGUE—INSULAR.

Hawaii, Honolulu	Apr.	15	..	2

PLAGUE—FOREIGN.

Australia, Queensland, Brisbane	Feb.	2-9	3	1
Port Douglas	Feb.	2-9	6	..
New South Wales, Sydney	Feb.	2-9	4	1
Kempsey	Feb.	2-9	..	..
		(Total: cases, 4; deaths, 3)		
Brazil, Rio de Janeiro	Mar.	3-10	6	2
Egypt, Ismailia	Mar.	10-16	3	3
Port Said	Mar.	8-17	1	2
Assiout Province	Mar.	8-16	15	7
Beni Souef Province	Mar.	12-19	4	3
Girgeh Province	Mar.	9-16	30	23
Keneh Province	Mar.	11-18	26	20
Minieh Province	Mar.	13-18	2	1
India, General	Mar.	2-9	3,426	2,071
Bombay	Mar.	5-19	..	978
Rangoon	Feb.	23-Mar. 9	..	124

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Original Articles.

PULMONARY TUBERCULOSIS; SOME OF THE DETAILS OF ITS MODERN HYGIENIC TREATMENT WHICH CAN BE APPLIED IN TREATING THE PATIENT AT HIS OWN HOME.*

By HERBERT C. CLAPP, M.D.,

BOSTON.

VISITING PHYSICIAN TO THE MASSACHUSETTS STATE SANATORIUM FOR INCIPIENT CONSUMPTIVES AT RUTLAND; PROFESSOR OF DISEASES OF THE CHEST IN BOSTON UNIVERSITY.

In many walks of life a careful attention to details often explains the difference between success and failure. In none is this more true than in the treatment of tuberculosis. In my early professional days we sometimes advised consumptives to go logging in the Maine woods, to work on a ranch in Colorado, or to go lumbering in Minnesota. Very little more was said, and they were left in the main to regulate their own manner of living and to rely on their own devices. Occasionally one got well, but most of them died!

Now, if we know enough and are careful enough in our supervision, and if we have the cooperation of the patient, we can cure the great majority of incipient cases and some of those more advanced. The difference consists in attention to detail.

Since this subject has been brought so forcibly before the public within the past few years, many laymen and not a few physicians, with a big swing of the pendulum from their former pessimism, have come to think that the cure of consumption is now a very easy matter; that there is no need of drugs, nor even of physicians, but that all that is really necessary is to live in the open air and to eat plenty of good food. Would that it were so! We may be sure that shipwreck would inevitably be the lot of large numbers of those who followed this partially good advice if they did nothing more. A greenhorn may sail a boat when everything is propitious, but wait until the storm comes! A novice, after a few lessons, may seem to run an automobile well, but surely pride goeth before a fall, and trouble on trouble is his before the season is over. What does he then think of detail?

Nobody now considers climate so important a factor in the cure of tuberculosis as formerly. We now know that the disease can be cured in almost any climate. It does not make so much difference where one lives as how one lives. Although there are sometimes advantages in seeking another climate, yet many people for one reason or another, even if they have money, will prefer to stay at home. Good care at home is far better than the best climate anywhere with less care.

In sanatoria supervision by the physician and nurses can be more perfect, and more careful attention can be given to detail than in a private house. It is easier for a victim of tuberculosis to be good where everybody else is good, and the force of example is strong. The new patients are greatly encouraged and helped by the evident improvement of those who have entered a few weeks ahead of them; and this encouragement from their fellows ensures more willing obedience to possibly irksome rules. A new patient, entering among older ones who have learned some lessons, does not dare to object to this rule or that or to growl too much, for fear of the ridicule of his comrades who have by pleasant experience proved the value of the rule. Thus much time and effort are saved to the physician and nurse in the supervision which in some form or other is absolutely necessary.

But there is not now nor will there ever be sufficient sanatorium accommodation for all, and even if there were, many people cannot or will not go to a sanatorium.

Although it is not so easily done, yet patients can be cured in private practice if, on the one hand, the physician is sufficiently posted and will take time enough to give definite directions and to see that they are carried out; and if, on the other hand, the patients have will power, character, and intelligence enough to obey the rules understandingly and faithfully. It may be necessary to write out for these patients the directions very carefully, giving them the more general ones in print, and to impress on them as forcibly as possible the importance of carrying them out conscientiously. If they become careless in little things, their carelessness may put them back a long time or even cause their death, as has frequently been demonstrated.

To get well is a constant fight, but it is worth the while. It requires much patience, perseverance, and great self-denial, sometimes even heroism, on the part of the patient to submit himself to the necessarily rigid restrictions.

If a physician has several patients to treat in the same locality, it will be a great saving of time to him, and may be of some advantage to his patients likewise, for him to form a tuberculosis class, according to the system originated by Dr. Charles S. Miner of Asheville, S. C., and practised by him for several years among his well-to-do patients. Practically the same system has been carried out for over a year by Drs. Pratt, Hawes, and others in Boston, among the very poor, where it has been successful beyond reasonable expectation. Of course, in the latter cases financial aid in the way of food, tents, blankets, etc., has often been necessary and has been furnished by Emanuel Church and other charitable agencies. But the success of this latter work shows that even in the slums of a great city on the seacoast much can be done by inducing poor people to live properly by day and by night and to breathe the fresh air in tents on housetops high above the street dust, or in less crowded districts in tents or shacks in the

*Read before the Hughes Medical Club.

backyard, or on a piazza or fire-escape, or balcony. Of course, it is better still out in the suburbs; but careful medical supervision in a bad locality brings better results than a free and easy life in the best regions obtainable. The members of these classes bring to each meeting, once a week or oftener, their record books containing reports of the morning and afternoon temperature and pulse, taken by themselves, the amount of exercise and rest, number of hours in the twenty-four spent out of doors (often over twenty), cough, sputum, amount and kind of nourishment and hour at which it is taken, etc., etc. They are weighed once a week, the gain in weight is announced, and they are given a plain talk containing encouragement and directions for proper living. They are also regularly visited by a nurse, to see that they are carrying out these directions. Their lungs are examined once a month. This combination method is surely very helpful with poor people, and certain modifications of it may sometimes be found useful with people in better circumstances.

Fig. 1.

It is manifestly impossible in the limits of a short paper to present all the necessary details. It it also impossible, no matter how much space or time is at hand, to give directions so explicit as to cover all exigencies or emergencies in individual cases. In this, as in many other diseases, very much must be left to the judgment of the experienced and resourceful physician. Patients who have any regard for their own welfare and who do not care to take too many chances should put themselves under the supervision of a competent physician and be guided by him rather than try to manage their own cases alone. A few of the most important points are here given.

Out-of-Door Life in Warm Weather.—In the summer in New England, except in the crowded parts of cities and large towns, it is easy enough to live out of doors all of the time without much urging; and when indoors all of the windows can be kept open with very little inconvenience. Owing to the fact that the circulation of the air is less active in the summer, it is very advantageous to the patient to *sleep* also out of doors in this season; whereas in midwinter in New England a fair sized bedroom with two or more open windows is by far more convenient, and is practically good enough in most cases, superseding the necessity for anything more strenuous.

In summer a patient can sleep on a piazza or porch, preferably on the second floor. If it can be so planned, it is better not to have the porch face the east, for the rising sun wakes one too early. Nor should it face the direction of the most frequently prevailing storms. If the sides of the house do not at all times intercept violent winds, a canvas curtain can be arranged so as to be put up at short notice, or a screen of glass or boards. Gentle zephyrs or moderate breezes should always be welcomed, whether out of doors or in a room. To this extent drafts are beneficial, when the air is all around one, but not in narrow shafts or pencils from a slightly open window striking on the body, especially when the body is covered with perspiration. A consumptive after a little while delights to feel the play of breezes about his face, and he must have at all costs air which is not stagnant. A very powerful wind (especially if it is cold) is, however, unfavorable and needs to be guarded against. If one sleeps on a piazza in summer he needs to have a mosquito netting of cloth or wire tacked up to exclude insects, and if the piazza is on the ground floor, the netting should be strong enough to keep out cats and dogs likewise. A common tent can be utilized for sleeping out, but it should have a board floor raised from the ground, and at least two of its sides, if not all four, should be more or less open. An occupied common tent with its canvas spiked to the ground all around, as some use it, in the morning contains air which is perfectly horrible. If canvas were as pervious to air as some people think, it would be useless for sails of ships. Army tents are apt to be stuffy.

A tent with a conical shape like the Indian "tepee" and open at the top affords fair ventilation if a space is left between the walls and the floor (which is raised from the ground) through which the air enters and rises, going out at the top. The Gardiner tent is built on this principle and costs about $100. Prof. Fisher of New Haven a few years ago invented a remarkably ingenious "up draught louvre tent," and lately a sensible square tent-shack, which also combines the advantages of the rotating kiosk. Neither is patented.

Fig. 2.

Still better than a tent is a shack made cheaply of boards, with overhanging eaves, with windows, and with one side entirely open and furnished with

curtains to be lowered in case of a driving storm on that side. Some like a hammock swung between two trees, with a canvas cover for a watershed; but most hammocks become very uncomfortable after one or two hours.

In cities the flat roofs and fire-escapes, and sometimes the back yards have been utilized for sleeping as well as for sitting out daytimes.

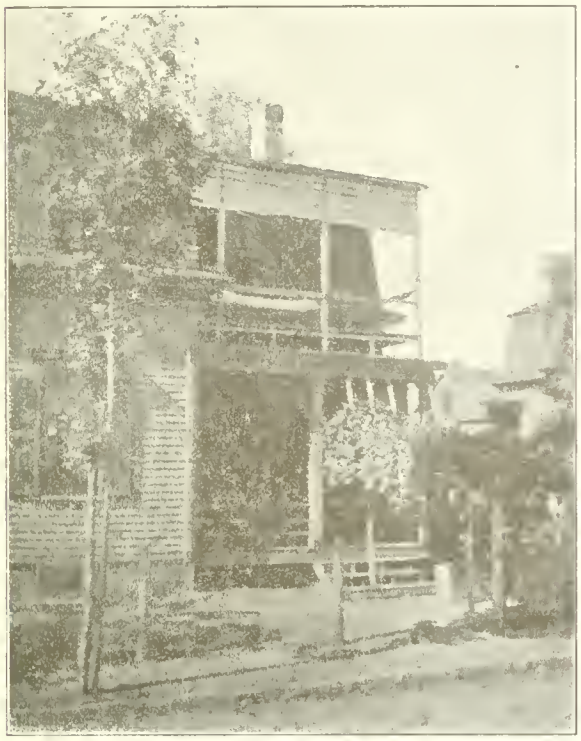

Fig. 3

In hot weather a patient should not have his head exposed for too long a time to the direct rays of the sun, and in great heat he should seek the shade for his whole body.

The house of the patient must have an abundance of sunlight and good ventilation, and therefore must not be too closely surrounded by trees, must stand on ground well drained to avoid dampness, must be kept clean by means of dampened cloths or mops, and must not have the dust moved from one place to another by dry sweeping, must have rugs instead of carpets, and no heavy draperies.

Night Air; Rain and Snow.—A great many people, even after having been convinced of the wisdom of exposure to fresh air in pleasant weather, are even now horrified at the idea of a "consumptive" being out in the damp, raw, or foggy weather or in rain or snow storms, or in having the windows open nights in such weather. First, as to the latter, some still imagine that night air is bad air, even if the sky is clear. After persuading them that the opposite is true, we should address ourselves to the harder task of inducing them to let the night air in, even in stormy weather, provided that the rain does not actually wet the bedclothes or soak through the floor and loosen the plaster ceilings of the room below. A few flakes of snow in the room will do no harm, unless the bed is wet by its melting. Most of a beating rain can be kept out without excluding the air, if the outside blinds are closed, the windows remaining open. If there are no blinds, and if there are enough windows in the room (four or more) and on different sides of it, during the actual downpour the windows on the windward side can be closed more or less and on the other side left open. If the room has not enough windows, additional air can be obtained right along by taking out all the sashes. This I have often done with advantage, especially in the warmer parts of the year.

A consumptive if well protected should not hesitate to go out because it rains. He should continue to sit on his piazza, if the overhang of the roof is sufficient to prevent the rain from actually falling on him. He should not abandon his walk, but put on his waterproof and rubbers or heavy boots and carry an umbrella. If when already out he gets caught in the rain without these safeguards, it will not hurt him to get wet, if he continues to walk and thus keeps warm. The same principle applies with rowing, riding horseback, or any other exercise. If he is tired and feels obliged to sit down in his wet clothes, if covered up well with a blanket or extra clothing, he may rest for quite a while without injury. But, on the other hand, if he has no extra covering, and sits or drives until he is thoroughly chilled, aggravations or complications are very apt to follow. In either case he should on reaching home take a dry rub or a bath and put on dry clothing and drink something hot.

Out-of-Door Life in Cold Weather.—The real task in making people take the fresh air is appreciated when cold weather comes. Then comes the tug of war. At least, this is so to begin with. After a patient has gotten used to it and has become convinced by actual experiment that he is not going to freeze, and is conscious of great improvement in his symptoms, he generally delights in it, and often rebels if asked to go back to his old ways; becoming,

Fig. 4

in fact, a so-called fresh-air fiend. But in the breaking-in process perhaps all our persuasive powers may be necessary, and even a little bulldozing. Here much of our success depends on how we carry out details. Some take to this life naturally, but most people need a good deal of instruction and encouragement. Our strongest argument with them is the fact that practically everywhere consumptives

make better and more satisfactory progress in winter than in summer. All sanatorium physicians in this country and abroad will testify to this fact.

All patients have to sit out much of the time; some have to sit out all of the time, not being allowed any exercise at all. The location for this sitting out is important. Sanatoria are generally built, if possible, on a hillside, with a hilltop to keep

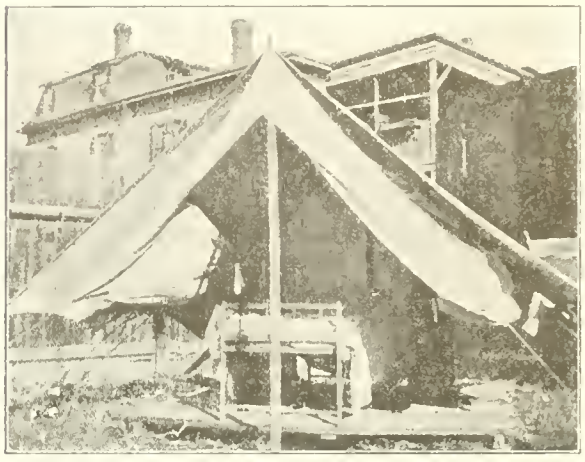

Fig. 5.

off the worst winds, which generally come from the north and west. The exposure should be mostly to the south, with the additional purpose of getting the sun all day. In a private house it is nice to have the piazza or balcony on the south side, in a jog or angle of the house for protection against the wind. If not, this should be obtained by means of some kind of a wind-shield. Glass is nice because it admits the light, but other material will do. This does not mean a glass-enclosed piazza or what is sometimes called a sun-room. In winter the strong winds (generally from the northwest) must be kept off, as they have a more cooling effect on the body than a still atmosphere many degrees lower. Trees often make a good windbreak. If the patient can afford it, a fine protection is secured by a revolving shed (a kiosk) enclosed on three sides, so as to meet and oppose the changing winds. A movable canvas curtain on a piazza, however, does very well. The best kind of a chair to sit out in is a steamer chair, of which there are several modifications and various prices, from $2 to $20. The more expensive have comfortable adjustable backs and cushions or mattresses. The steamer chair position is easiest to maintain for long stretches of time. Even more important is the fact that when the legs are mainly horizontal, they can be kept warm by wraps, which is almost impossible in cold weather if the feet touch the floor or ground.

During all seasons the patient should aim to be out of doors at least eight of the day hours, and more if he can. This may be reduced a little if the patient lies on his bed with open windows for an hour after the noonday meal, and if he goes to bed early, to have a long night in the fresh air. Counting these times, he should if possible be in the fresh air twenty out of twenty-four hours. He should have a warm room in which to dress, undress, and take his morning cold bath, as well as for his meals; and occasionally he may be allowed a little more liberty, but not much. If he is strong enough to see friends, he can entertain them on the piazza or other place where he is sitting out. He surely should not go to places of amusement or religious meetings, where the air is bad on account of crowds of people or of burning lamps or gas.

Occasionally, but not often, it happens that a patient, after experiencing benefit from the fresh air treatment, becomes *over*-enthusiastic in exposing himself to very cold and boisterous weather and needs to be restrained, but the opposite is far more common.

In very cold weather it is sometimes wise to introduce a certain amount of artificial heat into the room, the windows still being open. Many people confuse cold with fresh air, and heat with foul air. Even they on reflection will recognize the falsity of this and the fact that the air in a room may be very foul and unbearable with a temperature near zero, and pure at 90°. Here again we have to emphasize anew the statement that fresh air is what we should cry for and not necessarily cold air. The patient must have fresh air all the time; and yet he does best if the air is as cold as he can stand, while he is exposed to it constantly.

Clothing.—I often say to patients, "I do not care how you dress, provided you are fairly comfortable." Whether it is wool or cotton or mixed, linen mesh, silk, fur, leather, or paper, it makes little difference. Some need more and some less. Some lean towards too much clothing on the ground that they are delicate. The effort should be to wear the lightest weight and the least amount of clothing that will keep one fairly comfortable.

According to an old custom, a man having once put on his winter clothing in the fall, or a woman her furs, should never leave them off until the calendar says a certain spring month has arrived. How ridiculous! Instead they should change back and forth as the weather changes each day. They should suffer neither from the heat nor from the cold.

Cotton and wool mixture for underclothing is the best for most people and is not costly. Sweaters, cardigan jackets, chamois vests are all right. For walking, a short leather jacket, such as hunters wear, and lined with lamb's wool, is better than a heavy and clumsy fur coat, which, however, in its turn is far preferable for sitting out. Nowadays,

Fig. 6.

good warm fur coats can be bought for $15 or more. I have seen great satisfaction experienced by sitters out (not so much by walkers) from a long, heavy, shaggy, woolly waterproof coat made in Buffalo, called the Saskatchewan, which seems to defy the attacks of the coldest weather. I have kept perfectly warm in one in long sleigh rides with the thermometer below zero, when I should have suf-

fered in my fur-lined overcoat which cost seven times as much. Their price is only $18 for men and $20 for women. Now quite a number of our country doctors are using them in their long daily rides. If a patient can afford only one coat, however, they will not do, because they are too warm for most days. A coat of any kind should have a high collar, and there should be elastics in the sleeves at the wrists, or something else to prevent the wind going up the arms. A Canadian sash about the waist adds to its warmth.

For the hands common mittens of wool or of fur-lined leather are far more effective than gloves in zero weather, and they should be large and loose. If it is not quite so cold, and the patient is anxious to use his hands, he can put on thin cotton summer gloves, and over them warm mitts without fingers and made of worsted, or long worsted wristlets coming well down over the hands.

The protection of the feet is very important, and if they are not properly clothed much suffering follows. The shoes should not be tight. Rubber soles and heels are splendid when the ground is wet or cold. If they are not available, common rubbers should always be worn in rainy and especially in slushy weather. Arctics over the shoes for walking in the snow or for sitting out are much worn; less often felt shoes or soft moccasins. For sitting out or for riding foot-muffs made of quilted material stuffed with cotton and with layers of newspaper are good. If money is plenty, the automobile foot-muffs made of fur are satisfactory, and hot bricks or soapstones are often a necessity.

For the head a cap of cloth or fur or a tam-o'-shanter is most used. It should pull down over the ears or else have ear-tabs. A Derby hat or a woman's stiff hat will not allow the head to rest against the high back of the chair.

Before sitting out, the patient should be well wrapped up below the waist with steamer rugs or a fur robe, or common blankets or horse blankets, the blankets being perhaps five or six feet square. There is something of a knack in putting them around one to the best advantage. Some kind of a rug or blanket over the chair or hammock before getting in is a necessity, just as an extra mattress or a blanket over the mattress will add greatly to comfort when sleeping on a bed with windows open.

Sleeping Out in Cold Weather.—In our rigorous New England winters it is not very often really necessary to sleep out of doors. If the bedroom has two or more windows, generally enough air will circulate. But if the patient is anxious to sleep out it can be done, and no doubt it is more thorough in critical cases. A tent in winter is not so desirable as a rough shack containing a stove and open on one side, the open side to be closed with a curtain when dressing. Or without the stove and curtain the patient, to wash and dress, may slip into the warm house if it is near. Better still is a second floor piazza, properly protected.

Best of all, if the patient can afford it, is a sleeping porch specially built onto the house. Fig. 1 shows a remarkably nice one which an intelligent and educated gentleman had attached to a jog in his house last fall in the suburbs of Boston, and which he has slept in every night during this intensely cold winter, with great comfort and advantage. I have seen him several times in consultation with his physician, and he is very enthusiastic and loud in his praises of its merits. It is on the southeast side of the house and thus protected from the most common winds. For access from the house a window was cut down to the floor, making a door. The canvas curtains can be easily raised and lowered at will, and he can dress and undress and bathe in a warm room in the house. The whole structure cost about $100. It would be better still if the eaves projected more.

Fig. 2 shows an ingenious sleeping porch, large enough for two beds, built by another patient of mine in the Berkshires at a cost of $45, which has proved very successful. There being no piazza nor angle to the house, this was built against its flat side. As this was a hired house, it was put up with an eye to its easy removal without defacement to the walls, and the window was not cut down, boxes inside and out serving as steps. I have several times recommended others of similar pattern. Cheaper porches and also tents in actual use are shown in Figs. 3, 4, 5, and 6, from the third report of the Cambridge Anti-Tuberculosis Association.

To sleep out of doors in one of these porches a patient must dress especially for it. Some need more clothing than others. Dommet or outing flannel makes a fine, warm and inexpensive nightshirt, which should be made large and come to the floor when the patient is standing. Under this can be put on a woolen shirt and outside of it a sweater. A worsted skull cap, coming down over the ears and nose, is desirable on cold nights. Over this some wear a knitted helmet, covering the head, neck, and shoulders. Bed socks of wool or worsted are desirable, and if these do not keep the feet warm a hot water bottle or hot soapstone should be used. Kenwood sleeping bags, warm and well padded, closed in at the feet and coming well up around the body, are very comfortable for camping out.

The bed should either have two mattresses for warmth, or newspapers under one, or a blanket over one. A common amount of bed clothing in zero weather is eight thicknesses of woolen blankets, besides a quilt and either a down puff or an overcoat thrown on top. Old-fashioned comforters are too heavy. Down puffs, on the contrary, are very light and warm, and as commonly found in the stores cost about five or six dollars, with sateen covering. If made larger and thicker and of a higher grade of down and covered with silk, the price may be from $20 to $25.

If it rains and there is danger of the bed getting wet, some kind of waterproof cloth or a horse blanket can be thrown over all. Some like woolen sheets, but with all the bed covering mentioned above most prefer cotton. Two pillows may be used, one being tucked in around the shoulders and the other in front, to keep the cold air out, the head resting where they overlap. Of course, as the weather moderates the amount of bed clothing must be reduced so as not to make the patient too warm.

Exercise and Rest.—The careful regulation of the exercise is one of the most important features of the treatment. Very often it has happened that one act of indiscretion in this direction has entirely spoiled the patient's chances for recovery, and still oftener it has put him back for weeks or months, when he was previously progressing finely. More consumptives have been killed by overexertion than by anything else. In no particular is there more call for judgment and experience on the part of the physician and nurse. No absolute rules can be laid down. The physician must individualize his patient. The stage and activity of the disease and the special symptoms are largely the determining factors.

Exercise should never be pushed to the extent of

inducing exhaustion or fatigue which cannot be recovered from by a little rest; nor should it be carried to the extent of inducing increase of temperature, shortness of breath, or marked acceleration of the pulse, or cough, nor should it be taken too soon after a hemorrhage. A good rule to determine whether or not exercise really increases the temperature is to have the patient rest for twenty minutes or more after exercising and to take the temperature after this rest. If it is not elevated then, no harm has been done.

When the patient first comes under observation he should generally be kept still for from one to three or four weeks, even if his pulse and temperature would otherwise allow action. Then he can take a fresh start, after his rest has given him a surplus of energy to draw from.

If a patient's afternoon temperature is over 101.5° he should be kept in bed for awhile, as a rule. If over 100.5° he should be recumbent most of the time; if over 99.5° he should sit out without exercise on that day and on the day following. All should observe the quiet hour after the noon meal by lying down. In many cases it pays to keep the patient quiet after each meal; and in some, rest should be enjoined for half an hour before each meal, so that the stomach should not undertake its work in too tired a condition. If the morning temperature is 99° the rule is to take no exercise on that day. When a patient begins to sit up after being abed, he should not be up for long at a time. When he begins to walk about he should increase his amount very gradually. Worry and mental excitement or any decided mental exertion must be guarded against as well as physical efforts. A game of cards will sometimes raise the temperature decidedly. When his condition allows and he increases his exercise more and more, he should still be watched carefully to see that he does not overdo. Walking is the first thing, at the outset very slow, then faster on a level, and then gentle hill-climbing at a slow pace. As he progresses, horseback riding, if the horse is easy, and carriage or sleigh, or slow auto-driving are allowable, and a little later croquet or golf, or mild rowing, or skating, or garden work. Tennis and baseball are more violent and are only to be undertaken by those whose disease is practically arrested, and then only with care. Football is out of the question. In all games the influence of the competitive element should be reduced as much as possible. The consumptive should never exercise for the purpose of developing muscle and of becoming an athlete.

When the call for rest is a loud one and the rest needs to be mental as well as physical, complete seclusion is often advisable; or if this tends to depression, the patient can be rolled from his single room to the veranda, when for a short time each day he can see a few of his fellows.

During the active progress of the disease there are so many indications either for limiting exercise more or less or for entirely forbidding it, that some patients almost get the idea that they are never again to resume it. Often a patient, when teasing to be allowed to go home from the sanatorium a little before the proper time, has told me that he would promise not to do a bit of work or take a bit of exercise all winter if he could go. Of course, more or less exercise is necessary for all of us. It promotes nutrition, assists the aeration of the blood, strengthens the nervous system, and helps the elimination of various substances through the lungs, kidneys, bowels, and skin. Just as soon as the contra-indications are done away with, exercise both of the body and mind must be resumed. If prolonged rest really has made the patient lazy, as sometimes happens, he should be encouraged to exercise to an extent proportionate to his condition.

SURGERY IN DIABETES.*

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THE subject of surgery in diabetes is of such vast importance, our textbooks say so little on the subject, and there is such a diversity of opinion among medical men, that a careful study of the entire subject has seemed both profitable and desirable.

Some authors would prefer to see only absolutely necessary operations done. Others warn of the dangers of coma and gangrene. Still others, and this growing class includes one who is peculiarly fitted to decide the question, namely Naunyn, hold that the old rule of not operating in the presence of diabetes can no longer be maintained. Israel, writing in 1882, advises that only imperative operations should be done on diabetics. No plastic operations should be undertaken; no benign tumors removed. He advised postponing operation if posible until the sugar had disappeared from the urine. Tuffier, in 1888, advised against operation unless the sugar in the urine could be reduced by diet. Among the more modern writers Kümmell is one of the most enthusiastic. In his experience diabetic patients stand major operations very well. According to Baldy the belief that diabetes contraindicates operation is a superstition.

At the very outset we must divide the entire subject into two parts: 1. Lesions or diseases which have developed independently of the diabetes. 2. Lesions or diseases which have developed as the result, or as a complication, of diabetes. With the first class of cases this paper will have but little to do. A diabetic patient who requires an amputation of the breast, or the removal of a kidney, or even a plastic operation, should have that operation done. And the wounds will heal, and the mortality will be but little different from the non-diabetic cases. The writer would refer here in passing to his three cases of prostatectomy in diabetics reported elsewhere, which made as good recoveries as the ordinary cases.

When the disease for which we are called upon to operate is the result or a complication of the change in the tissue metamorphosis, we are confronted by a much more serious problem. And it is with this problem that this paper will chiefly deal.

1. Changes in Metabolism.—As is well known, we find in diabetes an increase in certain normal excretions, together with the presence of certain abnormal excretions. So we find in the urine of diabetics glucose, acetone, diacetic acid, oxybutyric acid, and an increased excretion of ammonia. The exact rôle which these different ingredients play is not yet definitely settled. We know by experiment that the virulence of pyogenic bacteria is increased by the presence of sugar in the tisues. The sugar in the blood and in the tissues makes a favorable culture medium for the growth of bacteria, provided the percentage of sugar is not too great. If the medium contains much sugar the growth of bacteria is hindered. The blood of diabetics contains 0.2 to 0.8 per cent. of sugar, rarely more than 0.5 per cent. And it is just this percentage of sugar

*Read before the Eastern Medical Society.

that is most favorable for bacterial growth. There is a common but erroneous belief that the greater the amount of sugar excreted the worse the prognosis. The worst feature is the acidity of the blood. The presence of these abnormal acids in the blood injures the tissues and makes them more prone to infection. These acids are furthermore in all probability causative factors in producing premature arteriosclerotic changes. The increased excretion of ammonia, the presence of acetone, diacetic acid, or β-oxybutyric acid, if it cannot be reduced by diet, certainly makes the prognosis worse. Phillips holds that no operation save of the extremest urgency should be done if more than one gram of ammonia is excreted in twenty-four hours, until this has been reduced to normal. He further advises that an operation should be postponed if diacetic acid is present, even though there is no marked increase in ammonia.

2. Arteriosclerosis plays a very important rôle in diabetic gangrene. The first systematic examination of the vessels in this disease was undertaken by Fr. Koenig in 1887. He found marked arteriosclerosis and calcareous deposits in the walls of the vessels. In from 65 to 100 per cent. of the cases various authors have found these changes in the vessels. Some patients who do not know they have diabetes complain for a long time before the development of the gangrene of symptoms due to faulty circulation. These symptoms are coldness, anesthesia, paresthesia, or severe pain in the limb. Sooner or later the black spot that is the precursor of the gangrene appears on one toe, or on the sole of the foot. The arteriosclerosis causes either a marked narrowing of the lumen or even a complete obliteration. This applies to veins as well as to arteries. As the process is progressive, less and less blood is carried to the furthermost part of the extremity. Finally there is almost complete stasis. Then thrombi form in the capillaries and terminal vessels, and the gangrene begins. Or, there may be a thrombosis of one of the larger vessels which is quickly followed by gangrene. Or again, the gangrene may result from an embolus lodging in one of the larger vessels; this is rare.

The rare occurrence of diabetic gangrene in women is another proof of the importance of the arterial changes. Out of 118 cases only thirteen were in women. The upper extremity is very rarely affected, because the arterial changes are found in the lower and not the upper extremity. It is now generally held that the gangrene is largely dependent on arterial changes, and that in the absence of arterial changes gangrene will not develop in diabetes.

3. Coma.—We all know that in a certain number of cases, even following minor operations, diabetic patients go into coma and die. Even a prolonged anesthesia, not accompanied by any operation, may bring about a fatal coma. Conversely, coma may follow an operation for which no anesthetic had been given. At times the most trivial incident or accident will bring about coma, while in other cases a severe injury, or an extensive operation will cause no ill effects. The fear of an operation, loss of blood, starving and purging before operation, all have an influence in causing coma. Hirschfeld emphasizes the fact that diminished nutrition is a marked predisposing cause of coma. Psychic influences, worry, and overfatigue, likewise predispose to coma. In diabetic coma the urine contains one or more of the following products: acetone, diacetic acid, β-oxybutyric acid. According to Naunyn, if more than three grams of ammonia per diem are excreted, there is great danger of coma; if the amount exceeds four grams, coma is inevitable. We often, in non-diabetic cases, find acetone or diacetic acid in the urine after a prolonged anesthesia. Kast and Master found after prolonged chloroform anesthesia increased proteid destruction, with an increase in the amount of acids excreted. We thus see the danger to a diabetic of general anesthesia. If we accept the coma as the result of an acid intoxication, it is not wise to reduce the percentage of sugar by a strict meat diet, because an exclusive meat diet will increase the acidity of the urine.

4. Diet and Medication.—Here again we must differentiate as to whether the disease for which we are operating is the result or a complication of diabetes, or whether it has developed independently of the diabetes. If the disease is merely an intercurrent one, the indication for dieting is not very urgent. Indeed, if we are dealing with patients of advanced years, whose general condition is none too good, we would probably do more harm than good by a strict diet. Their nutrition would suffer, and though we might be able to reduce the amount of sugar in the urine, we would be dealing with a two-edged sword. In cases of diabetic gangrene, if there is time, a moderate antidiabetic diet before operation will often be of benefit. If the excretion of ammonia is in excess, sodium bicarbonate should be given daily in large doses until it becomes normal. If the stomach will not tolerate the large amounts of soda, it can be given by rectum. The dangers of coma and of sepsis are lessened by the alkaline treatment, which should be kept up for some time after operation. Rumpf suggests sodium citrate in place of the bicarbonate. Salol or sodium salicylate are also useful. Noble made it a rule to employ a moderate preliminary diet and to give codeine and strychnine. After operation he advises a strict diet, codeine, morphine, and salt solutions by rectum and subcutaneously. He stated, however, that the dieting and medication before operation had not, in his experience, reduced the number of cases of coma. The giving of large amounts of water before and after operation is of great importance, just as refraining from removing too much fluid from the body by starving and purging is important. It may be safer to operate in the absence of sugar, but, as was pointed out above, the sugar should not be made to disappear by increasing the acidity of the urine (by an exclusive meat diet), because the greater the acidity the more likely is coma. With a good general condition and a large percentage of sugar, the prognosis is better than with a poor condition and a small percentage of sugar. Rudisch has recently pointed out that the administration of atropine in doses of gr. 1-150 to gr. 1-100 three times a day, together with codeine, will very rapidly and very markedly diminish the amount of glucose in the urine. If this method proves satisfactory it may take the place of dieting before operation. It certainly is not open to the objection of increasing acidity.

Phillips collected thirty-four cases that were given preliminary treatment with six deaths, four from sepsis and two from coma. In eleven other cases no preliminary treatment was given and four died, two from sepsis and two from coma. The number of cases, however, is too small to draw conclusions from, although a larger proportion of the dieted cases in this series recovered. Most authorities agree that a moderately strict diet is desirable after operation.

5. Technique of Operation.—The principal dangers of operations on diabetics are: 1. The anes-

thetic. 2. Infection. 3. Hemorrhage. Ether and chloroform should be avoided as much as possible. From all reports ether is a little less dangerous than chloroform in these cases. Nitrous oxide, spinal anesthesia, and local anesthesia should be the methods of choice. If local anesthesia is used, only small quantities of fluid should be injected into one locality to prevent too much stretching of the tissues. Many major operations can be done under laughing gas if given by a skilled anesthetist. The writer was able in one non-diabetic case to do a nephrectomy lasting a half hour, and only gas was given.

The field of spinal anesthesia is also a broad one. The writer recently performed an amputation of the thigh in an old lady under spinal anesthesia. A hypodermic injection of ¼ gr. of morphine was given, and the patient not only suffered no pain, but was actually asleep during the operation. Gersuny collected eighty-six narcoses from various sources without a single case of coma. Ether and the A. C. E. mixture were the anesthetics used. Witzel has reported in a similar vein. But, as was pointed out above, it is not only the anesthetic that brings on coma. The dread of operation, the loss of fluid by preliminary purging and fasting, are also contributing factors. All these elements should be reduced to a minimum. It is well to operate in the morning, after the physiological fasting of the night. If neither ether nor chloroform is used, the patient can have his ordinary food up to the time of operation. There will then be no vomiting after operation, and the patient can take nourishment very soon. We have seen why diabetics are peculiarly prone to infections. Everything possible should be done in preparing the field of operation, and, during the operation itself, to prevent infection. Asepsis should be most rigid. Antiseptics, inasmuch as they lower the vitality of the already compromised tissues, should not be allowed to come in contact with the wound. Rubber gloves should be worn, and the tissues handled as gently as possible. The operative technique as well as the dressings should be as simple as possible. The loss of blood should be reduced to a minimum. Reynier lays great stress on the absence of the knee jerks as giving a bad prognosis. He claims that no major operation will be successful if the knee jerks are absent. Honzak advises against operation in the presence of chronic interstitial nephritis. On the other hand, as Grossman after an exhaustive study of the subject points out, the results of operation under strictest asepsis are improving from year to year. And, in view of the sad results of non-operative treatment, an operation should often be done even where the outlook is bad. In doubtful cases the urine should be examined for the percentage of sugar, acetone, diacetic acid, and -oxybutyric acid. The total amount of ammonia excreted should be determined. If there is serious disease of liver, heart, or lungs, the prognosis of operation is bad. If there has been much loss of flesh not depending on the surgical lesion, it will be well to improve the general condition before proceeding to operation.

6. Fractures.—Fractures in diabetics heal well, though often more slowly than in healthy subjects. Phillips reported three cases from St. Bartholomew's Hospital which united promptly and well. He reports, however, an empyema following a fracture of a rib which ended fatally. Naunyn, in his monograph on diabetes, stated that he had never seen an empyema in a diabetic. He further states that suppurative inflammation of serous membranes is very rare in diabetics. Legendre reports a perfect result in four weeks in a fracture of the humerus; the woman was sixty years old. Phillips reported an excellent result in a subtrochanteric fracture of the femur in a man of fifty-eight. He also reported a good result in a man of fifty-five, with a Pott's fracture. Spitzer reported a case of fracture of the clavicle in a man of forty-six. There was 4 per cent. sugar and 1-20 per cent. ammonia. Sodium bicarbonate was given freely. There was improvement for four days, then the man became worse and died of coma, evidently due to shock, on the seventh day. Smith and Durham quote three cases in which fractures took four to five months to consolidate, and two in which non-union occurred. Naunyn states that imperfect union may occur even though at the time no sugar is excreted. He also refers to the frequent absence of pain in fractures in diabetics. He reports twelve cases of fracture. Three died; one after a primary amputation, one from coma induced by the shock of the accident, and one from pyopneumothorax caused by fractured ribs. In five cases there was delayed union or non-union; in four cases the union was normal. According to the researches of Toralbo, Van Ackeren, and Gerhardt, diabetics often excrete such an excess of phosphoric acid and lime salts over the quantity in the food ingested, that these ingredients must come from one of the tissues of the body. This can only be from the bones. Gerhardt attributes this to the increased acidity, and states that the administration of alkalies diminishes the excretion of lime. It would therefore seem rational in these cases to administer alkalies in order to lessen the excretion of lime, and perhaps to administer lime salts in order to make up for the increased excretion.

7. Operations for Diseases Not Due to Diabetes.—Noble of Philadelphia, in a paper on this subject, called attention to the widely spread belief that the healing process in wounds in diabetics is markedly interfered with, and that the sloughing rather than the healing of wounds is to be expected. Frequently have we heard doctors say that they would like to have a certain patient operated on, but that the patient had diabetes, and they had therefore advised against operation. Noble reported seven cases, one amputation of the breast, a ventral hernia, a vaginal hysterectomy for prolapse, a colpoperineorrhaphy, a post-operative hernia, a case of appendicitis, and a rectovaginal fistula. Of these seven cases one patient died in coma on the sixth day. This woman of fifty had had diabetes for many years, with a large excretion of glucose. In the other six cases the healing of the wounds was not different from that in patients without diabetes. The writer has elsewhere reported three cases of prostatectomy in which the wound healing was satisfactory. Sternberg reported sixteen major operations from Gersuny's clinic. He concludes that any necessary operation should be done, that a preparatory diet is desirable but not absolutely necessary. The operations included two cases of amputation of the breast, one case of cancer of the rectum that survived operation two years, one case of cancer of the jaw that survived two extensive operations, one case of myoma of the uterus removed by morcellement, one case of cholecystitis, and one case of prolapse of the vagina with rupture of the perineum, necessitating two extensive plastic operations within three months. Four of these cases had severe diabetes, one case had 7 per cent. of sugar. Noble collected sixty-nine cases involving the breast, the female genitals, and the abdomen; fifty-two cases recovered and seventeen died. From

1900 to 1905 eleven cases have been operated on in Dr. Lilienthal's service at Mount Sinai Hospital. The cases included amputation of the breast, radical operation for umbilical hernia, suprapubic prostatectomy, partial excision of cancer or pharynx, and gastroenterostomy. Of these eleven cases the wounds healed satisfactorily in ten. The only case that died was a gastroenterostomy with a button in a cancer case. Death was due to peritonitis. We can but agree with the conclusions arrived at by Phillips after the study of a large number of cases. We should operate: 1. For malignant disease. 2. Large abdominal tumors. 3. Cosmetic operations, if the general condition is good. 4. Emergency operations, even under the most unfavorable conditions.

8. Gangrene of Skin. Furuncle, Carbuncle.—Griesinger figures that inflammatory gangrenous processes develop in 10 per cent. of all diabetic cases. The ages vary from twenty-two to eighty years. Forty per cent. occur between fifty and sixty years. The most common lesions are furunculosis and carbuncle. As the mild forms of diabetes occur chiefly in middle age, so we also find most of the cases of furuncle and carbuncle at that time of life. As a rule the urine contains only a moderate amount of sugar, and not much attention had been paid to the diet. The development of these lesions shows that there are serious errors in the body metabolism, and they should act as warnings of the storm to come. According to Grossman there is no case on record in which diabetes was cured after carbuncles had developed. The prognosis of gangrene of the skin *per se* is not bad; healing is often spontaneous. But the ultimate prognosis is bad, because only too often the gangrene of the skin is but the forerunner of more serious lesions. The necrosis of the skin generally occurs in the lower extremity. It begins either as a bluish red discoloration or as a blister. It may be caused by a scratch, by the scraping or cutting of a corn, or by any slight trauma, or even by exposure to cold. The gangrene is usually preceded by local numbness, cold, or pain. The treatment of furunculosis and of grangrene of the skin is chiefly dietetic. Some recommend mild antiseptic washes. Carbuncles generally develop on the dorsum. They should be treated by early and free incisions through the deep fascia. During convalescence the patient should be dieted. Of seventy-five large carbuncles reported from Gersuny's clinic five died of sepsis after operation. The earlier the incisions are made the less likely is sepsis to develop.

9. Mal Perforant.—It was formerly believed that every ulcus perforans was on a diabetic basis. It is found almost exclusively among men between forty and sixty years. In most of the cases the diabetes had not been recognized before the ulcer developed. In about 25 per cent. of the cases there were some symptoms of tabes. But, as Grossman points out, we often see pseudo-tabes in diabetics. The site of the ulcer is at one of the three points of pressure on the sole of the foot, *i.e.* the head of the first or the fifth metatarsus, or the heel. There is regularly a preexisting callus at the point of perforation. The prognosis is good. If we see an ulcer in this location which has a tendency to bleed, to become infected or gangrenous, especially if there is redness or edema of the leg, we must strongly suspect diabetes. The ulcer can generally be made to heal with stimulating dressings. In one case Gersuny excised the ulcer together with the head of the metatarsus with good result.

10. Abscesses.—As is well known, the diabetic is very prone to develop abscesses. In addition to the lowered vitality produced by the circulation of an abnormal amount of sugar, the presence of arteriosclerosis, and nerve degeneration, must also be taken into account. All these are contributory factors in the production of the various trophic lesions which affect the diabetic. The sugar directly lowers the vitality of the tissues, and, by producing chronic vascular and nerve lesions, it still more adversely affects the body economy. One of the commonest, as well as one of the most fatal, forms of abscess is the ischiorectal. A few years ago the writer had a case of this kind, which after free incision improved for several days and then went into coma. A prominent surgeon, who was asked to see the patient, remarked that he had never seen a case of this kind end in recovery. However, we recently had a successful case in Dr. Lilienthal's service. And last winter the writer was fortunate enough to save a far advanced case, and the patient is still alive, though suffering from a severe diabetes. As these patients stand suppurative processes very badly, the rule should be very early and very free incision.

11. Dry Gangrene and Wet Gangrene.—The three principal factors at work in causing gangrene are: (1) alcohol, (2) arterial changes, (3) bacteria. Alcohol acts by lessening tissue resistance, weakening the heart's action, and by predisposing to arteriosclerosis. The severity of the arteriosclerosis and the virulence of the bacteria are the great determining factors. We have seen above how the arteriosclerosis plays its rôle. The idiopathic or dry gangrene is largely due to the changes in the arteries and veins; the altered metabolism plays but a predisposing rôle. By the introduction of bacteria from without the dry gangrene is converted into an inflammatory or moist gangrene. How often this happens is shown by the fact that we see many more cases of moist gangrene than we do of dry gangrene. The comparative rarity of gangrene in women is less striking, if we recollect how much less frequent arteriosclerosis and alcoholism are in women than in men.

The following tables are from Grossman:

Character of Gangrene	Females.	Drinkers	Arterio-sclerosis.	Latent Diabetes	Total.
Ulcerations	4	3	8	0	24
Mal perforant	1	6	6	13	25
Dry gangrene	10	7	27	22	75
Wet gangrene	13	8	13	37	72
Total	28	24	54	82	185

DIABETIC GANGRENE

	Giron.	Mayer	Grossman.	Total.
Female	23 = 18.69%	10 = 7.86%	39 = 17.41%	72
Male	100 = 81.31%	46 = 82.14%	185 = 82.59%	331
Total	123	56	224	

In the overwhelming majority of the cases the lower extremity is the seat of the gangrene, just as the lower extremity is the favorite seat of the arterial changes. As Lilienthal says, "necrosis due to arterial obliteration is commonest in structures of little vascularity, such as tendon and fascia, while it is uncommon in very vascular tissues, such as mucous membrane. Fingers and toes being supplied by a terminal circulation, and being composed almost entirely of skin, bone, and tendinous structures, are especially liable to the disorder. The tension in the tissues which is caused by even a slight degree of infection will not infrequently so impair the circulation that necrosis occurs."

Dry gangrene cannot be attributed to outside causes. In a large percentage of the cases there are

marked arterial changes. The diseased vessels must be considered the predisposing cause, to which is added an exciting cause such as a tight shoe, exposure to cold, overexertion in walking, etc. As the result of one of these exciting causes the circulation, which had been poor enough owing to the arteriosclerosis, becomes completely cut off and gangrene results.

In wet gangrene there is always the added element of infection from without. A cellulitis is thus superimposed upon the gangrene. We have seen how the presence of sugar in the tissues predisposes to this infection. Once it has taken place we are further handicapped in combating it by the compromised arterial and venous systems and by the faulty metabolism. With varying rapidity the process is progressive. The infection spreads along the cellular planes between the muscles and tendons and along the lymphatics. The deeper tissues also become gangrenous and phlegmons, which endanger life, result.

12. Treatment of Gangrene.—Haidenhain gives three conditions under which spontaneous gangrene may occur: (1) A deficient supply of normal blood (senile); (2) a normal supply of abnormal blood (noma); (3) a deficient supply of abnormal blood (diabetic). At the very outset of the gangrene everything possible should be done to improve the local circulation. The patient should be in the recumbent position, the limb should be elevated and external heat applied. At times massage may be of use. Our aim should always be to keep the gangrene dry, and if it becomes moist to transform the moist gangrene into a dry gangrene. To bring this about dry antiseptic dressings and powders are employed; wet dressings of all kinds should be avoided. Antidiabetic diet will often aid in limiting the gangrene, especially if the patient has not had the benefit of diet for a long time. This is particularly true of the wet gangrene. In the dry form the general condition is usually much better, because the patient has been careful with his diet; accordingly, we cannot expect to influence the gangrene in these cases to any great extent by diet. As long as the gangrene remains dry, *i.e.* free from infection, no operation should be done until a line of demarcation forms. Limitation of the gangrene will be aided by elevation of the limb and dry dressings. Even when the line of demarcation is well established no operation should be done unless there is infection. With the expectant treatment one toe or several toes will gradually fall off, and leave a granulating wound which will often heal with little or no assistance. If there is infection, we try to limit it and bring about a condition of dry gangrene. To accomplish this blebs are opened as soon as they form, necrotic skin is cut away, a phlegmon is freely incised, the limb is elevated and covered with a dry dressing. The patient in the meantime is carefully dieted and everything done to improve the general condition. The urine is frequently examined not only for sugar but also for acetone, diacetic acid, and for the amount of ammonia excreted. Often we find improvement in the local condition go hand in hand with improvement in the condition of the urine. And we have seen above how important it is to limit acidity as well as the excretion of ammonia before proceeding to operation. If in spite of treatment fever persists and the phlegmon progresses, we must operate even without a line of demarcation. If there is no fever, which means that there is no infection, the waiting period will usually be from one to three weeks. During this time water should be given freely, also bicarbonate of soda; and, according to the suggestion of Rudisch, atropine in large doses together with codeine. Infection, when it takes place, is always from without. If, in spite of local and constitutional treatment, the infection is progressive, an amputation must be done to save life. We are then confronted by the vexed question of the site of amputation. The point of election will depend on (1) the condition of the arteries, (2) the extent of the phlegmon. According to Gerster, "if the popliteal pulse is felt, an amputation below the knee is admissible. In case of doubt, however, the higher amputation deserves the preference." Lilienthal advises against amputation at the knee, because there is so much tendinous tissue and so little muscle there that necrosis is very apt to appear in the stump. He suggests making all flaps of skin and muscle. Gussenbauer advises that the condition of the arteries should be carefully investigated on both sides. If the pulse is distinctly present in both tibial arteries, as well as in the dorsalis pedis, he claims that the removal of the diseased parts will suffice. But he adds that this rule has exceptions. He further states that if there is popliteal pulsation and none lower down, an amputation should be done below the knee, provided the gangrene has not spread beyond the dorsum of the foot and that the leg is free from phlebitis and lymphangitis. Where the phlegmonous process is rapidly progressive all are agreed that a high amputation must be done. As a rule operations on the toes or on the foot are insufficient if there is any infection. Haidenhaim's rules still hold good: (1) If there is extension of the process to the dorsum or palmar aspect of the foot the amputation should be made above the condyles of the femur; (2) amputation below the knee is frequently accompanied by gangrene of the flaps and jeopardizes the patient's life; (3) high amputation is indicated when the gangrene is progressive, although there may be no rise in temperature.

The statistics of G. B. Smith, Haidenhain, Kuster, and Smith and Durham, all go to show that where the gangrene affects more than three toes a high amputation gives the best results. We have referred above to the choice of anesthetic and to the preparation for and general technique of operations on diabetics. In amputations the Esmarch constrictor should not be used; digital compression of the femoral or external iliac should be employed instead. Long flaps are apt to become gangrenous; the flaps should be short and should consist of skin and muscle. No sutures should be used; the wound should either be left open or approximated in part or entirely with strips of Z. O. plaster. Drainage should be free. The result will usually depend on three factors: (1) The severity of the diabetes; (2) the condition of the heart; (3) the extent of the phlegmon.

Grossman collected 58 cases of amputation for diabetic gangrene: 22 leg amputations with 9 deaths; 21 thigh amputations with 9 deaths; 7 Gritti knee amputations with 4 deaths; 2 Pirogoff amputations with 1 death; 1 Chopart amputation with 0 death; 3 toe exarticulations with 0 death; 1 toe amputation with 0 death; 1 finger amputation with 0 death. Total, 58 amputations with 23 deaths, a mortality of 39.6 per cent. This mortality may at first sight seem high, but we must remember that in cases of extensive gangrene the mortality without operation is fearful. Phillips reported from St. Bartholomew's Hospital, from 1884 to 1899, eleven cases of gangrene not operated on and they all died. The chief causes of death after operation are coma, sepsis, and cardiac failure.

TABLE OF OPERATIONS.*

Name and Date.	Age and Sex.	Lesion.	Duration of Present Illness.	Treatment.	Result.	Remarks.
S. S., 1901..	M., 52	Gangrene of foot.....	3 weeks.....	1. Pirogoff amput. 2. Amp lower third thigh.	+ 3 days after 2d operation.	1½% sugar, albumin, hyaline and granular casts.
M. D., 1901..	M., 44	Gangrene of toes.....	2 weeks.....	Amput. of toes.....	+ 6 hours.	1% sugar, albumin, gran. casts
R. W., 1901..	F., 50	Strangulated umbilical hernia	3 days.....	Radical operation...	Cured.	1%–2% sugar.
S. L., 1901...	M., 56	Luetic orchitis mistaken for T. b. c.	7 weeks.....	Orchidectomy.....	Cured.	2% to 5% sugar.
B. A., 1902...	M., 58	Gangrene of foot, lymphangitis of leg..	2 weeks.....	Amput. middle thigh.....	+ coma 24 hrs.	3% sugar, acetone, albumin, hyalo-granular casts.
I. G., 1902...	M.	9 weeks before admission toe amput. Gangrene spread to foot.	9 weeks.....	Amput. middle of thigh.....	+ 4 days after operation.	4%–5% sugar, acetone.
J. S., 1902...	M., 59	Gangrene of foot.....	8 days.....	Amput. middle of leg.....	+ 3 days.....	2%–3½% sugar
M. M., 1903..	M., 56	Carcinoma of pancreas.....	4 months...	Exploratory laparotomy and drainage.	Unimproved....	1%–3% sugar.
S. S., 1903 ..	M., 63	Prostatic hypertrophy.....	Several years.	Suprapubic prostatectomy...	Cured	For several years had had up to 1½% sugar.
W. C., 1903...	M., 57	Prostatic hypertrophy	Several years	Suprapubic prostatectomy	Cured	Sugar present for several years
M. A. S., 1903	M., 60	Cellulitis of foot	4 weeks	Incision and drainage.....	Cured...	1% sugar, acetone, trace of albumin.
S. G., 1903...	F., 54	Gangrene of foot....	8 days	Amput. lower third thigh. ..	Cured	Up to 4% sugar, acetone.
M. S., 1903...	M., 55	Gangrene of foot.....	2 weeks.....	1. Incision foot, amput. toe 2. Amput middle thigh....	Cured..	1% –5% sugar, acetone, diacetic acid.
I. B., 1903...	F., 62	Gangrene of foot.....	1 week.....	Amput. lower third thigh....	+ Coma, 8 days	2%–3% sugar, acetone, diacetic acid, albumin.
N. R., 1904...	M., 58	Lipoma neck.....	2 years	Excision of tumor	Cured.	1%–2% sugar, trace albumin.
N. T., 1904...	M., 48	Cancer of pharynx	5 years..	Partial excision	Improved. ...	7/10% sugar, acetone, diacetic acid
B. H., 1904 ..	F., 56	Fibroma breast.	6 weeks.....	Excision of tumor.....	Cured.	2%–3% sugar, diacetic acid.
S. K., 1904....	M., 53	Cancer stomach.....	Several mos...	Post-gastroenterostomy with button.	+ 3 days peritonitis	2½% sugar.
M. K., 1904 ..	M., 55	Stones in gall-bladder and duct	5 weeks. ..	Cholecystectomy and choledochotomy.	Cured	1%–1½% sugar, trace albumin
S. S., 1904. ..	F., 53	Gangrene finger.....	2 weeks	Amput. finger	Slow healing	1% sugar, acetone, diacetic acid.
R. R., 1905...	F., 32	Scirrhus breast.....		Radic. amput. breast....	Slow healing.	6/10% sugar, acetone, diacetic acid.
H. B., 1905...	M., 52	Gangrene of foot. ..	3 weeks ..	Amput. middle thigh. ..	Slow healing	1½%–2% sugar.
J. E., 1905 ..	F., 54	1 Gangrene toe. 2. Secondary gangrene foot.	2 weeks. ..	1. Amput. small toe. 2. Amp lower third thigh.	1st op. Nov. 27 2d op. Dec. 21 + Coma, Dec. 25, 1905	2%–7% sugar, acetone, diacetic acid, albumin, hyaline and granular casts.

*The operations were performed by Drs. H. Lilienthal, C. A. Elsberg and J. Wiener

Conclusions. 1. We must distinguish between diseases due to diabetes, and those that occur independently of the disease.

2. All necessary operations for diseases not due to diabetes should be performed just as in ordinary patients.

3. The abnormal products (acetone, diacetic acid, β-oxybutyric acid, lactic acid) which circulate in the blood in diabetes do harm, (*a*) by injuring the tissues and making them prone to infection; (*b*) by acting as contributing factors in producing premature arteriosclerotic changes.

4. Arteriosclerosis plays a very important rôle in producing diabetic gangrene.

5. There are two kinds of diabetic gangrene: (*a*) that caused by changes in the arteries and veins; (*b*) that caused by the effect of virulent bacteria on weakened tissues.

6. We should always endeavor to transform wet gangrene into dry gangrene.

7. If more than three toes are affected, especially if there is any cellulitis, a high amputation is generally indicated.

8. If the infection is progressive a high amputation should be done.

9. If in doubt about the site of amputation, a high amputation will give the best results.

10. If more than one gram of ammonia is excreted in twenty-four hours, operation had better be postponed until by careful diet the amount of ammonia is considerably reduced.

11. The prognosis does not depend on the percentage of glucose in the urine but on the degree of acid intoxication.

12. A strict meat diet will reduce the amount of sugar, but it will often bring on fatal coma by increasing acidity.

13. Sodium bicarbonate given before and after operation can do no harm and may do good.

14. Ether and chloroform should be avoided as much as possible.

15. All operations on diabetics should be performed as simply and as rapidly as possible.

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RARE FORMS OF CHORIOIDITIS:

ONE VARIETY DUE TO GENERAL MALARIAL INFECTION AND ONE TO AUTOINTOXICATION FROM INTESTINAL PTOMAINS.*

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THESE forms of chorioiditis are not often met with by the ophthalmic surgeon. In posterior uveitis, due to either of the above causes, the disease must be regarded as caused by the microorganisms conveyed to the eye from elsewhere within the body by the blood current, and these organisms must perforce be arrested and adhere to the walls of the vessels before they can cause damage; such arrest or stoppage being commonly promoted by the microorganisms being contained in coagula or particles of broken-down tissue, or aggregated in colonies.

The first variety of chorioiditis referred to, that due to general *malarial* infection, is a rare ocular complication. Severe forms of malaria, and the accompanying profound anemia thereby induced, met with in tropical countries and in certain regions of our own Southwestern States, must be regarded as the more or less frequent cause of chorioiditis. Malarial inflammation of the entire uveal tract, including chorioid, ciliary body and iris, not infrequently occurs in patients suffering from severe malarial poisoning, like jungle fever, and these attacks of uveitis may come on years after the original exposure to the fever. Some of the characteristics of these attacks are their periodicity and their tendency to relapse. Their course is most tedious, though the patients usually recover their vision almost completely.

In malarial attacks certain eye symptoms may form part of the attack, and have even been known to be a substitute for the general attack. Supraorbital neuralgia, ptosis, spasm of accommodation, amblyopia, and even complete amaurosis, without ophthalmoscopic findings, have been observed, not only in severe atacks of malarial fever, but even in latent malaria. Why, then, may not chorioiditis develop as one of the symptoms of profound malarial saturation of the whole organism?

It has been my experience in the past to meet with a goodly number of cases of severe intraocular lesions occurring in profoundly malarial patients, and in most of these a distinct type of chorioiditis was present. As is generally known, after the malarial poisoning has lasted a long time, a series of complications often occurs, such as diffuse vitreous opacities and multiple retinal hemorrhages, but I have not found in literature any mention of a distinct type of chorioiditis, consisting of small patches of yellowish exudation, fairly circular in form, but with little elevation above the surface, which occur all over the fundus, and do not tend to coalesce. These are distinct from the pigmentary deposits not infrequently found in the fundus after malaria of long standing, which are undoubtedly due to pigment emboli, the result of gradually developing melanemia. This type of chorioiditis is very often accompanied by a general uveitis with fixed punctate opacities of the vitreous, and the patches of chorioidal exudation may be entirely hidden by these opacities, and only become visible when the vitreous has cleared up. These yellow patches are very different from the shining white spots in the retina left after retinal hemorrhages.

As corroborative evidence of the occurrence of these patches of exudation, at autopsies on malarial patients, changes have been found in the chorioid which were not recognized before death, consisting of small inflammatory foci with thromboses of the chorioidal vessels. The vitreous opacities are often absent throughout the entire course of the disease.

One of the striking features of these cases is the marked disproportion which exists between the degree of the acuity of vision and the actual amount of chorioidal disease present. The whole fundus may show an extensive inflammatory process, and yet the central vision may be very good, provided no vitreous complications are present.

These cases are very chronic in their course, and show but little sign of improvement under the usual treatment of chorioiditis. It is not until quinine has been administered in steadily increasing doses, accompanied by arsenic and iron, that the chorioid begins to clear up, and the vitreous opacities disappear. Yet the prognosis is good if the cause is recognized and the disease is properly treated, and the ultimate vision is normal, or nearly so.

The second variety of chorioiditis, above referred to, is still rarer than the malarial, and, if possible, still more interesting. For some years Elschnig has been making a special study of gastrointestinal autointoxication as a factor in the development of ocular affections. He regards it as especially important as a cause of ophthalmoplegia interna, and more rarely of paralysis of the external ocular muscles and of affections of the optic nerve. He has also found intestinal intoxication to be a cause of diseases of the cornea and sclerotic, and of affections of the uveal tract, especially of recurring iritis and of insidious iridocyclitis.

Following on somewhat different lines of investigation, Grover discovered that, in a large number of cases of eye disease, for which he could discover no primary cause, the test for indican in the feces and urine resulted strongly positive. In all of these cases there were evidences of digestive disturbance. As indican is an indication of putrefactive processes in the intestines, Grover assumes that its presence in these cases indicates that poisons from the intestines are circulating in the body and affecting all the organs in the body, and these disturbances are visible in the eye, and attract attention. The relation of chorioiditis to autointoxication is very inter-

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esting. A careful search of ophthalmic literature reveals very few well-authenticated cases of lesions of the deeper tissues of the eye due to autointoxication. Intestinal poisoning from ptomains represents a sort of transition to acute infectious diseases. The toxic products of the disassimilation of food vary greatly in character, and some of them have a specific action on the eye. While we are all familiar with the commoner general symptoms of intestinal intoxication, the localized ocular symptoms are much less evident. Conjunctival injection, paralysis of accommodation of the levator palpebræ, and of the external muscles of the eyes, are not infrequent symptoms. In many of these cases vision is not impaired, but a number of cases of amblyopia without ophthalmoscopic findings have been reported, for which no satisfactory explanation has been offered. These visual disturbances are doubtless primarily due to putrefactive changes occurring in the animal tissues.

During the past few years I have seen quite a number of cases of autointoxication, accompanied by marked lesions of the deep tissues of the eye, notably a chorioiditis of an unusual type. They all presented the usual ocular symptoms of conjunctival injection, paralysis of accommodation, and mydriasis, but in addition the fundus presented an unusual picture. Scattered all over the fundus of both eyes were patches of yellowish-white exudation in the chorioid, of varying size and shape, very flat, with scarcely any elevation above the general level of the fundus. Some were in the stage of efflorescence and others in the period of retrogression and absorption. The older patches were surrounded by a reddish margin, but no masses of pigment could be seen anywhere in the fundus, and no retinal or chorioidal hemorrhages. The vitreous remained entirely clear, and the vision was but slightly affected, showing that the retina was but little, if at all, involved in the process. There was no limitation of the field and no scotoma, and no disturbance of the color perception.

The patches of exudation in the chorioid presented a very different appearance from that of chorioiditis areolaris disseminata, or from that of the chorioretinitis associated with general constitutional syphilis.

Occasionally I have seen faint peripheral striæ of opacity in the lens of both eyes, but these did not extend, and eventually entirely disappeared. These cases all showed a marked cutaneous eruption of the pemphigoid type, some of the bullæ on the abdomen and inner surface of the thighs being quite large. The contents of these bullæ have frequently been examined by Elsching, Valude, and others, and a diplococcus has been isolated from the bullæ and injected into the veins of rabbits, and invariably caused death. The diplococcus removed from the blood of the poisoned rabbit was identified with that removed from the pemphigus bullæ, and when injected intravenously into a pig produced a pustular eruption.

The *prognosis* as to vision in these cases is good, especially if the patient gradually recovers from the general toxic infection.

As regards the *treatment* of these cases, before the administration of any drugs specifically directed towards the chorioiditis, it is at first wise to introduce such dietetic and therapeutic measures as seem best indicated to regulate the digestive tract, for such measures will essentially improve or cure the chorioiditis, after failure of all other forms of treatment.

The treatment should later consist of the administration of iron, arsenic, and strychnia, the two latter drugs being given separately, so that the dose of each may be increased or diminished according to indications. Under this treatment, the patches of exudation lose their yellow color, and become paler, slowly diminish in size and become less clearly defined, the red ring rapidly fading away. At the periphery of the fundus the patches disappear entirely, while those in the vicinity of the posterior pole of the eye are more or less permanent, though in several patients, after a lapse of three years, they were distinguished with difficulty.

THE TREATMENT OF TYPHOID FEVER AND PNEUMONIA.

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Symposiums on typhoid fever, pneumonia, etc., we have had in our societies, and continue to have. They are often good to attend, and the newcomers in our ranks will always be glad to listen to what clinicians of experience may have to say to them. When the discussion is ended, there is a mass of individual testimony as to pathology and therapy, and the hearer—particularly the younger disciple of the healing art—can make his choice of what he thinks best for diagnosis and treatment in his next case.

A summing up and final agreement upon the best mode of treatment which ought to hold good for a year or more or, at all events, until the next symposium goes over the same ground again, would be serviceable, I opine, and be heartily welcomed by many members, so far as I have been able to ascertain.

It is a matter of common experience that every active practitioner not only watches and nurses a case of pneumonia or typhoid fever, but really treats it, hoping by such treatment to insure the favorable outcome which he trusts or expects will take place anyway. For this very reason I may be allowed to state briefly what mode of treatment has served me well in

Typhoid Fever.—Far be it from me to belittle the laboratory—etiological—diagnosis of typhoid fever, yet I have always held and taught that a case of this disease can be diagnosed by its well-known syndrome, and be under safe care and management before, and often many days before, the agglutination test confirms our diagnosis. Now, when we witness an epidemic of typhoid or examine a sporadic typhoid case brought into the hospital ward in the second week of the fever, there will be no difficulty in diagnosing the case correctly, but it is in some of the milder sporadic cases of typhoid and typhoid-like diseases that the difficulty of exact diagnosis presents itself. I am ready to confess that it is mainly through cases in private practice that I have learned that typhoid fever is not a uniform disease, and that there are not only different degrees of real typhoid, but also some typhoid-like diseases which it may be difficult and sometimes even impossible to distinguish and classify properly. We have known for quite a while that the *Bacillus coli* may become virulent and produce a sort of typhoid; we have learned in recent years of the paratyphoid bacillus giving rise to somewhat of a true typhoid. Last July I had a case of scarlatina in a lad of nineteen, followed by typhoid fever fifteen days after the initial sore throat and rash, and running a typical course. In September last I observed two cases of subacute enterocolitis which

had been clinically diagnosed as typhoid, but the agglutination test remaining negative as often as it was made, the diagnosis could be properly corrected. Four weeks ago I was called to see a patient who had eaten badly cooked or spoiled liver sausage early in January of this year, and within a few hours after ingesting the stuff he was seized with nausea and vertigo, but not vomiting. He took one ounce of castor oil early the next morning, with good effect, felt better for a day or two, and then went into a low state of fever lasting three weeks, and presenting the usual clinical symptoms of mild typhoid, but the agglutination tests remaining negative, the diagnosis of typhoid fever could be replaced by the proper one of enterocolitis.

In all cases of the kind mentioned, and others of a similar nature, the agglutination tests are indeed of great help, but if the physician comes to believe that one or two early tests are adequate to settle the diagnosis *pro* or *con*, further experience will soon tell him that this is not so, and that the agglutination tests do not always show up when we think they ought to.

Whether the Eberth bacillus, the paratyphoid bacillus, or the colon bacillus will be found to be the etiological factor in typhoid fever need not make a bit of difference in the treatment.

Ever since I read of the splendid results which Erb and Binz had in treating typhoid fever with a single full dose daily of quinine, in the German field army during the Franco-German war of 1870, I have followed pretty much the same method. The results which those authors had at the time were far better in their cases than in those which were treated by coal-tar antipyretics, or by the expectant plan, that is, by doing nothing for the patient until something serious demands action, and when that action not infrequently does not avail.

In the initial stage of typhoid fever almost every physician orders calomel or some other purgative to clear the bowels. It is done not only in this, but in every acute infection; surgeons do the same, and it is well, for by it offensive material will be removed from the intestines; but as to calomel or any other so-called germicide doing much good by sweeping out a lot of typhoid bacilli and thereby diminishing the virulence of the infection, that is truly a forlorn hope. For at the stage of infiltration of the intestinal follicles, the blood already swarms more or less with typhoid bacilli, not only so, but it is very probable that the bacilli enter the blood current before any intestinal localization has taken place. A moderate dose of sulphate of magnesia would answer our purpose as well, I think, here as it does in abdominal surgery cases. This having been done, I order a daily evening dose of quinine muriate, fifteen grains to an adult, one-half of that to a patient under fourteen years of age, to be given in one dose or in two or three divided doses, and to be continued daily until the chart shows defervescence. In cases in which the temperature reaches its maximum toward the end of the first week, and all circumstances point to a severe infection, I have ordered 7½ grains at four, six, and eight P.M., with singularly good, and never with harmful results. To be sure, a case of idiosyncrasy will be met with once in a great while, where quinine will not be borne by the patient.

In such a case, tubbing, after Brand, is probably the best thing we can do, for the resports from our city hospitals, where the Brand method is practised, show us many more convalescents from typhoid fever than they had before, by the expectant treatment and good nursing alone. In private practice, however, two competent nurses are needed for giving the Brand baths in the proper way, and careful supervision on the part of the doctor is essential. Where these requirements cannot be fulfilled a modified course of hydrotherapy, in the manner so ably described and explained by Dr. Baruch in his book on hydrotherapy, may be confidently applied.

In regard to the diet appropriate for the typhoid patient, the last word can be said, I think. Peptonized milk and farinaceous foods, and pure water *ad libitum*, until the disease is at an end, and then soft diet for a week or two longer. I have seen mischief follow the introduction of solid food in some cases of typhoid with more or less pronounced intestinal localization, and I hold that no conscientious practitioner ought to take it upon himself to go contrary to the rules for diet laid down by Osler and other experienced clinicians.

Pneumonia is a self-limited disease, so Austin Flint said and wrote many years ago. If so shrewd an observer and physician as Austin Flint looked rather kindly on lobar pneumonia as it ran its course in his days—and how many cases may he not have seen before he uttered his dictum—he must have had very good reason for it, but pneumonia as we have had it with us the last twenty-five years is an alarming and frequently fatal disease, and always a source of considerable anxiety to the attending physician.

It seems to me that the classical chill and rapid filling up and consolidation of an entire lobe of the lung are not so much the fashion as in years gone by, and resolution by lysis is at least as frequent as, if not more so, than by crisis. Not infrequently a part of a second lobe is affected before the first has cleared up, and further, we meet with cases in which we have two or more days of anxious waiting before the pneumonic process starting from the center reaches the periphery and permits us to be certain in our diagnosis. Again, we have had the grippe with us since 1889, and those who have seen much of grippe pneumonia will know how tedious such cases are and what a long wait it is before they recover.

In treating pneumonia I have put my faith in quinine, digitalis, and the cold, wet compress applied around the affected side from sternum to spine, and frequently changed; eventually heart excitants, such as hypodermics of camphorated oil and stimulants; and in so doing I have been but seldom disappointed as to the outcome of the disease.

As soon as the diagnosis is fairly well established, a daily evening dose of 7½ or 15 grains of quinine muriate, according to the age of the patient, is given in one or in divided doses, then the cold-wet compress is snugly applied, covered with oil-silk and flannel, and frequently changed. By this application the pleuritic stitch and dyspnea will soon be relieved and a hypodermic of morphine is generally avoided. Delirium and insomnia I find best relieved by five grains or more of Dover's powder, and occasional enemas of tepid water; a good large room and a plentiful supply of fresh air day and night are essential for the welfare of the patient. To *take the pulse frequently*, carefully count and prove its strength, is very important indeed. At the first sign of cardiac weakness quinine is discontinued, and a freshly-made infusion of English digitalis leaves (½ dram to six ounces), ½ ounce every two or three hours, administered until cardiac action has improved. When we cannot afford to wait for the sometimes slow action of the infusion of digitalis we have now a rapidly acting preparation in Cloetta's soluble digitoxin, a prepared solution of which may be given by mouth or hypodermatically. This is reliable and prompt in its effect. For quickly

stimulating a failing heart I prefer hypodermics of camphorated oil in one-half dram doses every half of one hour, to combinations of strychnine and nitroglycerin, though I would not object to their use if another man should wish to give them the preference of camphorated oil.

Barring the rapid consolidation of an entire lung or the greater part thereof, in which a copious venesection is indicated to save the heart and the patient's life, it is not the overloading of the right heart in the average case of pneumonia which threatens to paralyze the organ, but rather the acute and severe intoxication of the system by the pneumonic toxins; I do believe that in quinine, given in fairly large doses once in twenty-four hours, we have a remedy which really counteracts such toxins and thereby probably diminishes the severity of the infection.

Grippe pneumonia, on the other hand, is a different proposition altogether: it may come slow, it may come fast, it almost creeps over various portions of one or both lungs, it lingers, and when it finally gets well convalescence is slow. I know of no remedy which could be called a remedy here, and therefore careful nursing and judicious symptomatic treatment are our main reliance.

25 West Forty-sixth Street.

PUS TUBES IN THE MALE.

TREATMENT BY INJECTIONS THROUGH THE VAS DEFERENS.

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Pus infection of the seminal tube, including the vesicle, appears to be quite as frequent as pus infection of the Fallopian tube in the female. It is, however, not so often recognized, for its usual symptoms—pyuria, frequent and painful urination, and partial or complete retention of urine—are usually referred to the bladder and prostate, and the patient therefore treated for cystitis and prostatitis.

The infections of the seminal tubes are three—the gonococcus, pyogenic bacteria, and the tubercle bacillus; as the last induces suppuration only with the aid of the pyogenic bacteria, it will be omitted from consideration as a cause of pus tubes in the male. The pus infections of the seminal tube are extensions from the deep urethra; they result from (1) gonorrhea, (2) stricture, (3) prostatic concretions, and other causes of prostatic suppuration in middle-aged and elderly men.

Invasion of the seminal vesicle by the gonococcus induces the symptom complex usually considered indicative of prostatic abscess—frequent and painful urination, complete retention of urine terminated by a sudden discharge of pus, often an ounce or two, into the urethra. These phenomena are usually due to abscess formation in the seminal vesicles, as emphasized by Lloyd[1] fifteen years ago; or in the utricle,[2] as shown by myself twelve years ago.

A typical gonorrheal abscess of the utricle was recently observed by Dr. L. E. Schmidt and myself; the symptoms were those usually ascribed to prostatic abscess, but the fluctuating swelling was greatest midway between the lateral borders. With the fingernail the abscess was incised from the rectum; after the escape of perhaps an ounce of pus, the lateral lobes and median groove were distinctly felt.

Stricture of the bulbous urethra favors pus infection, which, beginning in the poorly nourished tissues, extends backward through the deep urethra into the seminal duct and vesicle, at times even to the epididymis. As the infection may extend forward in the urethra also, and thus produce a pus discharge from the meatus, the entire clinical picture simulates a gonorrhea, and by physicians who neglect to examine the pus with the microscope it is often so called—to the disgust and indignation of the innocent patient.

The nongonorrheal infections of the seminal tube in men over forty years of age are, like everything else causing bladder symptoms in these patients, labeled "prostatic hypertrophy"; and they do indeed cause the same symptoms, including even complete retention of urine. These are the cases of alleged prostatic enlargement that were benefited by vasectomy, when that operation was popular. The prevalent rage for prostatectomy causes the unfortunate subject of vesiculitis to be accused of harboring an enlarged prostate and to be condemned to prostatectomy. A typical example of this common ailment of elderly men was a patient seventy-two years old, seen with Dr. Henrotin nearly three years ago. He suffered from the usual symptoms of "cystitis" for several weeks, culminating in complete retention of urine. The left seminal vesicle was distended and tender, the prostate merely swollen; incision of the abscess was declined, but the pus traversed the vas, causing an abscess of the epididymis. When this was opened and the vesicle thereby drained, the bladder function was completely restored and the patient has had no urinary trouble since. A case practically the duplicate of this was seen with Drs. Billings and Phillips about the same time. By all the canons of the general surgeon, both these old men should have been subjected to prostatectomy—though their prostates were in no wise to blame, unless indeed because of the irritating presence of prostatic concretions, universally found in men past middle age.

The pus infections (nongonorrheal) of the seminal tube, especially in elderly men, constitute an almost wholly neglected field; the obvious explanation is that already indicated—namely, the practical identity of symptoms with those caused by infections of the prostate and bladder, from which pus tubes have not been clinically distinguished. One whose attention has never been directed to this topic will be surprised to discover the number of cases treated for cystitis, prostatitis, and "prostatic enlargement," whose lesions are really pus infections of the seminal tube and vesicle. The differential diagnosis is by no means difficult; the usual mistake in diagnosis arises from the habitual failure to recognize pus tubes as the cause of pyuria, frequent and painful urination, and partial or complete retention of urine.

Gonorrheal infection of the seminal vesicle, on the other hand, has been frequently identified, since Lloyd[3] called attention to its occurrence and advised incision of the suppurating vesicle with a long-bladed knife through the perineum. About the same time Dittel,[4] the father of perineal prostatectomy, used the incision which he had devised to attack the prostate, for exposing and incising gonorrheal abscesses of the seminal vesicle. Dittel's operation was later modified and developed by Fuller,[5] who has reported 74 cases in which he has attacked the vesicle for suppuration and other lesions through this extensive perineal dissection.

The Dittel-Fuller operation is admittedly severe and bloody, entailing risks and requiring weeks of confinement to hospital. It seems justified, if at all, only in cases of perivesiculitis, since the immediate

relief sometimes demanded by pyovesiculosis is furnished far more simply and safely by incision with a cautery knife from the rectum. (The cautery is preferable to the knife for this incision, because it avoids bleeding, averts infection, and prevents premature closure of the wound.) But a much simpler and more effectual medication of the seminal tube and vesicle is secured by the operation that I have devised and practised,[6] which can be done in the office. It consists essentially in opening the vas, stitching the cut edges to the skin, and injecting through a curved hypodermic needle any chosen solution into the proximal vas; this liquid traverses the vas and ampulla and enters the seminal vesicle. By digital massage from the rectum, the injected liquid can be expressed into the urethra if desired. Through the fistula daily injections of the vesicle can be made so long as seems necessary, after which the fistula is easily closed. Complete transverse section of the vas may safely be made, if preferred, since anastomosis of the cut ends and restoration of the lumen is easily accomplished. For injections through the vas the solutions commonly employed in the urethra are used; but the first injections should not exceed thirty to sixty minims, lest spermatic colic and retention of urine be provoked. Both of these effects I witnessed in my earlier work; the spasmodic contraction of the vesicle seems to cause spasm of the bladder sphincter—an item of both clinical and physiological interest. The influence of the seminal ducts upon the bladder and its sphincter suggests an explanation of the cause and cure of "irritability" of the bladder in some cases.

1. *Lancet*, 1891, II, p. 974.
2. *Journal of the American Medical Association*, April 21, 1894.
3. *British Medical Journal*, 1889, I, p. 882.
4. *Wiener medizinische Blätter*, 1894, p. 261.
5. *American Journal of Urology*, December, 1906.
6. *Journal of the American Medical Association*, April 22, 1905; *Surgery, Gynecology and Obstetrics*, November, 1906.

100 State Street.

THE PREAPPENDICITIS STATE.

By JOHN G. SHELDON, M.D.,

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It is generally believed by the laity and the medical profession, and it is taught by our modern textbooks, that acute appendicitis is sudden in its onset, and that it develops without previous symptoms suggestive of the disease. (The well known varieties of chronic appendicitis that may be subject to acute exacerbations are, of course, not considered in the foregoing.) Recently, there seems reason to believe that our views regarding the onset of acute appendicitis will undergo a change. Some clinical observers no longer hold that acute appendicitis should be looked upon as a primary and very acute affection, but consider it, at least in some instances, as the result of a chronic process that has paved the way for its occurrence. Mumford and Stone, after considering appendicitis from all standpoints, state that "it seems as though we were often justified in regarding appendicitis as a chronic disease clinically, and subject to acute exacerbations."

A limited operative and clinical experience, associated with the ordinary work of a general practitioner, has led me to believe that acute appendicitis rarely occurs without previous, more or less definite, symptoms having been complained of for three months to one year. This conclusion has resulted from the obtaining of definite histories of acute appendicitis cases operated upon; and, by examining, and keeping in touch with the developments in patients complaining of obscure and very mild gastrointestinal symptoms. An accurate history of the symptoms of the patients whom I have operated upon for primary attacks of acute appendicitis during the last three years, has shown in almost every instance that, while the patients invariably date the history of their illness from the beginning of the acute attack, they have suffered from slight and occasional abdominal pain, and many times constipation and flatulency, for a period of several months before the acute involvement of the appendix began. These so-called preappendicitis symptoms have been found to be so often present in cases of acute appendicitis that it seems probable to me that their occurrence is the rule and not the exception. Their existence is easily overlooked. They are mild and of long standing, while the acute attack is so definite and so serious that it completely overshadows the patient's previous complaints.

It is a common experience in general practice to be consulted by patients, who have been apparently well in every respect, complaining of unusual, mild, and diffuse pain in the abdomen, with perhaps a loss of appetite and moderate constipation. A careful examination of these patients revealed, in most instances, no cause for the symptoms. A cathartic generally relieved them. When, however, these symptoms had existed for a period of three to six months, during which time the symptoms would disappear for a week or ten days at a time, examination revealed in most instances a very slight tenderness over the appendix. Repeated examinations showed that this tenderness was not constant. The symptoms and findings did not warrant a diagnosis of chronic appendicitis, consequently no diagnosis was made, but the patients were kept under observation. Eighteen such patients developed acute and serious appendicitis within three months to one year after the first complaint of the mild and indefinite abdominal symptoms. Five others gradually developed chronic appendicitis for which operation was done. Three patients are still under observation, who supposably have been in the preappendicitis state for four months, seven months, and nine months respectively.

If it is true that acute appendicitis is many times preceded by the so-called preappendicitis state, the symptoms of this period, according to the cases observed, would be intermittent diffuse, but slight abdominal pain in all of them; moderate constipation in approximately three-fourths of them; noticeable abdominal distention in a few; and slight, but not constant, tenderness over the appendix on deep pressure. The frequent finding of these symptoms in a patient who later developed acute appendicitis, together with the history of the frequent occurrence of such symptoms preceding a primary acute appendicitis, suggested the existence of a preappendicitis state.

The practical importance of recognizing the preappendicitis state, if such exists with any degree of constancy, bears directly on the present mortality of acute appendicitis. We are perhaps not justified in advising operation for patients in the preappendicitis state; but we should warn them of the probability of suffering from an acute attack of appendicitis in order that they may seek competent advise at the beginning of the acute symptoms. Such advise may seem unnecessary when we consider all that has been said regarding the diagnosis and treatment of appendicitis; but the present mortality of acute appendicitis should be reduced. Entirely too many cases are brought for operation after perforation and local or general peritonitis have occurred.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE FUNCTION OF ALKALOIDS IN PLANT LIFE.

THE study of the vegetable alkaloids has been prosecuted so diligently and so successfully in recent years that the chemical structure of fifty of these substances is now known in detail, and twenty of the structural formulas have been confirmed by artificial synthesis of the corresponding alkaloids. The origin of these bodies and the part played by them in the life of the plant are discussed by Aimé Pictet in a paper recently read before the Swiss chemical society of Neuchatel.

The sources of alkaloids, he says, and the processes by which they are formed in vegetable cells, have long been matters of discussion. The old theory of Heckel that the alkaloid is the first result of assimilation, and represents a stage in the formation of albuminoids has been shown to be erroneous. Lartz and Clautrian have proved that the true alkaloids, such as quinine, atropine, cocaine, morphine, caffeine, solanine, and betaine, cannot serve as plant food, that the quantity of these alkaloids in the seed increases, instead of decreasing, during germination, and that a diminution of the quantity of alkaloid is never accompanied by a corresponding increase in albuminoids. So that we are led to regard the alkaloids, not as products of assimilation, but as results of the partial decomposition of more complex substances. Certain groups of atoms, or parts of the complex molecule, appear to be more stable than others, and these groups resist disintegration and appear as alkaloids. The alkaloids, being nitrogenous decomposition products resulting from vegetable metabolism, are analogous to the urea, uric acid, and bile pigments of animals. But the plant cannot, like the animal, promptly get rid of the waste products because it has no eliminating organs. Some plants, no doubt, find means of destroying their alkaloids so rapidly and completely that they do not appear to produce any. In other plants this process, if it occurs at all, is slow and imperfect, so that the organism is compelled to retain its excreta for a time and to confine them to certain cells and tissues where they cannot injuriously affect the general life of the plant. Hence the characteristic localization of alkaloids in such peripheral parts as roots and fruits, where, as they are poisonous to many animals, they incidentally serve as a protection to the plant. This power of localization of alkaloids is, therefore, of advantage in the struggle for existence, and it is most strongly developed in the most highly organized plants.

Such localization, however, is not the only means by which the plant can protect itself against the injurious effects of substances which it can neither eliminate nor destroy. In the animal organism poisons, whether resulting from metabolism or introduced from without, are not usually excreted unaltered, but undergo various changes which make them less poisonous or more soluble, and therefore easier of elimination. The change may be simple oxidation, combination with other substances, or both. That plants, which possess greater powers of synthesis than animals, adopt similar methods, and that the alkaloids extracted from plants represent the poisonous products of excretion not in their original form, but in combination, appears probable for the following reasons: In most vegetable alkaloids the molecule is composed of two distinct parts, a nitrogenous nucleus and one or more groups of very different chemical character. Again, when a plant yields several alkaloids, which is usually the case, all have the same nucleus, and differ only in the number and character of the secondary groups. Finally, the plant, like the animal, makes its nitrogenous excreta more complex, thereby neutralizing the atomic groups which have a poisonous action on protoplasm.

Caffeine, theobromine, and theophylline, the alkaloids of coffee, cacao, and tea, as well as many others, have an origin identical with that of their animal analogues, such as uric acid, from which artificial caffeine is now made. They may be regarded as decomposition products of nuclein. The alkaloids of the choline group have a similar origin. Choline, a nonpoisonous alkaloid, is found in toadstools and hops, and also in pickled herrings and human corpses. In the animal tissues it arises from the saponification of one of its compounds, lecithin. Vegetable choline and its immediate derivatives, muscarine (the poison of toadstools) and sinapine (found in white mustard seed), undoubtedly owe their existence to a similar reaction. We must, therefore, regard all these alkaloids as decomposition products of vegetable lecithin. Nicotine, atropine, cocaine, and strychnine may be derived directly from albuminoids, which appear also to be the indirect sources of the alkaloids of opium, cinchona, and some others.

TROPICAL NEURASTHENIA.

THE experiences of many of the Americans who have gone to the Philippines illustrate only too well the fact that prolonged sojourn in tropical regions is usually attended, in white persons coming from the temperate latitudes, by a great depreciation in the powers of mental and physical application, often going on to such a degree as to render imperative a speedy return to more accustomed climatic conditions. Strange to say, writers on tropical life do not appear to have given this form of neurasthenia the attention it deserves: at least there have been but few contributions to the literature of the subject. Among the more important writings on this matter are those of Major Charles E. Woodruff, who speaks of the condition as being so common an occurrence as to merit the special term of tropical exhaustion, and states that in addition to its more patent manifestations it re-

duces the powers of resistance to every disease as, it lessens the natural immunity.

A careful study on the subject by Louis H. Fales appears in the *American Journal of the Medical Sciences,* April, 1907. He states that from his Philippines experience he believes that nearly all American women and a large proportion of the men who have been in the islands for a year or more suffer at least to some extent from nerve exhaustion. A conservative estimate, he says, would be that 50 per cent. of the women and 30 per cent. of the men are affected to such an extent that they are in a state of semi-invalidism. They lose the power of mental concentration, suffer from loss of memory, become easily fatigued, and are inefficient as workers. The women become nervous, irritable, and anemic, lose weight, suffer with neuralgia and insomnia, and almost invariably are troubled by menstrual irregularities. Fales further expresses the opinion that, directly and indirectly, tropical neurasthenia incapacitates more white men in the Philippines than all other causes combined, and seems to be the main difficulty in the process of acclimatization.

In general the nerve exhaustion of the tropics does not differ greatly from the neurasthenia seen in this country, but menstrual derangements such as menorrhagia, metrorrhagia, and dysmenorrhea are unduly frequent in the women patients. Vasomotor symptoms such as angioneurotic edema and pemphigus, localized sweatings, etc., are also common. Fortunately, the condition responds to treatment more promptly than ordinary neurasthenia, and change of climate is usually effective. The greater prevalence of the condition in the tropics naturally leads to inquiry regarding the special etiological factors that may exist in such regions. No doubt the lack of willingness or ability to conform to the habits of the native in regard to hours of work, the noonday *siesta,* and other time-wasting but health-conserving customs of the country plays a large part in the downfall of the energetic white man in hot countries, and there must be added to this the predisposition to nervous exhaustion attending certain common tropical diseases such as dengue and amebic dysentery. Fales expresses himself rather conservatively in speaking of the alcohol question and in this connection quotes Woodruff's figures, which appear to show that the use of alcohol is not especially detrimental in the tropics. He suggests that the moderate use of alcohol may serve to prevent infection by intestinal parasites by stimulating the action of the gastric secretions and by a direct antiseptic action on the parasites themselves.

Rather more importance is accorded to Woodruff's theory of overstimulation by the excessive quantity of actinic rays present in tropical sunshine, which has already been discussed in these columns, and concerning which the author says that there can be no doubt that this effect of the violet and ultraviolet rays plays an important part in the etiology of tropical nerve exhaustion. He lays most stress, however, on the high temperature and high humidity that prevail in the Philippines, as the result of which there is an almost constant abnormal dilatation of the arterioles of the skin. This leads to an anemia of the internal organs, of course including the central nervous system, with the result of nervous malnutrition and derangement. An ingenious portion of the author's argument is that in which he points out that, owing to the smaller relative skin surface of large men, these require more active cutaneous circulation in order to effect a sufficient cooling of the blood, and that in consequence they must be particularly prone to evidences of nervous anemia and cardiac overactivity, a supposition which is borne out by the facts.

From these considerations it is evident that the proportion of persons for whom a prolonged stay in the tropics is likely to be possible without more or less risk must be a rather small one. Woodruff has stated that the best age is from twenty to thirty or thirty-five years, and that no man over fifty-five should go there for more than a short visit. Fales believes that the tropics should be avoided especially by blondes, large men with great musculature, those with tuberculous tendencies, those having gastric or intestinal disorders, neurasthenics of all sorts, women, children, and old men. The requirements of tropical hygiene involve avoidance of the actinic rays as much as possible, including the use of sun shades and clothing properly selected as to color and material, and refraining from overwork, especially from exertion during the middle of the day. Five hours is to be considered a fair day's work. In regard to diet, it is a mistake to believe that dwellers in the tropics need little meat. The greatest care is also necessary in preparing the food in order to avoid intestinal infection, and green vegetables and unboiled water must be shunned.

From all of this it appears that only such persons as are physically and mentally fitted for it should go to the Philippines, and that while there they should use common sense in conforming to local customs regarding work, rest, and clothing, and what might be termed uncommon sense in the selection of their food and in the supervision of the details of its preparation. These conditions complied with, the dangers are perhaps not so very great, but it is evident that infractions of the rules of hygiene are even more likely to be fraught with serious consequences in the tropics than in the temperate latitudes.

PYELITIS IN CHILDHOOD.

Among the uncommon and unfortunately often unsuspected conditions found in children is an inflammation of the renal pelvis. This may be due to the ingestion of certain medicaments or to mechanical or toxic irritants. In older children it may also be due to a faulty diet leading to an excess of uric acid or urates in the urine. In exceptional cases the presence of certain parasites such as echinococcus, strongylus, or distomum, may lead to the disease on account of the deposit of eggs or embryos in the urinary passages. Extreme degrees of phymosis, hypospadias, or pressure exerted on the bladder or ureter may lead to infection of the mucous membrane of the renal pelvis by producing decomposition of the urine. A pyelitis may occur during the later

stages of one of the infectious diseases, particularly scarlatina or variola. Tubercle bacilli which have found their way into the urine may also lead to a tuberculous infection of the pelvis, and the gonococcus may likewise produce a specific local inflammation by direct extension from a vulvovaginitis of this character. In every case the disease is ushered in by a chill, followed by a moderate elevation of temperature unless urinary stasis is present, when the fever will be much higher. When there is profuse suppuration present, localized pain is also complained of, and this may be referred to the bladder, the meatus, the perineum, or the thigh. There may also be a severe dysuria. The most important point in the diagnosis is to be gained, however, from the uranalysis. The total quantity of urine may be unaffected or slightly increased, but the pus which is invariably present gives the fluid a cloudy appearance, which increases on standing. The sediment on microscopical examination will be found to be mainly pus, together with the characteristic cells from the pelvis of the kidney. Albumin is present in varying degree depending on the amount of blood or pus.

The prognosis is fortunately good in most cases if the condition is not neglected. In acute cases in which the condition is due to medicinal or even mechanical irritants, healing takes place within from one to four weeks. When the pyelitis is due to urinary decomposition recovery is likewise prompt if the cause of the latter can be removed, but when a growth is present the outlook is less favorable, and a fatal result may be determined by uremic poisoning. A pyelitis due to one of the infectious diseases is apt to run a protracted course, and even when recovery takes place recurrences are frequent. In treating this disease, Monti (*Allgemeine Wiener Medizinal-Zeitung*, 1907, No. 1) calls attention to the importance in all acute cases of absolute rest in bed and a milk diet, and this must be continued until the urine is entirely normal. As soon as a recurrence is noted this same regime must again be instituted. Diuretic measures are also indicated, and much good results from the use of warm baths lasting from fifteen to twenty minutes, of either plain or sea water, mud, or the water of some natural thermal springs. When an irritating medicament is at fault, its administration must be stopped and the excretion favored by various means. Local measures, including bladder irrigation, are required in appropriate cases, and the urinary antiseptics may also be given, though with care, as they are very apt to cause considerable disturbance.

The Scrotal Tongue.

This is the rather inelegant name applied to a peculiar condition of the tongue which is occasionally met with, and in which the dorsal surface of the organ is the site of a number of symmetrical furrows which give it a shriveled appearance similar to that seen in the skin of the scrotum. It is necessary, as shown by Chambardel in a recent article in the *Archives Générales de Médecine*, No. 44, 1906, that this condition be carefully distinguished from the pathological furrowing of the tongue which is associated with carcinoma, syphilis, tuberculosis, and similar lesions, and the physiological furrows which are found in many persons on either side of the median line. From both of these the deformity of the tongue in quetsion may be distinguished by the symmetry and depth of the furrows which extend over the entire dorsal surface of the organ and around on the sides. An hypertrophy of the labial papilla is frequently seen, but this has no apparent connection with the other condition. The tongue thus afflicted is of a bright red color, and is usually broad and flat. The mouth itself may be perfectly normal in other respects, except that there is very apt to be an enlargement of the salivary glands, and their secretion is increased. In isolated instances an hypertrophy of the lacrymal glands has also been observed. Although a tongue of this kind may not give rise to any symptoms, it offers a favorable field for the development of leucoplakia, glossitis, ulcers, and a variety of other local processes. We know practically nothing of the etiology of this condition, and the histology is likewise uncertain. The only direction in which an insight into the true nature of the lesion may be gained would seem to be from the standpoint of embryology or comparative anatomy.

Meningeal Irritation from Spinal Anesthesia.

The not infrequent reports of serious complications attending the employment of cocaine for purposes of medullary anesthesia must naturally dampen the enthusiasm with which this procedure has been advocated by many surgeons. It is of undoubted value in many instances as a substitute for ether or chloroform, but from the number of accidents which occur as the result of its administration it would appear that the indications for its use have not thus far been completely formulated. Among sequelæ of spinal cocainization which are less frequently observed are evidences of meningeal irritation. A few instances have been reported, and to these another is now added by Schick (*Wiener klinisch-therapeutische Wochenschrift*, No. 46, 1906), who undertook to do a curettage for an incomplete abortion, in a very nervous patient, by the aid of medullary narcosis. The injection was made in the usual manner and the patient then placed in the Trendelenburg position for a few minutes. The operation was successfully done, and the woman made an apparently good recovery. On the third day, however, she was seized with a severe headache, which was accompanied by an increasing rigidity of the neck muscles. The pulse rate then dropped to from 48 to 54 beats per minute. There were no psychic disturbances and no ocular symptoms. Vomiting was also present, and this, with the other symptoms, persisted for about eight days, when a gradual improvement took place. These phenomena, which were most marked, gave every evidence of being due to a meningitis, and yet the latter could with considerable certainty be excluded. It is possible that severe nervous disturbances of this kind may depend, to a large extent at least, on some peculiar idiosyncrasy regarding the drug manifested by nervous persons. If so, patients of this class would seem to present a particular contraindication against the employment of the procedure in question. In omitting the elevated pelvic position, the writer thinks it might be possible to limit the field of action of the anesthetic, and this is applicable to most of the gynecological operations. To the impartial observer the occurrence of such serious sequelæ constitutes, however, a drawback to the use of the spinal anesthesia which is hardly counterbalanced by its assumed advantages.

Decision Regarding Abortionists.

The Appellate Division of the Supreme Court on April 19 wrote an opinion which will prove of great assistance in securing convictions of professional abortionists. Some time ago the Medical Society of the County of New York, through its counsel, caused the arrest of a woman who had placed in certain New York City newspapers an advertisement of unequivocal import. She was charged with maintaining a public nuisance in violation of Sections 385 and 387 of the Penal Code, inasmuch as she received into her house pregnant women and used instruments upon them to procure unlawful abortions. The defendant was tried in the Court of Special Sessions and sentenced to one year in the penitentiary and to pay a fine of $500. The case was appealed on the ground that no crime under Section 385 of the code was committed, and that no adjudicated case has been found in which it has been held that the maintaining of a house for the purpose of practising the vocation of an abortionist constitutes a nuisance. The Superior Court, however, affirmed the conviction, stating that it is a nuisance for a person by public advertisement to invite and receive a class of the public to his premises for the purpose of violating the laws of the State, as was done in this case. It is further stated that the offense of abortion is one thing, but that of maintaining premises open to the public for the purpose of consummating that crime is another and separate offense against the peace and good order of the State. It is an inducement to moral laxity and to crime, and is within the letter and spirit of the sections of the Penal Code under consideration. The counsel of the County Medical Society state that this is the first case of its kind recorded either in this country or in England, and that now that this precedent has been established it will be much easier to secure convictions for illegal abortion, as there will no longer be the necessity of laying elaborate traps to catch a defendant *flagrante delictu*.

Hysterical Fever.

The existence of a rise of temperature depending on an hysterical basis has often been questioned, and yet cases undoubtedly occur in which no other cause than a nervous one can be found to account for the fever. An instance of this kind is referred to by Comby in the *Bulletin Médical*, 1906, No. 36, as having taken place in a girl of thirteen who was rather weakly, and had been the subject five years previously of an attack of what was called subacute peritonitis, which was probably of a tuberculous nature. The symptoms improved, but several years later she became afflicted with a tremor of the arms following a mild attack of influenza, which was characterized by a relatively slight rise of temperature. After this the course of the temperature presented several points of interest; although never over 100° F. in the morning, it would rise to 107° F. in the evening. Notwithstanding this enormously high temperature in the evening, there was apparently no marked effect on the patient's general condition, and after the fever subsided the child spent the rest of the night quietly. The general character of the case led to the thought that an hysterical basis was the underlying factor in the production of the high fever, and the patient was treated with wet packs and psychical influences, which finally resulted in complete recovery. Such instances have occasionally been reported in the literature, and we may assume that, in children particularly, where no organic disease can be found to account for a continued high temperature, the rise in temperature is of purely hysterical origin.

Tuberculous Meningitis without Tubercles.

In a recent issue of the *Lancet* (April 13) reference is made to an interesting case recently reported by Sireday and Tinel, who call attention to the fact that, although tubercles of various forms anatomically characterize tuberculosis, they are in some cases absent, especially when the disease is located in the central nervous system. Thus meningitis may be occasioned by a diffuse bacillary infiltration or even tuberculous toxins. The authors referred to report the case of a boy admitted to hospital in a comatose condition. He had been sick for two weeks with headache and vomiting, and gradually became comatose. Rigidity of the neck, photophobia, wasting, mydriasis, irregularity of the pulse, the meningeal streak, Kernig's sign, and lesions at the apices of the lungs left no doubt as to the diagnosis of tuberculous meningitis. Lumbar puncture showed marked lymphocytosis of the cerebrospinal fluid and some polynuclear cells. The case ran the ordinary course and death occurred after an illness of almost eight weeks. At the necropsy the most minute examination failed to show any tubercles on the meninges or in the cerebral cortex. To the naked eye the changes consisted in an intense congestion of the nervous centers, of which the vessels were much distended. The meninges had lost their transparency and at several points showed a slight thickening with a milky tint, little pronounced. The meninges could be raised without tearing the adjacent cerebral substance. The subarachnoid space and the ventricles contained a notable quantity of liquid. The lungs showed diffuse tuberculous lesions, large granulations of the size of a lentil confluent in some places, disseminated in others. Microscopic examinations revealed numerous tubercle bacilli in these granulations. To the naked eye the kidneys showed nothing abnormal, but the microscope disclosed little tuberculous nodules. Microscopic examination of the meninges showed a diffuse leucocytic infiltration without any tuberculous granulations. In some places the cells were agglomerated into little nodules, but nowhere was there a definite tubercle. The case exactly corresponded to the type described by Delille as "diffuse leucocytic infiltration, predominantly perivascular, and with tendency to nodules." In no preparations could giant cells or caseous degeneration be seen—nothing suggestive of formation of tubercles. But large numbers of tubercle bacilli were disseminated wherever there was leucocytic infiltration of the membranes. They were especially grouped around the blood-vessels, forming in certain places little agglomerations without modification in the form or grouping of the neighboring cells.

Abscess of the Liver.—Excellent results may be obtained in liver abscess cases (solitary abscesses), which drain for a long time, by applying a Bier cup over the superficial opening once a day for five minutes. One must be especially cautious in these cases not to increase the vacuum too rapidly, as rupture of the vessels in the liver might easily ensue and cause serious damage.—*American Journal of Surgery*.

News of the Week.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations May 25, 1907, for the following positions: Coroner's physician, Albany county, $600; night superintendent, Erie County Hospital, $420 and maintenance. The last day for filing applications for these positions is May 18. Full information and application forms may be obtained by addressing Charles S. Fowler, Chief Examiner of the Commission, at Albany.

Joint Conference of Illinois State Board of Health and Officers of Medical Societies of the State of Illinois.—A joint conference was held April 24, 1906, at the Great Northern Hotel, Chicago. During the meeting the following committees submitted reports, which were freely discussed and adopted: Committee on Reciprocity; Committee on Medical Legislation in Illinois; Committee on Relation of State Board of Health to Local Boards of Health; Committee on Examination of Candidates and Methods Pursued in Connection with the Administration of the Medical Practice Act in the Case of Unlicensed Practitioners; Committee to Promote Cooperation Between the State Medical Societies and the State Board of Health, and also a Committee on Cooperation Between the Different Schools of Medicine. One of the committees in its report urged the holding of such a conference yearly, and it is believed that this suggestion will be carried out.

For More Park Milk Booths.—A committee acting in behalf of several charitable organizations interested especially in the care of the children of the poor, has requested the Board of Park Commissioners to make application to the Board of Estimate and Apportionment for an emergency appropriation of $8,000 for the purpose of erecting eleven additional milk booths in the parks. If the booths are provided Mr. Nathan Straus has agreed to bear the cost of furnishing pasteurized milk for distribution, and of the necessary attendance.

Health Conditions on the Isthmus.—According to the report for the month of March, of Col. Gorgas, chief sanitary officer of the Canal Zone, the conditions on the Isthmus are now so satisfactory that much improvement can hardly be expected. Since last August the number of sick among the employees has steadily declined, until it is now 19.40 men per 1,000, as against 33.72 in August. Among 4,600 American white employees there were only two deaths from disease during the month of March. Among 1,200 American women and children living in Canal Commission quarters there were no deaths, and very little sickness of any kind. The negro employees continue to show the highest mortality, and the American whites the smallest.

Alvarenga Prize.—The next award of this prize which consists of the income for one year, amounting to $180, of the fund left for this purpose by the late Señor Alvarenga, will be made on July 4, 1907, provided that an essay deemed worthy of the prize shall have been offered.

Italian Prizes.—Among the subjects for which prizes are offered by the Reale Instituto Lombardo, are the following: For the Cagnola prize for 1908, the so-called nuclei of origin and termination of the cranial nerves; for the Secco Comneno prize for 1907, a discovery relating to the virus of rabies; for 1911, on the physiological action of high-frequency currents. For the present year the prize awards of the Reale Instituto Lombardo include a Cagnola prize of £100 and medal of the value of £20 to Dr. Augusto Moschini of Pavia, for his essay on the pathology of the suprarenal capsules; a prize of £80 to Dr. Guido Sala of Pavia, and awards of £20 to Professor Domenico Lo Monaco and G. Pitò of Rome for essays on the anatomy of the visual centers of higher vertebrates under the Fossati foundation.

Dr. Charles H. Peck, the Senior Attending Surgeon to the French Hospital of this city, has recently received from the French Government, through the Minister of Public Instruction and Fine Arts, the decoration of Officier de l'Instruction Publique.

Dr. Theodore H. Weisenburg has been elected neurologist to the Philadelphia Hospital and consultant to the Insane Department, and also professor of neuropathology and assistant professor of neurology in the Medico-Chirurgical College, in succession to the late Dr. Wm. Pickett.

Dr. John B. Deaver has been elected consulting surgeon to the Philadelphia Hospital in succession to the late Dr. John H. Brinton.

Resignation of Dr. Mettler.—Dr. L. Harrison Mettler has resigned from the faculty of the Chicago Clinical School.

A New Clinical Society.—The members of the medical staff of the New York Throat, Nose, and Lung Hospital have organized a society known as the Clinical Society of the Hospital. Members and ex-members of the staff are eligible for membership. The officers for the first year are as follows: *President*, Dr. E. A. Miller; *Vice-President*, Dr. S. Goldstein; *Secretary*, Dr. Chas. F. Walter; *Treasurer*, Dr. M. C. Tracy. The next meeting will be held at the hospital, 229 and 231 East Fifty-seventh street, on Wednesday, May 1, 1907. The program for the evening embraces the presentation of patients, specimens, and instruments, and the reading of a paper on tinnitus aurium by Dr. C. F. Walter.

Memorial Hospital Plans.—A committee of the Iroquois Memorial Hospital Association has presented a plan for a memorial emergency hospital in the downtown district of Chicago, to the President of the Cook County Board. It is proposed by the committee to lease the ground at 43 and 45 La Salle street, at an annual rental of $5,000, and to erect thereon a three-story building to cost about $30,000. The Hospital Association is willing to pay for the building, but it asks the county to pay for the lease of the land.

An International Congress of First Aid to the Injured.—Under this title an international congress is being planned for, to be held in Frankfurt a. M., Germany, in the spring of 1908, and to be devoted to the subjects of first aid and life saving in factories, on railroads, in agricultural pursuits, in mines, at sea, etc. The methods and appliances in use in different countries are to be exhibited and discussed. The chairman of the committee of arrangements is Oberbürgermeister Adickes of Frankfurt.

Board of Food and Drug Inspection.—Secretary Wilson has created a Board of Food and Drug Inspection, whose duty it shall be to administer the national pure food law. The board consists of Dr. Harvey W. Wiley, chairman; Dr. Frederick L. Dunlap, and George R. McCabe.

Hospital Conference.—At the recent meeting of the Hospital Conference of the City of New York the subject of dispensary management was discussed. In view of the constantly growing number of persons requiring dispensary treatment it was decided to make a statement to the Mayor and to the heads of hospitals regarding the necessity for increased dispensary facilities.

The Presbyterian Hospital will receive between $120,000 and $150,000 by the will of the late Peter Cumming, founder of the Broadway Savings Institution.

New Public Bath for the Bronx.—Plans have been filed for a new two-story free public bath to be erected at the southeast corner of Elton avenue and 156th street. It is to be of brick, with trimmings of ornamental stone, and will front 67 1-2 feet on both avenue and street and have a depth of 58 feet. It is to cost $140,000.

Hospital Saturday and Sunday Association.—The distributing committee of the Hospital Saturday and Sunday Association met last week to distribute the undesignated fund of the collection of 1906. The total collection was reported as $103,110, of which $1,555 was derived from the offer of Mr. and Mrs. James Speyer to duplicate all gifts after $100,000 had been collected. Of the total, $14,610.88 was designated by the donors to particular institutions, and $4,492.12 was reserved for future expenses, leaving the sum of $84,000 for distribution. The allotment was made on a basis of the free work done by each institution. The Montefiore Home and Hospital and Mount Sinai Hospital got the largest awards, $8,400 each. St. Luke's, Roosevelt, the Lebanon, and German Hospitals each received amounts exceeding $4,000, and thirty-three other institutions received smaller apportionments.

Death from X-Rays.—The death of Wolfram C. Fuchs, which occurred in Chicago last week, makes at least the fifth instance in which *x*-ray workers have succumbed to lesions caused by continual exposure to the rays. Mr. Fuchs about three years ago suffered serious burns of both hands, which necessitated his retirement from active work, but in spite of this and of repeated amputations, the condition progressed, and the lesions finally involved the trunk and internal organs.

Suicide in Japan.—According to recently published statistics, the practice of self-destruction is steadily increasing in Japan, and during the year 1904 6,200 men and 3,900 women ended their own lives. This is an increase over the figures for the year 1890 of 14.5 per cent. for the men and 16 per cent. for the women. Hanging and drowning are the two methods most often used.

Museum for Haeckel.—The municipality of Jena has given a plot of land, on which a philogenetic museum will be established in honor of Professor Ernst Heinrich Haeckel.

Medical Inspection of Immigrants.—In reference to the editorial in a recent issue of the MEDICAL RECORD on the relation of immigration to the prevalence of insanity, Dr. Thomas W. Salmon informs us that Surgeon George W. Stoner of the Public Health and Marine Hospital Service is in charge of the medical inspection of immigrants at Ellis Island, and that Dr. Salmon is one of several officers of this service assigned to duty there.

Scurvy in Russia.—Scurvy has become very prevalent in the famine districts of Russia. Official reports show that in the last two weeks of March 1,055 cases were discovered in the province of Ufa alone, and up to April 25 11,000 cases in all had been reported in the same province.

Typhoid Fever in Warsaw.—An outbreak of typhoid fever has occurred among the thousands of political prisoners confined in the overcrowded prisons of Warsaw, and the disease has become epidemic throughout the city.

The Syrian Protestant College of Beirut, Syria, in which Dr. George E. Post is professor of surgery, has received from Mrs. Russell Sage the sum of $75,000 for the erection of an American hospital.

International Congress of Physiotherapy.—The twelfth international convention of those interested in this branch of therapeutics will be held in Rome, October 13 to 16, 1907.

Harlem and Fordham Hospitals.—The new buildings of these two hospitals are ready for occupancy. The new Harlem Hospital occupies nearly half a city block on Lenox avenue, between 136th and 137th streets, fronting on the former. Besides the main building, which is a five-story brick and stone structure, there are separate buildings for the ambulance station and power house. The new Fordham Hospital main building, which, like the Harlem Hospital, is but a part of a system of contemplated structures, is five stories in height and is built of stone and brick. To the rear of the main building are the ambulance stables, laundries, and servants' quarters. Beside it to the west is a large four-story stone and brick building to be devoted to the nurses. The buildings are at the Southern boulevard and Crotona avenue.

Michigan State Board of Health.—Dr. Angus McLean of Detroit has been elected president of the State Board of Health, succeeding Dr. Victor C. Vaughan of Ann Arbor. Dr. F. W. Shumway was reelected secretary.

Bequests to Philadelphia Institutions.—In accordance with the terms of the will of the late Edward T. Dobbins of Philadelphia, the executors have distributed the following legacies: Scholarship in the Philadelphia College of Pharmacy, $25,000; Hospital of the Women's Medical College, $10,000; Christ's Church Hospital, $10,000; Burlington County Hospital, Mt. Holly, N. J., $5,000; Children's Hospital, $5,000; Home for Incurables, $5,000; Free Bed Women's Medical College, $5,000.

The Congress of American Physicians and Surgeons.—The seventh meeting of the Congress of American Physicians and Surgeons will be held in Washington, D. C., May 7, 8, and 9. The meetings of the congress will be held in the convention hall of the Arlington Hotel. The subject to be considered at the first session is "The Historical Development and Relative Value of Laboratory and Clinical Methods in Diagnosis." In the evening there will be the address of the President of the Congress, followed by a reception to him. On Wednesday the subject for discussion will be "The Comparative Value of the Medical and Surgical Treatment of the Immediate and Remote Results of Ulcer of the Stomach." On Thursday evening there will be the usual smoker.

American Society of Sanitary and Moral Prophylaxis.—At the meeting of this society held April 11, 1907, the following officers were elected for the ensuing year: *President*, Dr. Prince A. Morrow; *Vice-Presidents*, Dr. Stephen Smith, Prof. Edwin R. A. Seligman, and Mr. Francis Lynde Stetson; *Secretary*, Dr. Edward L. Keyes, Jr.; *Treasurer*, Dr. Smith Ely Jelliffe.

American Therapeutic Society.—The eighth annual meeting of this organization will be held in

Washington on May 4, 6, and 7, 1907, under the presidency of Dr. Robert Reyburn of Washington. The secretary is Dr. Noble P. Barnes of Washington.

American Laryngological Association.—The twenty-ninth annual congress of this association will be held in Washington on May 7, 8, and 9, 1907. The president of the society is Dr. Arthur W. de Roaldes of New Orleans, and the secretary is Dr. James E. Newcomb of this city.

American Medical Editors' Association.—The thirty-eighth annual meeting of this organization will be held at Atlantic City on Saturday, June 1, and Monday, June 3, 1907. The annual editors' banquet will be held at the Marlborough-Blenheim Hotel on the evening of June 3. The opening address by the president, Dr. James Evelyn Pilcher, will be on "The Future of Medical Journalism," and numerous other speakers will discuss the present conditions of medical journalism. The secretary is Dr. Joseph MacDonald, Jr., of this city.

The West Virginia State Medical Association will hold its annual meeting at Huntington on May 15 to 17, 1907. The officers for this year are: *President,* Wm. W. Golden, Elkins; *Vice-President,* V. T. Churchman, Charleston; *Secretary,* T. W. Moore, Huntington; *Treasurer,* T. L. Barber, Charleston.

South Carolina State Medical Association.—At the meeting of this society held in Bennetsville on April 18 officers were elected as follows: *President,* Dr. LeGrand Guerry, Columbia; *First Vice-President,* Dr. J. Adams Hayne, Greenville; *Second Vice-President,* Dr. Marsh, Edgefield; *Third Vice-President,* Dr. Mary R. Baker, Columbia; *Secretary,* Dr. Walter Cheyne, Sumter; *Treasurer,* Dr. C. P. Aimar, Charleston; *State Board of Health,* Dr. Robert Wilson, Charleston; Dr. Hall, Aiken; Dr. C. C. Gambrell, Abbeville; Dr. J. Adams Hayne, Greenville; Dr. W. J. Burdell, Lugoff; Dr. James Evans, Florence; Dr. C. F. Williams, Columbia.

St. Joseph Railway Surgeons.—At the annual meeting of the Society of Surgeons of the St. Joseph and Grand Island Railway, held in St. Joseph on April 18, officers were elected as follows: *President,* Dr. B. F. Hatch of Beattie, Kan.; *Vice-President,* Dr. G. A. Birdsall, Alexandria, Neb.; *Secretary and Treasurer,* Dr. R. A. Todd of St. Joseph.

Worcester North (Mass.) Medical Society.—The forty-ninth annual meeting of this society was held in Fitchburg on April 23. Officers as follows were elected: *President,* Dr. A. E. Mossman of Westminster; *Vice-President,* Dr. J. G. Henry of Winchenden; *Secretary,* Dr. Walter F. Sawyer of Fitchburg; *Treasurer,* Dr. E. R. Fiske of Fitchburg.

Georgia State Medical Association.—At the annual meeting of this society, held at Tybee on April 19, officers were elected as follows: *President,* Dr. M. A. Clark, Macon; *First Vice-President,* Dr. Ralph M. Thomson, Savannah; *Second Vice-President,* Dr. E. E. Murphy, Augusta. The 1908 meeting will be held in Fitzgerald.

Florida State Medical Association.—The election of officers at the annual meeting of this society, held in Tampa on April 18, resulted as follows: *President,* Dr. W. P. Lawrence of Tampa; *Vice-Presidents,* Drs. S. R. M. Kennedy of Pensacola, J. D. Love of Jacksonville, and W. H. Powell of Ocala; *Secretary,* Dr. J. D. Fernandez of Tampa.

Cole County (Mo.) Medical Association.—Officers as follows were elected by this society at the meeting held in Jefferson City on April 19: *President,* Dr. C. P. Hough; *Vice-President,* Dr. H. T. Leach; *Secretary,* Dr. Bedford; *Treasurer,* Dr. J. P. Porth.

Tolland County (Conn.) Medical Society.—At the one hundred and fifteenth annual meeting of this society, held in Rockville on April 16, officers were elected as follows: *President,* Dr. T. F. Rockwell, Rockville; *Vice-President,* Dr. Jas. Stretch, Stafford Springs; *Clerk,* Dr. E. P. Flint, Rockville.

Plymouth District (Mass.) Medical Society.—Officers were elected as follows at the annual meeting of this society, held in Brockton on April 17: *President,* Dr. F. G. Wheatley; *Vice-President,* Dr. Fred J. Ripley; *Secretary and Treasurer,* Dr. Alfred C. Smith.

Litchfield County (Conn.) Medical Society.—The forty-third annual meeting of this association was held at Winsted on April 24. Officers were elected as follows: *President,* Dr. G. D. Ferguson of Thomaston; *Vice-President,* Dr. I. L. Hamant of Norfolk; *Clerk,* Dr. S. G. Howd of Winsted.

Death of Mosetig-Moorhof.—Professor Albert von Mosetig-Moorhof, the Viennese surgeon, well known, among other things, for his method of treating bone cavities with an iodoform-paraffine filling, was accidentally drowned on April 26. He was subject to syncopal attacks due to arteriosclerosis, and while walking along the Danube is thought to have felt a seizure coming on. He was seen to stoop at the river's edge, apparently to wet a handkerchief in order to bathe his face, but lost his balance and was carried away by the swift current. He was sixty-nine years old.

Obituary Notes.—Dr. Junius F. Smith of Brookfield, Conn., died on April 22 of pneumonia at the age of forty-two years. He was a native of New Marlboro, Mass., and was graduated from the Long Island Hospital Medical College in 1890. He began to practise in Brookfield in the same year, and for some time before his death had been the medical examiner for the town. Last year he was elected Representative from Brookfield in the General Assembly and was a member on the Committee of Public Health and Safety.

Dr. Frank P. Webster of Norfolk, Va., died suddenly on April 25 of heart disease. He was fifty-four years of age.

Dr. W. B. Fletcher of Indianapolis died in Orlando, Fla., on April 25, after a long illness.

Dr. Charles D. Mattison of Minetto, Oswego, county, N. Y., died suddenly on April 22, at the age of thirty-five years. He received his medical degree from Johns Hopkins University.

Dr. I. D. Young of Bordentown, N. J., died on April 26 at the age of eighty-two years. He was born at Rockland, Del., and was graduated from the Pennsylvania Medical College of Philadelphia in 1848. A year later he began practice in Bordentown, where he had resided ever since. He was consulting surgeon to the Meyer Hospital at Trenton.

Dr. Winthrop Butler of Vineyard Haven, Mass., died on April 22 at the age of sixty-eight years. He was born in Tisbury and studied medicine with his uncle, Dr. S. W. Butler of Newport, R. I. He received his degree from the Harvard Medical School in 1866, and after practising for a time in Groveland, Mass., removed to Vineyard Haven, where he had since resided.

Dr. Herbert S. Olney of Detroit died on April 18 at Fresno, Cal., at the age of thirty years. He

was graduated from the medical department of the University of Michigan in 1901, and in 1903 began to practise in Detroit. A year ago he was forced to go West on account of ill health.

Dr. M. C. CRISTENSEN of Omaha, Neb., died on April 17 after an illness of several months. He was a native of Denmark and was graduated from the Omaha Medical College in 1892. He served as Alderman from 1900 to 1902.

Dr. ESROM A. DU CLOS of Flint Village, Mass., died on April 20 at the age of sixty-four years. He was born in Quebec and received his medical education in Bishop University and McGill University. He had practised in Flint Village for about four years.

Dr. FRANCIS E. CORBIN of Los Angeles, Cal., died suddenly on April 17. He was educated in the University of Michigan and the Michigan Medical College. After practising for a time in Lansing he removed to Los Angeles about eleven years ago.

Dr. GUSTAVE SCHOENBERG died at Philadelphia on April 20 at the age of eighty-one years. He was a native of Prussia, his ancestors being the Dukes of Schoenberg. He was graduated from the University of Berlin in 1848 and was engaged in medical practice in Berlin until 1860, when he came to the United States. In 1873 he went to Japan and in the following year he was made Surgeon-in-Chief to the Japanese Army. While in the Orient he went to Formosa, and he was one of the first white men to explore that country. He also visited many parts of China that up to that time had been closed to foreigners.

Dr. GEORGE W. SMITH died at Hollidaysburg, Pa., on April 22, at the age of seventy-three years. He was graduated from the medical department of the University of Pennsylvania in the class of 1863. He was for many years president of the Blair County Medical Society and for ten years president of the Hollidaysburg Board of Health.

Dr. ANDREW M. MILLS of Newark died suddenly on April 21 at the age of thirty-six years. He had lived in Newark all his life and had practised there since his graduation from the New York University Medical School in 1892. At the time of his death he was County Physician of Essex county.

Dr. REUBEN BIGELOW BURTON of this city died on April 22, after a brief illness. He was born in Chester, Vt., June 15, 1827. He was graduated from Union College and subsequently from Albany Medical College in 1855. He practised in Chester, Vt., but came to settle permanently in New York in February, 1860. He was in active practice up to the week before his death.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.

SALICYLATES—EXTENSIVE VOLVULUS—ALCOHOL, A NEW DECLARATION—KING'S HONOR TO HIS SURGEONS—COLLEGE OF PHYSICIANS—ITEMS—OBITUARIES.

LONDON, April 12, 1907.

THE administration of salicylates was the subject of a paper at the Hunterian Society by Dr. David Lees, who holds these preparations to be among our most certain remedies. He said, indeed, that sodium salicylate was as directly antagonistic to acute rheumatism as mercury to syphilis or quinine to malaria. I have met men who set quite as high a value on this drug. On the other hand, I have discussed it with others who hold it to be much less certain, and in some cases dangerous; they have recounted to me in fact such cases, in some of which they thought it hastened death. I have therefore been interested in what Dr. Lees said, and will summarize his views. First of all, he said it is too often given in too small doses, on account of the unpleasant symptoms which it sometimes produces, and on account of the general opinion that it is a cardiac depressant. In children he made light of the disagreeable symptoms, except vomiting, and this he said is arrested by omitting two or three doses. He always combined it with full doses of bicarbonate of soda. Potassium salts were depressants of the heart, but he considered sodium salts as distinctly cardiac stimulants and likely to diminish the tendency to dilatation in acute rheumatism. He increased the dose every day, or on alternate days, up to a maximum of 450 grains in twenty-four hours for adults. He had given a boy of fifteen 600 grains in twenty-four hours, and 500 grains for six days a week for three weeks. It was not necessary to omit it during pericarditis. If the salicylate were given without the bicarbonate a sort of acid intoxication might occur resembling diabetic coma. In chorea, Dr. Lees said, small doses of salicylate of soda were no use; from 200 to 300 grains a day were required. Dr. Lees does not appear to have availed himself of salicin, which so many regard as equal to any of the salicylates as an antirheumatic and as a distinct tonic rather than depressant to the heart. It can be taken in very large doses and continued over long periods. It has been said not to cause noises in the ears, but this is an error. It does this, if not so much as sodium of salicylate.

At the Medico-Chirurgical, Mr. Hutchinson, Jr., showed a series of drawings and radiographs to illustrate dislocations of the thumb and great toe. He also related a case of acute obstruction by a band of the vermiform appendix and omentum, with general septic peritonitis, the patient recovering after operation. Mr. Hutchinson also contributed the paper of the evening, in which he described a case of volvulus of the entire small intestine, the cecum, and the ascending colon, in which operation was successful. Nine other cases had been recorded of complete volvulus. In nine out of the ten the whole intestine supplied by the superior mesenteric artery, from the duodenum to the transverse colon, had undergone torsion, bringing the cecum and ascending colon behind the mesentery, which acted as a band. In the other case the rotation was in the opposite direction. The greatly distended cecum might occupy the left iliac fossa, or might be found close to the spleen. Even after opening the abdomen the condition was not easy to recognize, and it was necessary to draw the intestines outside in order to reduce the volvulus. It was also desirable to evacuate the cecum by tapping. Only two successful operations seemed to have been recorded—Hutchinson's in 1901, and one by Brentano in 1904.

Mr. Barker said he had recorded a somewhat similar case in which the volvulus comprised the whole of the small intestine, though not the cecum, nor the ascending colon. The patient was a woman at the fourth month of pregnancy, who had undergone a gastrojejunostomy two years previously. The volvulus was untwisted without removing anything from the abdomen, and recovery occurred in ten days. The pregnancy went on to normal labor at term.

Dr. Keith expressed the opinion that the peculiar manner in which the intestine was fixed in the abdominal cavity was connected with the erect posture. He considered the case belonged to the class of congenital malformations. Mr. Hughes described a case parallel to that of Mr. Barker, in which the whole of the small intestine was involved. In reply, Mr. Hutchinson, Jr., thought his case was of a type of volvulus scarcely recognized. He disagreed with Mr. Barker as to not removing the intestines, and felt sure the omission was the cause of some failures, the condition not having been relieved because it had not been recognized.

The two great "declarations" of the profession on the use of alcohol, which were so numerously signed as to be regarded as completely representative of medical opinion in the last generation, seem now like ancient history. We have therefore been somewhat surprised by a feeble imitation of those documents in the shape of a letter to a medical contemporary signed by a few distinguished medical men, and which tends to support the moderate use of alcoholic beverages. The newspapers have got hold of the new manifesto and are treating it as far more authoritative than it deserves, for although it must be admitted that the signatures are those of able men, it is impossible to regard them as of equal weight to the old "declarations." A curious thing about the matter is that these gentlemen should just now consider the expression of their opinions called for. If intended to controvert the former declarations, it is strange they should have taken a generation to arrive at their conclusions. How came they to agree that the time had arrived when they were required to issue a joint statement of their views? It is impossible to suppose they desired to arrest the progress of the temperance

movement, or that they regarded the diminution of excessive drinking as other than satisfactory. Someone suggests to me they had been dining together, and discussed the use of alcohol afterwards, when the wine in the glass seemed moving itself aright. Others wonder whether some astute person connected with "the trade" had got hold of them. Such suggestions seem unworthy of their position, and the manifesto must be accepted for what it is worth.

At the annual meeting of the Society for the Study of Inebriety held on Tuesday the subject was naturally discussed. Dr. Harry Campbell, who presided, said the reference in the recent manifesto to the universal belief in the use of alcohol could not be the object of its issue. It was a misstatement, for such belief was not entertained by the millions of Japanese, Buddhists, Mahomedans, etc., and what he said was meant by a "moderate use of alcohol." Did it mean one glass of wiskey a day, or three, or four, or five? He had asked a person who told him that half a bottle was moderate, and if he only took two glasses he was "practically a teetotaler"—a statement which elicited laughter. Proceeding, he asked what the signatures meant by "an adult." If they meant anyone who had reached his twenty-first year he calculated that such a young person as a moderate drinker of two glasses a day consumed about eighty bottles a year, so that in fifty years four thousand bottles passed through that unromantic organ of his, the liver. Then they ought not to lose sight of the fact that the main supply of whiskey to the working classes was immature, and therefore bad. Further, if everyone restricted himself to a moderate amount of sound alcohol he could not regard the manifesto as other than misleading, harmful, and dangerous.

The King has granted another honor to Sir Frederic Treves and Sir Francis Laking in recognition of their "great skill and unremitting attention" in his illness in 1902. The new distinction is an "honorable augmentation" to their arms consisting of an addition to their shields of one of the lions from the Royal arms, which is to be borne by their descendants. The late Sir William Gull received a similar distinction—an augmentation by the Prince of Wales' feathers. It is a new form of recognition in modern times, for we must go back to Charles II. for anything similar.

Sir R. Douglas Powell was reelected to the presidency of the Royal College of Physicians on the 25th ult. In his address he gave obituary notices of nine Fellows of the College who had died during the year, and the deaths of whom I had reported on the several occasions.

The report of the Hospital Saturday Fund, of which I sent you the chief items a fortnight ago, was duly adopted at the meeting on the 6th inst.

The newspapers are according unusual space to obituary notices of Thomas Beecham. No wonder, for it is recorded that he spent £100,000 a year in advertising his pills, and what will some papers do for such a prince of puffery? The puffs gave him a turnover of £150,000. Great is the gullibility of the public!

Ed. Thos. Harrison, F.R.C.S., J.P., who died on April 3 in his eighty-eighth year, was formerly consulting surgeon to the Welshpool Dispensary. He took the M.R.C.S. and L.S.A. in 1842-3, served in the S. Wales Bonderers, and retired as surgeon-major.

OUR PARIS LETTER.

(From Our Special Correspondent.)

TYPHOID EPIDEMIC DUE TO OYSTERS—BIER'S BANDAGE FOR INFECTIONS OF THE EXTREMITIES—ELECTRIC SLEEP—THE ABOLITION OF ABSINTHE—DEATH CAUSED BY MERCURIAL INJECTIONS—NECROLOGY.

PARIS, March 2, 1907.

At the Académie de Médecine the interesting question of the part played by oysters in causing epidemics of typhoid fever came up for discussion. Netter reported the histories of thirty-three cases of the disease attributed to the ingestion of oysters coming from the city of Cette. In these thirty-three cases the symptoms appeared from ten to twenty-five days after eating the oysters, and seven of the patients died. In almost every instance the oysters had been eaten on the day of shipment and their flavor was unimpaired. The source of the trouble was therefore to be found in the oyster beds at Cette, which are situated close to the sewer outlets of the city. The Académie has appointed a commission to study the question and to make recommendations regarding the means to be taken to prevent a repetition of such occurrences.

The important subject of malaria in the French possession of Madagascar was made the subject of a communication by Kermorgant. The speaker reported on a recent epidemic of large proportions. While the disease increased rather slowly it had spread steadily, so that finally more than 274,000 cases and 13,700 deaths were reported; that is, about 5 per 100 of the population were affected. Kermorgant considered the importance of the various etiological factors, such as the mosquito, the telluric factors, and finally the squalor of the natives, and expressed the opinion that all three of these entered into the question. The enforcement of hygienic regulations and the distribution of quinine have already been followed by great improvement.

In the meeting of the Société de Chirurgie Tuffier presented a paper on the use of the elastic bandage of Bier in acute infections of the extremities. He reported the results which he had obtained by Bier's method in acute inflammatory processes of this nature excepting infections of the bone, and pointed out the necessity for skilful technique, without which success could not be obtained. The bandage itself should be a very thin strip of English rubber, not too inelastic and yet sufficiently resistant to make it possible to secure a compression which should be neither too strong nor too weak. The degree of tension could be determined at first with the finger and afterward by the patient's sensations, for pain should never be caused. The bandage should never be applied over the injury itself, but this should be covered with a dressing of dry gauze simply to protect it from the air. It should be applied at first for from twenty to twenty-two hours out of the twenty-four, diminishing gradually to about twelve hours a day. The number of applications would depend upon the duration of the inflammation. Tuffier had obtained in a general way excellent results by this method, and in cases of panaritium and of suppurative arthritis of the wrist he had secured complete and rapid cures. The method was, however, not without certain drawbacks, if there was a tendency to perspiration, ervthemas of varying degree might be produced, but this could be avoided by interposing a thin layer of bandage between the rubber and the skin. He had never seen any serious complications, such as gangrene of the limb, but to avoid any possibility of this he had always refused to make use of the method for ambulatory treatment.

Professor Leduc of Nantes has published the remarkable results he has obtained by means of his electric sleep. He gives this name to a condition comparable to chloroform narcosis, in which the subject lies without any powers of sensation or of voluntary motion, only certain reflex movements and the action of the heart and of the respiratory function persisting. This condition is produced by the action on the brain of a certain form of electric current, and may be maintained for hours, and brought to an end instantly with the interruption of the current. The current used to produce the electric sleep is intermittent, of low tension and constant in direction, that is to say, it flows for a certain period, stops, and then flows again at perfectly regular intervals. It is generated by means of a source of continuous current and of a specially constructed form of interruptor. On applying it to the head sensations of taste and of light are produced, and vertigo depending to some extent on the manner in which the electrodes are applied is caused. In order to inhibit motility and sensation the current should attain a voltage of about six, but if it is increased to ten volts respiration and heart action cease and death follows. Leduc has subjected himself to this action and has reported in a very interesting manner the sensations experienced during a period of narcosis lasting twenty minutes. A remarkable fact is, that when the flow of current is interrupted the subject awakes immediately without any of the after effects that follow chloroform narcosis.

One of the questions considered by the Society of Public Health was the abolition of the manufacture and sale of absinthe. When one reflects on the frightful ravages of alcoholism in general and of absinthism in particular, ravages that are steadily increasing and which may lead a country to its ruin, it may well be said that absinthe is a serious social peril. Legrain, physician to the Ville-Evrard insane asylum, has stated that of the 500 or 600 alcoholics who enter his service every year, the absinthe habitués form 90 per cent. It is therefore important to combat the evil and check this scourge which is threatening the future of the race.

Oettinger and Fiessinger presented before the Société Medical des Hôpitaux a case of death from mercury poisoning following injections of gray oil. The patient was a woman of nineteen years, suffering from a syphilitic ulceration of the elbow. She was given two intramuscular injections of 1 c.c. of 40 per cent. gray oil, and a third injection was given fifteen days after the second. The symptoms of poisoning did not appear until a month later, and death occurred seventy-nine days after the last injection. The mercury was absorbed very slowly, but never-

theless it was not possible to discover in the gluteal region where the injections had been made, the least nodule which might have been excised in order to prevent further dissemination of the poison. The lesions produced were especially marked in the kidneys, and consisted in changes in the cells of the convoluted tubules, the glomeruli remaining almost intact. The cells of the tubules were very largely degenerated, and this lesion explains the anuria that is nearly always observed in nephritis of mercurial origin. The speakers pointed out that most of the fatal cases of this nature have occurred when gray oil was used rather than any other insoluble preparation, like calomel for example. The case reported shows what care is necessary when injections of gray oil are resorted to in the treatment of syphilis.

French science has suffered the loss of one of its most illustrious representatives in the death of Dr. Mathias Duval, professor of histology in the University of Paris, professor in the school of anthropology, and member of the Académie de Médecine. A native of Strassburg, he was, in 1873, made assistant professor of the Paris medical faculty, and a little later he was made director of the laboratory of anthropology and professor of anatomy in l'Ecole des Beaux-Arts. For more than twenty years he had been professor of histology. He was the author of numerous books on histology and physiology which have become classics. His courses on histology always attracted large audiences that he charmed by the simplicity of his delivery and the clearness of his instruction. Among his writings mention should be made of his masterly study of the brain of Gambetta.

Reference must also be made to the death of Moissan, who was one of the most famous chemists of our period. He died suddenly of acute appendicitis in the midst of a brilliant scientific career prematurely arrested. By means of the electric furnace of his invention he made remarkable observations on the diamond and succeeded in producing artificially microscopical specimens of this form of carbon. He opened new provinces to chemistry and, in recognition of his discoveries, was awarded the Nobel prize, which he recently received in person in Norway.

OUR LETTER FROM COPENHAGEN.

(From Our Special Correspondent.)

ROVSING'S OPERATION FOR CARCINOMA OF THE BLADDER—HYPOPHARYNGOSCOPY—BRONCHOSCOPY—THE FINSEN MONUMENT—ONE HUNDRED AND FIFTIETH ANNIVERSARY OF THE ROYAL FREDERICK'S HOSPITAL.

COPENHAGEN, April 2, 1907.

At a meeting of the Medical Society in Copenhagen Prof. Th. Rovsing read a paper on a new method he had devised for the radical removal of the urinary bladder in malignant disease of this organ. When the older methods were adhered to, the ureters were left in the wound produced by the operation or were implanted into the rectum, both of which procedures were connected with grave disadvantages to the patient. With the former method urinary infiltration might take place and with both of them cicatricial stricture of the peripheric ureteral opening was not unfrequently observed, as also ascending infection of the kidneys from the cavity into which the ureters now opened. The chief original feature of the operation as performed by Prof. Rovsing is the way in which he protects the patients against the mentioned dangers. After the complete removal of the bladder he dissects the ureters entirely free for a long distance. Then he makes a buttonhole-like opening in each lumbar region, stretching from the peritoneal cavity to the skin of the back, pulls the corresponding ureter through the buttonhole, and sutures the mucous membrane of the ureter to the adjacent skin. A specially adapted silver capsule is subsequently applied to the skin of the lumbar region round the ureteral opening, and the urine is led from the two capsules to a portable urinal of the ordinary sort. This appliance has proved sufficient so that there has been no oozing out of the urine and no urinary smell attached to the patient. Prof. Tscherning and Dr. Niels P. Ernst congratulated Prof. Rovsing on the important new method. The latter speaker asked if it would not be well to secure further the efficiency of the silver capsule, by making a flap of the skin in the lumbar region and then folding this flap up in such a way as to form a penis-like prominence, on the top of which the ureter then might open.

At the same meeting Dr. P. Tetens Hald read a paper on hypopharyngoscopy, a new method for examination of the deepest laryngeal part of the pharynx, the part behind the lamina of the cricoid cartilage. The method, devised by v. Eicken of Freiburg, Germany, was demonstrated by the speaker before the members of the society. It consists in introducing a very strong laryngeal probe through the glottis into the infraglottic space, and then by means of the probe to pull the larynx forward, away from the posterior wall of the pharynx. The region behind the plate of the cricoid then opens widely and may be inspected at ease with the laryngoscope. In an obscure case, where all hitherto known methods of examination had failed to give certainty, hypopharyngoscopy had enabled Dr. Tetens Hald to diagnosticate a carcinoma of the deepest laryngeal part of the pharynx and the beginning of the gullet, and to verify the diagnosis by excision of a piece of tissue for microscopical examination.

At a meeting of the Danish Otolaryngological Association Prof. E. Schmiegelow communicated a case in which he had removed a grain of maize from the right bronchus of a child four years old by means of Killian's direct superior bronchoscopy. What gave a particular interest to the case was, however, the circumstance that the child died some hours after the removal of the foreign body, under pronounced symptoms of cocaine intoxication. Besides chloroform a quantity between five and six cubic centimeters of a 10 per cent. solution of cocaine had been used on a swab of absorbent cotton in order to procure the necessary anesthesia of the upper respiratory tractus during the somewhat lengthy operation.

About one year ago I wrote you about the war waged by the Danish sculptors against the committee for the erection of a monument for Niels Finsen, the committee seemingly not being inclined to pay the sum of money expected by the sculptors. In this farce another and very exhilarating scene has recently been played. After much debating the sum for the monument was fixed at about $10,000, and several Danish sculptors sent in their sketches. Of these sketches one has now been chosen by the committee. However, the chairman of the committee, the Danish premier, formerly a teacher in a little village school, who has proved to possess rather peculiar ideas about art and science, has had the following rider added to the acceptance of the sketch: that the sculptor remove from the monument the gloomy and heartwringing impression produced by it. Everybody is anxious to see how the happy sculptor is going to meet this trifling demand.

A few days ago, in fact, on March 31, the Royal Frederick's Hospital celebrated its one hundred and fiftieth anniversary. For so long a space of time it has been the teaching hospital of the University of Copenhagen, but now its days are counted. It goes without saying that, though it was for its time an excellent institution, and has constantly been patched up here and there, it is no longer fit to be judged according to the modern standpoint. As in a few years a new and greater hospital with the best modern equipment will be ready for the service of the University, the speeches made at the festival were most of a valedictory nature. The anniversary has also been celebrated in a scientific way, Prof. Kund Faber, with some of his present and former assistants, having published a splendid volume with papers on various questions appertaining to the pathology of the digestive organs.

Progress of Medical Science.

New York Medical Journal, April 20, 1907.

Tuberculous Peritonitis.—Several case reports are given by E. Novak, who discusses their interesting features and whose general conclusions are embodied in the following propositions: (1) the exciting cause of tuberculous peritonitis is the *Bacillus tuberculosis*. (2) This disease occurs most frequently between the ages of twenty and forty, and, according to clinical experience at least, is more common in females than in males. (3) The disease is, in the great majority of cases, secondary to a tuberculous focus in some other part of the body, most frequently the lungs. (4) There seems to be no doubt that infection through the Fallopian tubes may occur, but its frequency is disputed. (5) The onset of the disease is usually slow and insidious and its clinical course presents few definite or characteristic symptoms. (6) The diagnosis is generally difficult, and is often not made until operation or autopsy. (7) The prognosis in the ascitic form of the disease is comparatively good, and in the nonexudative variety bad. In any form it is of course correspondingly modified by the existence of tuberculous disease in other parts of the body. (8) The treatment in most cases should be operative, consisting in laparotomy, with removal of the Fallopian tubes when practicable. (9) No satisfactory explanation has as yet been offered as to the reason for the cure which so often follows operative treatment in this disease.

Cases of Appendicitis, with Comments.—J. A. Wyeth contributes a synopsis of the histories of seven cases of appendicitis and comments thereon. Concerning the technical features of the operation in general, he notes the fact that so rapid is the formation of an exudate after irritation of the peritoneum that within a few hours silk material is covered in and entirely hid beneath a rapid cell proliferation. Regarding the preferable incision, he favors the longitudinal or Deaver incision because it not only gives a perfect command of the operative field, but in cases which turn out to be complicated and necessitate a freer incision, it can be extended upward or downward indefinitely, exposing practically the entire peritoneal cavity with a minimum of danger of ventral hernia as a result of the operation. Wyeth employs the McBurney incision only where an abscess is to be opened, and under such circumstances the opening into the pus cavity is not more than a half or three-quarters of an inch in extent. This incision cannot be sufficiently enlarged to meet every emergency, without great danger of ventral hernia. The Kammerer incision, which opens the sheath of the rectus as just described, and then displaces the right edge of the rectus muscle toward the median line, holding it out of the way until the peritoneum is opened and the operation completed, is objectionable in that the replaced muscle prevents the employment of free drainage when this is found to be necessary. The method given of dealing with the stump of the appendix is, in the author's opinion, in every way preferable; it is simple and safe. So far as his knowledge goes, no accident was ever recorded against it. It can be done with the minimum of traumatism. Moreover, a number of accidents have occurred from other methods. Under no circumstances should the appendix be tied off with catgut. The method referred to consists in clamping the appendix about half an inch from its cecal attachment while slight traction is made and a No. 2 silk ligature encircles it about one-quarter of an inch from the cecum. When this is done a gauze swab is split and carried on either side of the appendix. This swab is held between the thumb and finger of the operator, grasping with it that part of the cecum immediately at the base of the appendix, which is now divided with the curved scissors about an eighth of an inch beyond the ligature. The swab prevents any possible contact of infectious material with the peritoneal covering of the cecum. The funnel shaped end of the stump is now burned by a drop of pure carbolic acid carried upon a small wisp of cotton upon a metal probe. The excess of carbolic acid is immediately removed by a drop or two of alcohol applied in the same way. The ligature is divided close to the knot, and the cecum allowed to dron back into its normal position.

Treatment of Typhoid Spine.—V. P. Gibney reviews some of the recent literature on this subject and adds the histories of two personal cases. He says that the value of the cautery as a counter irritant has proven so valuable in his hands that he prefers it to all other remedies of its class. The plaster-of-Paris jacket or corset has not proved so valuable an agent as has the simple Knight spinal base or the posterior spinal assistart of Taylor. The criss-cross strapping with zinc oxide adhesive plaster has been a valuable adjunct, especially in the milder forms of this disease. Potassium iodide has been given in certain cases, but not with any definite results. Where deformity exists, as it undoubtedly does in certain instances, it is necessary to wear apparatus for longer periods. In conclusion the author insists on the Paquelin cautery as a regular line of treatment as long as tenderness and pain on movement continues. Even after all tenderness subsides it is a good plan to employ the cautery occasionally, say once a week or once in a fortnight. It has been shown that even these deformities and areas of infiltration, bony, or muscular, disappear after a while, and fortified by this assurance, the surgeon can decide when to begin the convalescing part of the treatment, namely, douches, hot baths, and systematic graded exercises, the object of which is to correct the stiffness developed in the muscles which have been for a time out of commission, and to restore the tone generally to the spinal column.

Modified Buttermilk in Infant Feeding.—C. F. Judson and R. O. Clock give their experience in a series of twelve cases. This food should not be relied on, even with the addition of cream, for a longer period than three months, but it is a useful food in tiding over a crisis. The average composition of whole buttermilk is proteid 2.5 to 2.7 per cent., sugar 3 to 3.5 per per cent., and fat 0.5 to 1 per cent. In preparing for use the casein was considerably diluted so as to make the proportion present 1.5 to 2 per cent., and sugar added only in sufficient amounts to bring the proportion present in the mixture up to 5 per cent. Moreover, the mixture was heated only to from 140 to 155° F. for ten minutes, so that the lactic acid bacteria were not destroyed. Robinson's barley flour was added, one half ounce to each pint and a half, and cane sugar solution (6 to 9 per cent. strength) used to dilute the casein. The method of preparation of the weaker mixture was as follows: Ingredients used were one pint of buttermilk, eight ounces of a six or nine per cent. solution of cane sugar, one half ounce of Robinson's patent barley. (1) Make a paste of the flour and a small quantity of the sugar solution. (2) Add buttermilk and the remainder of the sugar solution to this paste and mix thoroughly. (3) Heat the mixture to 155° F. for ten to fifteen minutes, *stirring constantly*. (4) Remove from stove, cool, and place on ice. At first this diet gave brown, pasty, and offensive stools, which later turned to yellow. They contained mucus as a rule, showing intestinal catarrh. Later the mucus disappeared. The twelve children treated were several cases of malnutrition, marasmus, enteritis, or enterocolitis. The prostration and other toxic symptoms quickly disappeared in most cases after buttermilk diet was instituted. Eight infants gained in weight (in one the gain was only temporary), while four infants could not tolerate the diet. The gain in weight was in most cases irregular, but steadily upward, and averaged one-half ounce daily. Some gained more rapidly for shorter periods.

Journal of the American Medical Association, April 27, 1907.

The Digestion of Cow's Milk Proteids by Infants.—According to F. X. Walls the proteids of cow's milk give rise to no digestive or nutritive disturbances in young infants, and the theories now prevalent as regards the artificial feeding of infants will have to be modified. The notion of proteid indigestibility has been based on some crude test-tube experiments and the misappreciation of certain appearances in the baby's stools. The common whitish or yellowish lumps in infant stools—the so-called curds—are not proteid material, he asserts, but fats or fatty soaps; rarely are they inspissated mucus or clumps of bacteria. In hundreds of cases in which he has given fat-free undiluted milk to infants he has never after careful examination found curds in the stools. He reports two cases of infants suffering from enterocolitis fed on centrifugalized fat-free milk without any digestive disturbance and with excellent therapeutic effect. He says that there is no symptom or group of symptoms from which we can conclude that there is any injury to the infants from the albuminoid material in cow's milk, and this being shown, all the methods advocated to assist in the digestion of the proteid are without foundation and may be harmful. This does not mean that we are to feed babies on a fat-free or skim-milk diet. The normal child demands a proportion of fat in its food and this is a matter for individual determination. An excessive amount of fat, as shown by Brenneman, is the most frequent source of overfeeding, and the most dangerous foods are the cream mixtures. For a normal infant Walls would advise a dilution of one part whole milk and two parts water, gradually decreasing the dilution till in six months or a year whole milk is reached, and such whole milk containing not to exceed two or three per cent. of fat. Feeding, after the first week, should not be oftener than once in four hours in the daytime and twice at night, and the amount should be enough to satisfy the infant's appetite. The caloric value of the food taken during the twenty-four hours should be estimated as a check against overfeeding, though as a rule babies fed not over once in four hours are not likely to overfeed. The author's conclusions are given substantially as follows: 1. There is no evidence that the proteid of cow's milk causes any digestive disturbance in the infant. 2. All experiments prove that cow's proteid is easily digested and resists putrefaction. 3. The method of proteid modification as aids to digestion are therefore erroneous. 4. In sterile, fat-free milk we have an unequaled therapeutic agent in the treatment of the nutritive disorders of infancy.

Clinical and Radiodiagnostic Findings.—C. M. Cooper gives the results of four years' experience of combined use of the *x*-ray with the clinical symptoms in diagnosis, with details of a number of cases. Among these is one in which the *x*-ray revealed a bilateral functional spasm of the diaphragm, causing temporary embarrassment of respiration; others show the value of the ray in determining the presence of old apical indurations and central pneumonic patches in which the clinical symptoms alone might be misleading. He emphasizes the importance of estimating the percussion resistance, which his observations indicate to be of greater value

in diagnosis in these cases than the percussion note. The radiograms were also found of value in the diagnosis of peribronchial glandular enlargements. He believes from this evidence that intralobular effusion sometimes may be serous instead of purulent. Other conclusions reached are stated substantially as follows: So-called functional dilatations of blood-vessels are really temporary aneurysms and may change at or after death. As Tallant has shown, many persons present the Broadbent retraction of the left lower posterior chest wall. In cases in which there are no adhesions he has found that the position of the maximum retraction varies with the respiratory phases, being higher during expiration, lower during inspiration, while with adhesions this change does not happen. In patients presenting a pouch of the esophagus a change of pulse rhythm may occur, according as the pouch is empty or full, this variation being better marked during full respiration. Pericardial effusions are often unrecognized, and probably some cases of dilated hearts which have undergone extreme reduction in size from the Nauheim treatment have been instances of pericardial effusion. Cooper thinks that the correlation of clinical and Roentgen diagnosis will increase the percentage of successful diagnosis, will give certainty in various conditions which otherwise could be only suspected, will render unnecessary certain dangerous diagnostic methods, will render the clinician more skilful, will be of aid in teaching, and may be of some assistance in the relations between the physician and the patient.

Multiple Neuritis (Non-Diphtheritic) in Children.—After noticing the general opinion given in text-books as to the comparative rarity of multiple neuritis in children, H. M. Thomas and H. S. Greenbaum remark on its possible occasional confusion with anterior poliomyelitis and say that it is probably more frequent than is generally thought. Their experience in the Neurological Dispensary of the Johns Hopkins Hospital is somewhat unusual; in the past sixteen years, with an average of 1,200 new neurologic cases annually, they have seen but twenty-one cases of non-diphtheritic multiple neuritis and eight of these were in children under twelve years of age. This does not include hospital cases; the severer cases in adults are apt to be sent directly to a hospital. The children ranged between three and twelve years: three of the cases followed typhoid, in the others the etiology could not be ascertained. The clinical picture was typical in all; onset acute with lassitude, fever and loss of appetite, arms and legs both affected in every case and practically symmetrically. Electric changes generally present and deep reflexes lost in every case but one (No. 4, a possible case of lead poisoning). All the patients improved, the arms first in all but No. 4, in whom there still remains, nine years later, a paralysis of the intrinsic muscles of the hands. The recovery in all was slow, lasting over several months. Short histories of the cases are given and the symptomatology, diagnosis, etc., are discussed. The chief difficulty is in differentiating multiple neuritis in children from poliomyelitis, but the former is usually more insidious in its onset, may have an obvious cause, subjective and objective pains are more likely to be present. The widespread symmetrical paralysis is characteristic as compared with the contrary condition in poliomyelitis and the recovery is apt to be complete or nearly so. The prognosis in multiple neuritis of children is generally good. Treatment calls for removal of the cause if possible, nourishing diet, laxatives, rest in bed in the early stages, quinine in malarial cases, massage, electricity, passive exercise, mild gymnastics, and hydrotherapy are useful. Tonics may be required. If a permanent wrist or foot-drop continues, the orthopedic surgeon may be consulted.

Inoperable Cancer of the Uterus.—G. Gellhorn recommends the use of acetone as a valuable palliative remedy in inoperable uterine cancer, as it destroys the distressing odor, checks the hemorrhage, and improves the general condition. Its use was suggested by the employment of this drug in laboratory work for hardening tissues. If the ulcerated surface could be hardened during life Gellhorn assumed that the discharge could be checked until the escharotic surface could be thrown off and the process might be repeated for deeper and deeper portions. The treatment should begin with thorough shelling out of the ulcerating area. The curetted cavity is thoroughly dried with cotton sponges, the pelvis raised, and from half to one ounce of acetone is poured into the wound through a tubular speculum. The narcosis is then interrupted and the patient left in the same position for from fifteen to thirty minutes. Then, by lowering the pelvis, the acetone is permitted to run out through the speculum, and the cavity is packed with a narrow gauze strip soaked in acetone. The healthy mucosa of the vagina and vulva are cleansed with sterile water and dried. Beginning on the fourth or fifth day after the operation, the process of applying the acetone is repeated two or three times a week, without narcosis, and as the cavity decreases in size a smaller and smaller speculum can be used. The treatment almost immediately checks the discharge, which, with its odor, gradually disappears. The hemorrhages fail to recur and, with the cessation of the drain on the system, the general condition improves. The treatment causes no special pain, but anodynes may still be necessary for that due to the deeper extensions of the cancer. Urinary examinations so far have given no evidence of absorption of acetone. Two cases are reported, showing the value of the treatment when other treatment had failed.

Acute Overstraining of the Heart.—Theodor Schott discusses excessive heart straining at some length. He states that we must distinguish between acute and chronic overstrain and calls attention to the fact that the latter can result only from an accumulation of repeated single overstrains. In studying this subject Schott had wrestling performed by strong, healthy men in such manner that they alternately inhibited their movements by forcibly resisting each other, or by each lifting his antagonist. Before the wrestling began, the heart limits and the apex beat were correctly outlined, sphygmographic curves and blood pressure were registered, the position of the diaphragm and of the posterior pulmonary limits were located, the frequency of the respiration and of the pulse, the quality of the pulse waves and of the heart sounds were also accurately determined. So long as no dyspnea appeared, only an increase in the frequency of respiration was noticeable: everything else remained as before. But even in a few minutes after dyspnea manifested itself, the picture was changed. He notes in detail the changes occurring after the violent exercise, and reports cases. The article is illustrated by numerous pulse tracings and diagrams of the heart limits. He states that in acute overstraining of the heart rest is of the utmost importance, and that among drugs digitalis is in the lead. For quieting the action of the heart the application of ice or sinapisms on the anterior pectoral surface is indicated. It will hardly be possible, he states, to dispense with the use of morphine in order to alleviate the severe pains in the cardiac region, nevertheless it is advisable to be cautious in the long continued use of large doses of this drug. The use of stimulants is indicated in excessive cardiac weakness, and in threatened heart failure. When by such therapeutic means the patient is rescued from the threatening condition and when recovery from the injuries already present has taken place it may be advisable to resort to tonics to counteract the heart weakness, this being liable to persist for a considerable time. Generous nourishing of the patient is one of the most important tasks of the physician. A rational balneologic treatment, the careful use of gymnastics, suitable exercise in the fresh air, with the avoidance of any kind of straining, all come into consideration.

The Lancet, April 13, 1907.

Treatment of Prostatic Congestion by Electrical Methods.—J. S. Bolton refers to the effect of the *x*-ray on the testicles and asks if by this effect the ray will in anywise ameliorate the condition of a patient suffering from enlarged prostate. Can we hope for an effect equal to that of castration without any mutilation of the body or danger to the individual? The author notes that the patient presenting himself with prostatic trouble is usually found to be suffering from piles and congestion of all the parts about the anus. The large submucous veins of the prostatic urethra are engorged with blood and the prostate is like a sponge distended with fluid. The weakened bladder is unable to force the urine through the blocked urethra. The indications for treatment are the relief of local stasis and restoration of the circulation and the improvement in tone of the muscular fibers of the bladder. These indications are met by electrical applications. As electricity will relieve, and in many cases cure, chronic piles, so will it relieve prostatic congestion. The author adds the histories of two personal cases in both of which high frequency currents were employed with gratifying results.

One Hundred and Thirty Consecutive Extractions of Cataract without a Failure.—C. Higgins thus de-

scribes the operation. The eye having been thoroughly cleansed and cocainized he first passes a silk suture through the conjunctiva below the lower corneal margin; next direct the patient to look downwards, and having got the eye into the required position draw the suture moderately tight and have it fixed on the cheek by the thumb or finger of an assistant. He uses no other fixation. He next draws the upper eyelid upwards sufficiently to expose the upper margin of the cornea. He never uses a speculum or fixing forceps, but keeps the lid in the required position with the index finger and steadies the globe by pressing very lightly upon its inner surface with the second finger of the same hand. Then with a Gräfe's knife he makes a section in the sclerocorneal junction forming a flap of rather more than one-third of the cornea. As soon as the incision is finished he tells his assistant to let the suture go, holds it himself, and lacerates the capsule. He then removes the lens by pressure with the thumb or forefinger applied to the surface of the lower lid, just below the lower margin of the cornea, aided by counter pressure applied in the same manner above the incision. If the pressure is properly applied the incision begins to gape, the iris protrudes, the pupil dilates, and the lens escapes through it. Having removed the bulk of the cataract he takes care to press out all cortex, and then if the iris has not returned to its normal position he replaces it by rubbing the upper lid lightly upon it and if that does not suffice he pushes it back with the curette. In some cases pressure through the lid will not cause the lens to escape; in such he removes it by light pressure with the curette applied directly to the eyeball. He never hurries over the operation, but when the lens has been entirely removed and the iris has returned to its normal position he leaves the eye exposed to the light for a few moments; by so doing the pupil contracts and remains contracted and the risk of prolapse is lessened. After the operation he covers both eyes either with a pad of wool and gauze or Gamgee tissue, or pads specially made for the purpose, secures the pads by a light bandage, and puts the patient to bed, where he remains for three days. He removes the dressing on the second day, but reapplies it, and afterwards dresses the eye every day, but keeps both eyes bandaged for a week, without opening either unless there is some special reason for doing so, such as pain, swelling, or redness of the lids, or unusual discomfort. If prolapse of the iris occurs to any considerable extent he removes it as soon as found; small prolapses he leaves alone.

Pathology of Melanotic Growths.—W. S. Handley, in a further lecture on this subject, discusses among other topics that of the clinical diagnosis of malignancy and moles. He says that when a pigmented wart or mole increases in size, ulcerates, or gives rise to bleeding and discharge, it should invariably be treated as a malignant tumor. To wait for the establishment of the diagnosis by palpable enlargement of the regional lymphatic glands is to court trouble. The complete operation as for removal of a melanotic sarcoma should be carried out. The removal of the surgical lymphatic glands is not a very severe surgical procedure as an insurance policy against such a terrible surgical disease. Some surgeons may consider, wrongly in the author's opinion, that removal of the glands is unjustifiable until conclusive evidence of the malignancy of the tumor has been obtained. For this purpose microscopic examination of a small portion of the primary tumor is often valueless, for an innocent mole may present the typical appearance of an alveolar sarcoma. Proof of malignancy can only be obtained by a systematic examination of the whole of the excised piece of tissue at the center of which lies the suspected mole. Two adjoining diametric slices are taken, vertically to the skin surface, through the center of the suspected tumor. Each slice should be about one-eighth of an inch thick. The slices are fixed, hardened, and cleared. One of them is preserved as a translucent naked-eye specimen; the other, divided into pieces of suitable size, is submitted to microscopic examination. If beyond the limits of the primary growth in the naked-eye specimen any trace of black cords or dots can be seen, and if in the microscopic specimens permeated lymphatics or perivascular infiltration can be detected beyond the obvious edge of the neoplasm, the malignancy of the tumor is shown beyond the possibility of doubt. Removal of the regional lymphatic glands must in such a case be undertaken without delay. If the surgeon waits for obvious enlargement of the lymphatic glands, permeation of their tributary and efferent trunks may probably by that time have carried the disease beyond the reach of his knife.

British Medical Journal, April 13, 1907

Relative Opsonic Power of the Mother's Blood Serum and Milk.—This question has been considered in a series of experiments by E. Turton and R. Appleton. From their results it would apear that while the opsonic power of the mother's blood serum for both the tubercle bacillus and the *Staphylococcus pyogenes aureus* is within the normal range, that of the milk from the same source is very low, averaging 0.077 for the tubercle bacillus and 0.11 for the *Staphylococcus pyogenes aureus*. The cow's blood serum appears to have about half the opsonic power of human blood for the tubercle bacillus and rather more for the *Staphylococcus aureus*. The presence of antitoxin has been demonstrated in the milk of animals immunized against various toxins, *e.g.* tetanus and diphtheria toxins. It has also been shown that the milk of animals immunized against the typhoid bacillus and of mothers who have suffered from typhoid fever contains agglutinins for that organism, but it would appear that the amount of these protective substances in the milk is very much less than in the blood. Comparisons of the opsonic power of the child's serum with that of the mother's serum and milk showed that the opsonic power of the child's serum was much less than that of the mother, and the authors consider it an interesting question whether any absorption of opsonins can take place from the mother's milk. They note that authorities seem to be divided on the question of absorption or nonabsorption of agglutinins and antitoxins in the intestinal canal of children.

Suggested Modification in the Opsonic Estimation of Tubercle.—R. D. Campbell has found that for opsonic estimation the tubercle bacilli may be prepared stained beforehand. In common with ordinary dead tubercle bacilli, the stained bacilli in simple admixture with leucocytes are not taken up, but, like the ordinary bacilli in the presence of serum, the dried bacilli were roughly powdered and then placed in a fair quantity of carbolfusehin and stained in the cold for twenty-four hours. The mixture was then centrifugalized, the supernatant fluid siphoned off, and the sediment shaken up with distilled water. This process was repeated three of four times to wash the bacilli. The sediment of stained bacilli was then used in the same manner as the ordinary bacilli, ground with saline solution in an agate mortar, and the bacillary emulsion prepared as usual. The stained bacilli may be kept as a stock. The process is then as usual up to the staining of the films, when, instead of the carbolfuchsin and counterstaining process, a self-fixing blood stain is used, Jenner's being, perhaps, the best. With this stain very fine films may be obtained, with only one slight disadvantage—that the fine eosin-stained granules of the polymorphonuclear leucocytes are apt to cause confusion with the fuchsin-stained bacilli. With experience, however, the difficulty is slight. The fact that bacilli treated with such a powerful stain as carbolfuchsin, containing roughly about 46 per cent. carbolic acid, can be influenced by the opsonin to the extent of allowing phagocytosis is of interest. Is the virus, asks the author, contained in the bodies of the dead bacilli neutralized by the staining process? If so, then there must be another nonvirulent body present, which, in combination with the opsonins in the serum, forms the substance causing chemotaxis in the leucocytes.

Vaccine Treatment of Tuberculosis in Children.—C. Rivière believes that in tuberculin we have a most valuable remedy for localized tuberculosis. There is nothing dramatic in its effects, but, with proper dosage, a steady uphill progress occurs both in the local conditions and in the general health. That this improvement corresponds with an increase of opsonic power the author has satisfied himself by observing the alternate improvement and relapse in superficial lesions with the rise and fall of the opsonic index of the blood. Tuberculin, especially suitable for localized tuberculosis, is also of value in many cases of less localized infection, especially if nutrition be not greatly impaired. Many of the author's cases appeared hopeless from the outset, being either chosen for the purpose of testing the limitations of tuberculin or handed over to him because other treatment had failed. With marked wasting and general illness no good results should be expected; yet even under such conditions tuberculin is occasionally the turning point in a downhill course, so that unless the lesions are known to be widespread it is still worthy of trial. Tuberculin cannot take the place of surgical procedures but should be used in conjunction with these. Especially must caseous material, unless small in quantity, be removed, and this should be done at a time when the opsonic index is at a high level. On the other hand, many cases would escape the necessity for surgical measures if tuberculin were given sufficiently early. The secondary infection, always present with open tuberculous lesions, generally lessens with improvement in the tuberculous process. The advantage of and occasional necessity for a second vaccine is a point to

which the author is giving special attention. Tuberculin treatment should only be undertaken by those who have given it special study. This must be obvious to all who remember the results of its use in the old days.

The Influence of the Antituberculous Serum on the Opsonic Index.—Histories of five cases are given by W. C. Bosanquet and R. E. French. These cases were heated with Marmorek's serum and from their experiments the authors conclude that a series of doses of this serum will, when administered rectally, usually produce a rise in the tuberculoopsonic index; this rise begins after the first three or four doses and soon reaches a maximum, close to which the index remains for three or four weeks, while serum is being given, and does not fall till nearly a week after injections have been omitted. This rise in the opsonic index is coincident in some cases with an improvement in the general condition of the patient and a diminution of the diurnal variation of the temperature. Subcutaneous injections of the serum do not seem to have such a good effect; possibly a series of such injections given at longer intervals might be preferable as avoiding an accumulation of negative phases. If, as is suggested by the authors' experience, a rise in index is produced by the administration of Marmorek's serum, but is not maintained for long after the serum has been omitted, the action of the serum might be explained by its containing an excess of opsonins. This, however, is scarcely to be expected, as a serum, when kept *in vitro*, gradually loses its opsonic power, so that at the end of two weeks the index is only about an eighth part of what it was when the serum was fresh. To prove that Marmorek's serum was not loaded with opsonins the authors tested its opsonic index in the usual way; in the slide made from normal serum they found 568 tubercle bacilli in 200 polymorphonuclear leucocytes, and in the slide made from Marmorek's serum only 72. This gives an index of 0.127. Some other explanation, therefore, must be found for the action of Marmorek's serum.

Münchener medizinische Wochenschrift, April 2, 1907.

The Treatment of Gangrene Due to Arteriosclerosis.—Ropke refers to the fact that where this variety of gangrene is present in the toes, an amputation is usually accepted as the only form of curative treatment. It is not always easy to know, however, to what point the tissues are still in such a condition that recovery may take place. The loss of pulsation in the dorsalis pedis or the posterior tibial arteries need not always prove a contraindication, as shown in the case reported by the writer. The patient was a gouty man of fifty-nine years of age, who developed a gangrene of the toes and at the same time showed an absolute loss of pulsation in the two vessels mentioned. The patient would not permit anything more than an exarticulation of the toe, which was accordingly done and the tissues found to be bloodless. The process extended and required further removal. Hot antiseptic foot baths were then employed for cleansing purposes and the writer was surprised to find that the previously exsanguinated areas began to bleed. The hot baths were repeated daily and after a period of eight days pulsations could be detected in the dorsalis pedis artery. The wound also gradually healed. The procedure indicated apparently constitutes an efficient diagnostic and curative measure in these cases.

Tuberculosis of the Eye Treated with Tuberculin.—Erdmann reports an instance in which this agent was applied in the treatment of a case of tuberculous iridocyclitis in a young girl who was also afflicted with tubercular arthritis. Koch's new tuberculin was employed, the solutions being made with normal salt solution in order to avoid the irritation usually produced by glycerin. The initial dose was 2/1,000 mg. injected into the upper arm every other day. The quantity was increased by this same amount at every treatment until 10 1,000 mg. were given. Fever and headache were then complained of and a local reaction was noticed in the eye. The dose was again increased until 4/10 mg. was given, and during a period of four months the patient had been given sixty injections. No other treatment aside from the use of a dark glass and the occasional instillation of atropin was employed. The eye became practically well again and the patient's general condition was improved at the same time. No recurrence was noted up to the time the report was made, although no further injections had been given in almost a year.

Deutsche medizinische Wochenschrift, March 21 and April 4, 1907.

Pseudoleukemia with Periodical Attacks of Fever.—Tschistowitsch describes a condition of high-grade anemia in a woman who was greatly emaciated and in whom there were attacks of fever lasting from ten to fourteen days, alternating with similar periods in which there was no rise of temperature. The writer states that there is no other infectious disease which presents the same temperature curve and from the fact that a number of similar cases have already been observed by others, he thinks that we may regard this condition as a clinical entity to which he has given the name "pseudoleucæmia cum febri periodica." During the febrile attacks the spleen and the liver become enlarged and during the afebrile interval these organs return to their normal size. Later on in the disease they remain more or less enlarged all the time. The lymphatic glands are also enlarged. In all cases which are known from the literature there is progressive loss of strength and anemia without any increase in the white blood cells. During the afebrile intervals the patients feel quite well. The disease seems to be invariably fatal, although in the author's case a recovery seems to have taken place. He attributes this improvement to the administration of potassium iodide, and for this reason believes that syphilis must be regarded as an etiological factor in the production of the condition. This also seems to be borne out by the clinical histories of the other reported cases.

The Treatment of Mediastinal Tumors with the Roentgen Rays.—Elischer publishes a further report on two cases of mediastinal tumors treated with the Röntgen rays, in which the effect of this agent could be studied in the autopsy findings. In both of these cases the *x*-rays brought about a marked improvement in the patients' condition, although they later succumbed to the effects of the metastatic deposits. The autopsy showed that the tumors were sarcomata of a very malignant type, but in the mediastinum they had been largely replaced by connective tissue. The author is of the opinion that if the application of the *x*-rays had been made earlier, before any metastatic development had taken place, a more permanent cure would have resulted. The cases are interesting as being among the first in which such a demonstration of the effects of the rays was possible.

Enteritis and Appendicitis.—Sonnenburg refers to the difficulty in making a diagnosis when the symptoms are those of a general intestinal or peritoneal infection and there are very few local signs. An example of this is the gastroenteritis which may follow an influenza, where the pains are of a colicky character, marked by a sudden onset, and accompanied by a high fever and a rapid pulse. The leucocyte count is low, however, and this, according to Sonnenburg, constitutes one of the main features in the differential diagnosis. A secondary appendicitis is not uncommon after these attacks and unfortunately its prognosis is usually bad. Where there is any doubt, however, of the presence of a mere catarrhal condition of an influenzal or similar character, the administration of a suitable dose of castor oil will clear the intestine and often alleviate the symptoms. Sonnenburg claims that this remedy will not increase the danger of perforation or gangrene in an inflamed appendix by merely increasing the peristalsis. One should always be prepared, however, to do an immediate operation if no relief is secured.

Chronic Articular Rheumatism and Arthritis Deformans.—Hoffa refers to the uncertainty which exists regarding the pathological classification of these diseases. He claims that there is a distinct difference between the two and that a classification may be made which is based on etiological factors. Three groups of chronic joint diseases may be recognized: (1) A typical arthritis deformans; (2) a chronic progressive polyarthritis or destructive polyarthritis, and (3) a chronic articular rheumatism which follows an acute variety of the same. As regards their etiology, these may be classified as infectious or non-infectious, although much of the following scheme rests largely on hypothesis. The non-infectious group includes chronic traumatic, irritant, constitutional, deforming, and functional arthritis. The infectious group includes both primary and secondary varieties. Hoffa finds that in these chronic cases various forms of braces and supporting apparatus is often of greater value than the medicinal or physical measures.

The Transmission of Syphilis to Dogs.—Fromme reports the results of his preliminary experiments with the inoculation of syphilitic virus from the human subject in dogs. In two cases bits of a penile chancre were inoculated in the anterior chamber of the eye and soon afterward a typical specific keratitis resulted. The period of incubation was sixteen days in one case and twenty-one in the other. The *Spirochæta pallida* was also obtained in smears made from material taken from these ocular lesions. Further experiments in this direction are promised at a later date.

Book Reviews.

Essentials of Medical Electricity. By Edward Reginald Morton, M.D., C.M., Trinity University, Toronto; D.P.H., Fellow of the Royal College of Surgeons, Edinburgh; Medical Officer in charge of the Electrical Department London Hospital; Honorary Secretary of the British Electrotherapeutic Society, etc. With eleven plates and seventy illustrations. Chicago: W. T. Keener & Co., 1905.

In this little volume the author has succeeded in presenting the essentials of this important subject both clearly and concisely. The book is well written, readable, sufficiently illustrated, and is a good example of the best class of compend.

Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Erkrankungen des Urogenital-apparates. I. Jahrgang, Bericht über das Jahr, 1905. Berlin: S. Karger, 1906.

This work is similar to others issued in Germany in which is considered the progress made during a given time in some special field of medicine. It is believed to afford a complete and ready means of reference to what has taken place in the science of urology during 1905, and a glance through its pages will show that the labor expended on this subject has been enormous. It is evident that the constantly growing literature has been reviewed in order to be made accessible to the body of the profession as well as to the specialist. The book opens with an account of the life and labors of Nitze, who was one of the founders and editors of the book and is generally recognized as a leader in the field of genitourinary diseases. The manner of arranging the text is very convenient; each writer is given a paragraph containing a brief abstract of his paper and each division is supplemented by a voluminous bibliography. The work is very complete and will undoubtedly meet with a favorable reception among those engaged in this particular field of medicine.

Conservative Gynecology and Electro-Therapeutics. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. Betton Massey, M.D., Attending Surgeon to the Oncologic Hospital, Philadelphia, etc. Fifth Revised Edition. Philadelphia: F. A. Davis Company, 1906.

The work under discussion is one of a comparatively small group devoted to the electrical treatment of gynecological affections. Electricity is undoubtedly a most valuable therapeutic resource, but its universal application to almost every phase of gynecological disease is a visible departure from the realms of common sense. As a means of aiding diagnosis it can in the form of appropriate apparatus be said to constitute a most efficient aid to gynecological practice, but as a cure for all pelvic conditions from fibroids to cystocele it will hardly meet with general approval. The book is an excellent example of what enthusiasm in the belief of one therapeutic resource will lead to—an enthusiasm which leads the author, who has set out to write a book on gynecology, to devote a chapter in the middle of the book to the cosmetic application of electricity. The chapter on the treatment of uterine fibroids by the electric current will probably meet the greatest amount of attention because it is in this field that the author has been most frequently heard. The final result in the 110 cases thus treated is hardly favorable and some of the measures advocated, such as abdominal puncture with a special electrode, will hardly appeal to one on the score of safety. About half the book is devoted to the technique of the various procedures advocated in the previous chapters, and impresses one with the exceeding complexity and corresponding expense of the apparatus needed for carrying out these methods of gynecological treatment

Indications for Operation in Disease of the Internal Organs. By Prof. Herman Schlesinger, M.D., Extraordinary Professor of Medicine in the University of Vienna. Authorized English Translation by Keith W. Monsarrat, M.B., F.R.C.S. Ed., Surgeon to the Northern Hospital, Liverpool. New York: E. B. Treat & Co., 1906.

The far-reaching activities of modern surgical endeavor make the appearance of a book of this kind opportune, for the question of operation is one which constantly presents itself to the general practitioner and is often very difficult of decision. To meet this want the book in question has been produced. Prof. Schlesinger is one of the best known clinicians in Europe and the book is the result of his many years of practical experience. Although written by one who is essentially an internist and physician, there is no lack of sympathy for the surgeon and his aims. All discussion has been avoided, but in each chapter are included a few remarks on the etiology, pathology, clinical course, diagnosis, and differential diagnosis, in order that the subject under consideration may be more thoroughly grasped and appreciated. The main purpose of the undertaking, however, is to enable the general practitioner who is not in hospital practice, to arrive at an independent opinion on the advisability of operation in the presence of internal lesions. The scope of the book is quite extensive, all the structures which may be included in a general way in the interior of the body being separately discussed. At the end in an appendix, are three very good chapters on the induction of premature labor, operations on diabetics, and the general influence of operations on the body. The book is well written and not burdened with illustrations for which there is no necessity. It will undoubtedly meet the demand for which it was written, as it stands practically alone in this field.

The Technique of Operations upon the Intestines and Stomach. By Alfred H. Gould, M.D., of Boston. Philadelphia and London: W. B. Saunders Company, 1906.

This book may be regarded as a departure in works on surgery, as it practically represents the results of an extended research expressly undertaken for the purpose of simplifying or improving the best known gastrointestinal operations. The experimental study of the technique was made upon animals, mainly cats and dogs, and then carried out on the human cadaver for purposes of anatomical corrections. Not all the methods in vogue are given, but those included will afford to the reader a sufficiently comprehensive view of the requirements of gastrointestinal surgery. The opening chapter includes an account of the very interesting studies on the " pair of intestinal wounds made by the author in conjunction with Dr. F. B. Harrington which are already well known. The technique of operation is considered in great detail and constitutes a very valuable feature of the book. The suggestions are too numerous to mention here, but all have been thoroughly tested by the author in his extended operative experience. The text is clear and concise, although in some instances conciseness is obtained at considerable sacrifice of other desirable qualities. A few words must be added regarding the illustrations, which are beautiful and often help out where the text fails in being sufficiently explanatory. They are well drawn and well executed and constitute an important factor in what will certainly prove a most acceptable book on surgical technique.

L'Evaluation des Incapacités Permanentes, Basée sur la Physiologie des Fonctions Ouvrières des Diverses Parties du Corps. Par le Dr. Ch. Remy, Professeur agrégé à la Faculté de Médecine de Paris, Membre de la Société de Biologie, Chirurgien Honoraire de la Maison Départementale de la Seine. Avec 63 figures dans le texte. Paris: Vigot Frères, 1906.

This book fills well a place which no book in English more than attempts to occupy; only one does this and even its author recognized its tentative development, while this one has a logical foundation which gives it a peculiar value to the special public for which it is intended, the adjusters of the companies, which by insuring the workmen of an industry against the accidents of their daily tasks protect the employer from "accident suits" for damages. Hitherto, both since the passage of the "new law" and previously, the basis of settlement has in every case been by mutual agreement on an arbitrary valuation in which the agent of the company endeavored to settle for the lowest possible figure and the injured workman or his agent attempted to get all he could, and usually neither was satisfied. The aim of Dr. Remy is to substitute for this unsatisfactory system another having rational foundation. While for the most part the discussions are technical, some have very general interest.

La Régénération des Familles et Races Tarées. Prophylaxie et Hygiène Thérapeutique de l'Hérédité Morbide. Par Dr. E. Contet. Paris: Vigot Frères, 1906.

This rather unusually interesting book treats of a subject much too seldom considered, the consideration of the physical condition of the possible parents and their family inheritance of physical and mental traits in relation to their possible and probable offspring. In effect it is an amplification and development, in large measure a fulfilment, of the precept in Raymond's book of last year, l'Hérédité Morbide,—that it is the duty of the family physicians to point out to the contracting parties the consequences of physical misdoing, as their legal adviser might advise them not to break the law of the land. The book is well written and certainly sets the reader thinking, whatever his opinion of the author's teaching may be. It is well, very well, worth reading, and we trust that an English translation will not be long delayed.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held April 5, 1907.

DR. JOHN F. ERDMANN IN THE CHAIR.

A Case Showing Result of Operation for Habitual Dislocation of the Patella by a Modification of Krogius' Method.—Dr. WILLIAM C. LUSK presented this patient, who was forty-one years old. Six years ago, while running, he slipped on some ice and fell over backwards, dislocating both his patellæ outwards. Afterwards, always on flexion of the legs, the patellæ slipped outward over the external condyles. He was admitted to Bellevue Hospital and operated on January 14, 1907. The right knee was operated upon by a modification of Krogius' method. Krogius divided the aponeurotic structures down to the capsule of the joint along the outer side of the patella and the iliotibial band above to relieve the shortened tissues on the outside of the joint, then making a musculo-aponeurotic flap on the inner side of the joint without entering the joint on this side either, he carried this flap in front of the quadriceptus extensor tendon around the upper border of the patella and laid the extremity of it in the wound which had been made in the aponeurotic structures at the outer side of the joint and sewed it there. Then the edges of the wound at the inner side of the joint, made by the removal of the musculo-aponeurotic flap, were sutured together, thus shortening to this extent the tissues at the inner side of the patella, by the support of which the tendency to outward dislocation would be counteracted. The operator in this present case found it necessary to carry the incision for the relief of the restraining structures at the outer side of the patella, upward and inward through the muscle fibers of the vastus externus to the outer edge of the quadriceps extensor tendon. Then finding furthermore that by Krogius' method only the tip of the musculo-aponeurotic flap would reach into the wound in the divided structures at the outer side of the joint, instead of carrying this flap in front of the quadriceptus extensor tendon, he made a blunt dissection beneath the tendon above the subquadricipital bursa and carried the flap through the opening thus made and then laid it in the musculo-aponeurotic wound at the outer side of the knee-joint, which it was found to fit accurately from its upper limit down to within half an inch of its lower end. The flap was sutured in place with chromic gut. An anatomical specimen was shown illustrating the *surgical anatomy* of the operation. The outer edge of the aponeurotic insertion of the vastus externus into the patella, receiving the terminations of the muscular fibers, corresponded to the edge of the underlying portion of the subquadricipital bursa, so that division of the muscular fibers above this line could be made without entering the joint. The division of the muscle fibers at this situation was an important part of the operation since they were shortened and on flexion of the leg they alone pulled the patella outward over the external condyle, after the shortened tissues attached to the outer border of the patella had been cut. It seemed equally important that this upper muscular portion of the wound made at the outer side of the knee-joint to relieve the shortened tissues, as well as the lower aponeurotic portion, should be filled in by the transplanted flap from the other side, so as to prevent a hard scar from forming at this situation where a re-establishment of pliability instead seemed essential. A branch of the superior internal articular artery entered the muscular portion of the flap transplanted from the inner side. The width of the flap was planned so as to remove the exact amount of tissue that would leave behind edges of muscle and aponeurotic structure of a sufficient length to be brought together with the right amount of tension to hold the patella firmly inward. The result of the operation was primary union. On March 12, 1907, the patient gave up the use of his cane, no longer having the feeling of insecurity in his gait. On April 5, 1907, he had voluntary flexion of the right leg of ninety degrees, and forced flexion of about another ten degrees. The right patella did not dislocate.

A Case of Fracture of the Patella.—Dr. CLARENCE A. MCWILLIAMS presented a man, who had been admitted to the hospital last May, two days after he received an injury to the left knee. He fell down an areaway, striking a board. He then walked one block and, two days later, was admitted. There were two infected skin wounds. It was impossible to palpate the bony structures at all, but the *x*-ray plate showed the patella fractured in five or six pieces. Twelve days after the injury he was operated upon, the operation having been delayed because of the infected wounds on the knee surface. He preferred the transverse rather than the vertical incision, because it allowed the lateral tears in the vasti expansion to be sutured. Three loose pieces of bone were removed. The joint was filled with blood, which was spooned out and the cavity cleansed. A purse-string suture was placed around the remaining fragments, as well as a vertical one. The joint was kept in splints for twenty-one days, then massage was given and the patient was allowed to walk on the twenty-eighth day. He made a good recovery.

DR. HOWARD LILIENTHAL believed that these were the cases that should be treated by operation, and he congratulated Dr. McWilliams upon the beautiful results obtained. In the ordinary transverse fractures, however, he had been in the habit of using a massage treatment. In this non-operative treatment the patient was out of bed, but in splints, on the eighth day, and a cure was accomplished which was as perfect as in the patient presented on the forty-eighth day. He called attention to the fact that King Edward's fractured patella was not sutured and yet good results were obtained. In cases of comminuted fracture, however, operation was proper; also, in open fractures.

DR. JOHN F. ERDMANN asked Dr. Lilienthal what he did, in this massage treatment, to bring the fragments together.

DR. LILIENTHAL said that the first thing to do was to place an arrangement of tapes above and below the patella, strapping the fragments together, an ordinary bandage being placed on. During massage, however, everything was taken off, and the fragments held in place by an assistant. The massage was given with the limb in an inclined plane, completely relaxing the quadriceps muscle. Massage should be begun above and continued down. It should be given fifteen minutes both morning and afternoon. On the eighth day it was supposed that adhesions had taken place which would hold the fragments together and the patient then was allowed to get up, but with the splint on.

DR. MCWILLIAMS said that, if the separation was half an inch, he always operated, and with magnificent results.

DR. LILIENTHAL said that Dr. McWilliams was very fortunate in not having seen or encountered infection of the knee joint following the opening of an aseptic articulation. He had seen several such cases, and one need only see it once to make him extremely careful in operation about this joint.

DR. ERDMANN said that he never opened the knee joint without fear and trepidation.

DR. A. ERNEST GALLANT said that he had had cases treated by the rest treatment and massage, relieving the adhesions which had formed, and he thought that Dr. Lilienthal had not been given sufficient credit for the good results he had obtained.

Extensive Removal of Bone after Depressed Fracture of the Skull.—Dr. JOSEPH B. BISSELL presented a man who had been admitted to Bellevue Hospital on September 14, 1905. He had been hit on the head by a falling brick, was brought into the hospital on a stretcher, and recovered consciousness in the ward and never lost

it afterwards. A cut on his head was three inches in length, and a depressed fracture was found when the wound was being dressed. The next day he developed symptoms of paralysis of the left leg and arm. The depressed fracture was cut down upon and a large amount of bone was removed. The longitudinal sinus bled profusely. The patient made an uneventful recovery so far as the head lesion was concerned. Within five or six months epileptiform convulsions appeared, but consciousness was never lost until recently. These attacks had increased lately. He had also recently gastric crises. There was partial anesthesia of the left arm. He had great difficulty in getting up from the chair and he dragged the left foot.

Dr. Howard Lilienthal asked if another operation was not indicated in order to loosen possible adhesions; he thought this to be strongly indicated, especially in view of the fact that the epilepsy had only recently developed. The patient, too, should be carefully watched during an attack. He had had a child with such attacks and he saw the patient in several of them. During the attacks the scar was drawn in. He believed that in this case there was a decided indication for the removal of more bone.

Dr. Bissell replied that at the first operation much bone had been removed. At the same time he believed that the indications now pointed to another operation.

Drainage in Operations upon the Biliary System.—Dr. Howard Lilienthal read this paper. He said that the surgery of the biliary passages was still in a decidedly unfinished state, and in spite of the earnest work of many conscientious surgeons. The number of deaths, except in the uncomplicated cases, was still great. Operative recovery after work upon an uninflamed gall-bladder was almost constant, and the percentage mortality after the simpler operation upon this viscus, even in acute cases, was low. When jaundice appeared as a complication, however, and surgical interference with the common duct was required, the picture changed, and even in the most skilful hands the death rate was shocking. The impressions recited in his paper were from a collected experience with more than 300 cases, including examples of nearly every known operative procedure on the gall-bladder and its associated ducts. He had reached the conclusion that in operative jaundice, especially the chronic variety, the skilful use of biliary drainage was the most essential measure in reducing the operative mortality. He also believed that the longer the jaundice had existed the greater must be the caution in relieving the condition. Chronic obstruction led to secondary cirrhosis of the liver with its attendant dangers, not the least of which was hemorrhage; also, just as reflex anuria might occur after the operation for the relief of renal obstruction, so in long-continued hepatic blocking, constant, or intermittent, the attempted surgical drainage of the liver through its ducts might be followed by suppression of bile. This suppression might be gradually relieved after a few days, or it might persist and become the cause of a fatal cholemia. He then gave illustrative cases. Dr. Lilienthal summed up the vital points of this subject as follows: (1) That the scientific and judicious employment of preliminary drainage in obstructive jaundice would probably lessen the dangers of such steps as might be necessary for permanent cure. (2) That this drainage should form the sole object of the surgeon's work until the factor of cholemia had become eliminated. (3) That radical operations should, in most chronic cases, be postponed until hepatic engorgement and icterus no longer existed.

Dr. Samuel Lloyd said that the point brought out by Dr. Lilienthal regarding the deaths from cholemia had bothered all of them.

Dr. Joseph B. Bissell said that the conclusions given by Dr. Lilienthal were very valuable. He had had many cases in which he wished that he had not finished the operation at one sitting.

Dr. John F. Erdmann reported a case that he had operated upon for cholangitis and had washed the liver out well. The other day he washed the hepatic ducts out, getting small stones and sand. This was followed by hemorrhages from the nose and stomach and death.

Dr. A. V. Moschcowitz said that many might consider his views somewhat erratic, but he had never been a believer in hepatic drainage. It always appeared to him that, in all cases requiring drainage, the common duct was either free, or it was not free. If it was not free no operation was complete until it was made free; but if the common duct was made free there was then sufficient drainage into the intestine.

Dr. Lilienthal, in closing the discussion, said that some had missed the point of his paper, because he agreed with what had been said. In one of the cases he recorded he took out the gallstone and sutured the parts. If there was a deep jaundice, a chronic jaundice, the correct thing to do was to drain the gall-bladder and to drain it slowly. He emphasized the importance of draining the liver through the gall-bladder by a slow method, and gradually increasing the flow and avoiding shock. If icterus was present, attack the common duct and remove the obstruction and complete the operation.

New Operation for Cystocele in Women.—Dr. J. Riddle Goffe presented this communication, illustrating his remarks with diagrams. He presented what he claimed to be a novel procedure for the cure of cystocele. After reviewing the history of the various operations for the cure of cystocele in brief, he said that these previous operations had two objections: first, in attempts to diminish the size, wrinkling up the base of the bladder, sulci were left in which urine would accumulate; second, the fundamental principle which underlay the question, trying to get support *under* an organ to hold it up. Dr. Goffe said that nature's plan of retaining organs in place was not in placing anything *under* an organ, but in *suspending* it from a bony framework. The uterus was not held up, but was supported by ligaments in accordance with nature's law. The bladder normally was suspended by its ligaments which hung from above; it was supported chiefly by its attachment to the uterus, the broad ligaments, and the lateral fascia on either side. It was the giving way of that support, as well as the giving way of the fascia at the base of the bladder, that produced the hernia they must deal with. Dr. Goffe's plan was to dissect away the bladder, freeing it entirely from all structures except those above. He then rotated this viscus on its transverse axis, carried it up, and stitched it to the uterus. The work was done per vaginam. The technique of the operation was described. He had had from fifty to sixty cases under observation and the results so far had been entirely satisfactory. He had not yet learned of a single recurrence.

Dr. Herman L. Collyer said that all knew what dead failures the operations for the cure of cystocele had been, and believed that this operation described by Dr. Goffe was the first that offered them chances of success.

Dr. Howard Lilienthal thought that the operation was a perfect anatomical one. He asked Dr. Goffe if the male bladder was suspended or not. He believed the male bladder was supported "from below."

Dr. Joseph B. Bissell said that most cystoceles were due to prolapsus uteri, and he asked if Dr. Goffe did not first fasten the uterus up. He did not see how one could suspend the bladder without first suspending the uterus.

Dr. Howard Lilienthal asked Dr. Goffe if he had had pregnancy following this operation he described, and with what results.

Dr. Smith of Hartford, Conn., said that the Mayos, in Rochester, Minn., had been doing successfully the old-fashioned English operation, which was similar to the one described by Dr. Goffe. But they did it in women past the menopause and not in young women.

Dr. J. Riddle Goffe, in answer to Dr. Lilienthal, said that anatomists did not describe differently the male and

female bladders in regard to the supports. In answer to Dr. Bissell's query, he said that the uterus must be supported before a cure of the cystocele could be effected, first shortening the sacrouterine ligaments. He had had two patients that became pregnant after this operation and they went through all right.

The Surgical Anatomy of the Esophagus.—Dr. CHAS. R. L. PUTNAM presented this communication. The esophagus began at the lower border of the cricoid cartilage, which was opposite the sixth cervical vertebra, or the intervertebral disc below it. It ended near the level of the eleventh dorsal. From its origin to the second dorsal it was called cervical; from that point to where it passed through the diaphragm it was called thoracic; from this point to where it entered the stomach it was called abdominal. Its total length was 25 c.m., the cervical portion averaging 5 c.m., the thoracic 15-17 c.m., and the abdominal 3-4 c.m. The caliber of the esophagus varied very much at different levels, as shown by casts and drawings that he presented. It was shown that the least distensible places were at the beginning and at a point behind the summit of the aortic arch. This point might be pressed upon by aneurysm of the arch, and, therefore, constriction in this region should have history and physical signs most carefully studied. These narrowings, as shown by the casts, had surgical significance as follows: First, they were supposed to determine the points at which ingested caustic solutions would be most apt to be the cause of ulceration and stricture; second, they might cause an arrest of foreign bodies; third, where the narrowing in the esophagus was partly due to relations of other organs, changes in the latter might increase the degree of narrowing to the extent of producing a clinical stricture. Thus aneurysm of the aortic arch was said to cause dysphagia; he also had been told of a case of pericarditis giving this symptom. Enlargement of the peribronchial, peritracheal, or esophageal lymph nodes might produce the same result. This accounted for the apparent relapses in cases of stricture of the esophagus which occurred during attacks of pneumonia. The approach to the esophagus in the neck was best made from the left. In his experimental work on the cadaver the so-called extrapleural routes were not promising, and whatever was accomplished would be by the transpleural route, which shortened distances and avoided dead spaces. This was shown by an examination of the mountings.

Dr. W. C. LUSK discussed this communication.

Instrument Table, Sterilizing Drums, and Dressing Boxes.—Dr. H. H. M. LYLE made this exhibition of instruments and apparatus devised for the purpose of expediting work in hospital operating rooms.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held March 28, 1907.

DR. HOWARD C. TAYLOR IN THE CHAIR.

Cyst of Kidney Simulating Ovarian Cyst.—Dr. G. H. BALLERAY presented this and the following specimens: No diagnosis of the condition was made until operation. The patient was thirty years old, and had had one child. When he saw her she had a child seven or eight months old. She had a growth in the abdomen, but it was decided not to operate immediately. Two months later she was operated on and a growth was found that filled the abdominal cavity. It could be felt *per vaginam*. It occupied the median line. When the incision was made the growth had the appearance of an ovarian cyst. When about eight pints of fluid was withdrawn he found that it was impossible to withdraw the cyst by gentle traction. The uterus, tubes, and ovaries were perfectly free. The question of removal of the tumor came up. He removed the secreting surface, cut off the redundant part of the tumor, and brought the surfaces together and stitched them. The woman never had any elevation of temperature, and in three weeks time was sitting up. The interesting point was that the tumor was peculiar in that it was not unilateral, but seemed to be as much on the right as the left side, although the cyst involved the left kidney. As a rule these tumors were unilateral and gave but little difficulty in diagnosis. Even after its removal he was not satisfied but that it might have been a Wolfian cyst. The specific gravity of the fluid was 1.005 and the fluid did not coagulate on the application of heat.

Dr. HOWARD C. TAYLOR said that he had had a case in the hospital which turned out to be a tumor of the kidney and which was taken to be an ovarian cyst when she was first examined. The woman had an endowment bed and was admitted to the medical division, refusing operation. She was on this service for six or eight months and then transferred. She had been tapped six or eight times and more or less fluid had been removed. She was finally induced to submit to operation. She was along in years, seventy years old nearly, and the operation was done hurriedly, removing what was supposed to be an ovarian cyst. The tumor was sent to the pathologist, who sent back word that it was a hydronephroma. This case was of interest because she was under observation so long and had been tapped a number of times. He operated upon what was supposed to have been an ovarian cyst, but the pathologist reported that it was a hydronephroma.

Cyst of Fallopian Tube with Twisted Pedicle.—Dr. Balleray's patient came to the hospital for the purpose of having her perineum repaired, there being a tear through the sphincter, with loss of control over the bowel function. While undergoing preparation for operation, she complained of pain in the pelvis and an examination revealed a small tumor back of the uterus which seemed to press upon the rectum. Before entering the hospital she said she felt something pressing upon the rectum. The pain had somewhat increased. Later the mass became tender and it was then decided to open the abdomen and find what it was. A cyst of the Fallopian tube was found and the pedicle was twisted upon itself. It looked like a dropsical hydatid Morgagni. In all probability a puncture through the vagina would have been all sufficient in this case.

Ruptured Dermoid of the Ovary.—Dr. Balleray saw the patient one week before she was operated on, and, at that time, the tumor reached one and one-half inches above the umbilicus. The increase in size was very rapid; it doubled its size in two months time. On the day she came to the hospital she complained of intense pain and was given a hypodermic of morphine, one-quarter of a grain, which had to be often repeated. Her pulse was 150, temperature 104°. There was vomiting, the face was sunken, the abdomen tender and distended, and her condition seemed to be desperate. She was removed in an ambulance to the hospital, the abdomen was opened, and there was found a ruptured dermoid cyst, with the contents extravasating into the abdominal cavity. It held a quart or more. There was more or less general peritonitis. The tumor, together with the ovary of the other side, was removed. A good recovery followed. The case was of interest in showing how such growths might produce very distressing conditions in such a short time. He thought that probably there was a process of degeneration going on inside the cyst and probably some large vessel was broken into, with hemorrhage into the cavity of the cyst causing its rupture.

Dr. HOWARD C. TAYLOR thought this condition, dermoid of the ovary, must be more or less rare; he had never seen such a case.

Fibroid of Uterus.—Dr. Balleray presented this specimen, not because of any special interest in the tumor itself, but because it gave him an opportunity to say what he had always endeavored to practice or preach, that often one might deviate from the rule of practice. The woman

was forty-three years old, and the tumor had existed for some time. The family physician stated that within the last six months it had doubled in size. The general condition of the woman was not bad. She had a small pulse and suffered from mental depression. She was opposed to any operation. The tumor was such that it blocked the pelvis. There was found one large band extending from the sigmoid flexure and rectum, across, and very adherent to the surface of the tumor. It was attached to the cecum on the other side. The tumor was removed and the recovery was slow, but satisfactory. His contention had always been that when a woman was approaching the menopause, with a fibroid that was not causing pain, or not growing rapidly, she should be left alone.

Adenocarcinoma of the Uterus.—The speaker presented two specimens of adenocarcinoma of the uterus. In both cases the tumor was in the body of the uterus, which was comparatively rare. Carcinoma of the cervix was quite common. There were probably fifty cases of carcinoma of the cervix to one case of carcinoma of the body of the uterus. The two cases presented themselves to him within six weeks of each other. The first case was a woman, fifty-six years old, who ceased to menstruate at forty-five and had been free from any bloody discharge from the vagina since until three months ago, when she had irregular hemorrhages from the vagina. The physician who examined her could find nothing about the cervix. Dr. Balleray examined her and found the uterus enlarged, the cervix normal, and he expressed the opinion that it was probably a case of malignant disease of the body of the uterus. She went away and returned after six months time with the report that she had been bleeding continuously all that time. He removed by curettage a considerable amount of material and sent to the pathologist who reported it to be adenocarcinoma. The uterus was removed and the subsequent progress of the case was not of special interest. The pathologist's report was read. The second case occurred in a woman, forty-three years old. She had menstruated up to one year ago regularly. Then it became irregular. When she was sent to the hospital five weeks ago she had been flowing continuously, but not profusely, for some time. He found the uterus to be somewhat enlarged. Upon examination of the scrapings, and the pathologist's report that it was malignant, an adenocarcinoma of the uterus, the uterus was removed.

Ruptured Tubal Pregnancy.—This woman had not escaped a period when she was seized with severe abdominal pain, and when the physician saw her she was absolutely pulseless. The diagnosis of ruptured ectopic was made and she was removed to the hospital. Her pain occurred at 11 o'clock in the morning; at 6 o'clock she was pulseless and he doubted if anything could be done. At operation the abdomen was found to be filled with blood. The sac was extirpated and all the blood was removed. The abdomen was full of blood, even filling the spaces under the diaphragm and liver, and was found in the flanks. She was flushed with six gallons of water. The morning following the pulse was 112 and could be felt. That afternoon she began to vomit, the abdomen became distended, the vomiting then became continuous, and with a fecal odor, she gradually became worse, and, that evening, the temperature was 104°; at midnight it was 105°, the distention became very marked and she died. Some of the fluid contained the *Bacillus coli communis*. The corpus luteum of pregnancy was found on the side opposite to the rupture.

Dr. Howard C. Taylor said that he did not take the time to wash all the blood out of the abdominal cavity and thought that Dr. Balleray made a mistake in doing this.

Dr. Egbert H. Grandin thought that Dr. Balleray did the right thing. Years ago they tried to remove all the blood from the peritoneal cavity and prolonged the operation. They gradually came to the conclusion that the peritoneum could take care of itself. Dr. Balleray's case, he believed, died from the general toxemia, chiefly intestinal. His technique was in accord with that which was to-day followed by all operators of experience.

Dr. Balleray believed that a certain amount of pure blood did no harm, but bloody serum was different, and was not disposed of so rapidly. Blood or serum did not do much harm; but bloody serum did.

Placenta Prævia.—Dr. Leonard S. Rau read this, the paper of the evening. While it was true that this condition had been recognized and treated as far back as 1685, still to-day it was dreaded, for the results were far from gratifying. Placenta prævia was no longer considered a rare condition, and to-day the proportion was about one case in 500. The statistics depended on whether they were taken from hospitals or private practice. In the former the cases occurred much oftener because these cases were the ones that the practitioners were only too glad to get rid of and to send to the hospitals. Placenta prævia was more common now than formerly and the cause was rather difficult to explain, especially in this country and France, for as he said he would show later, frequent and rapidly following labors were considered among the important etiological factors, but to-day they did not see women who had many children, for it was certainly an exception to deliver a woman who had had more than two or three children. This referred particularly to those who practised among the better classes. Placenta prævia was usually divided into three classes, central (total), partial (lateral), and marginal. The central implantation was the rarest of the three, and some even denied its existence. Of the thirteen cases personally reported to him by Dr. Edgar, four occurred in primiparæ. Of forty cases reported by Dr. Marx, ten were in primiparæ. The lower the implantation of the ovum the more likelihood of a placenta prævia. This implantation might be due either to conditions in the ovum itself (Hofmeier), or changes in the mucous membrane of the uterus. Women doing manual work were prone to placenta prævia partly on account of the work itself and also because the uterus did not have a chance to undergo subinvolution, because of the early rising from bed after delivery and immediately beginning work, and, furthermore, because this was the class of women who had many pregnancies at very short intervals. He offered as an additional etiological factor to explain why placenta prævias were more common to-day than formerly: that the women of to-day so often had abortions performed because they wanted no children shortly after marriage, or else did not want a second one. Consequently they got rid of the products of conception and, as this might happen many times, it explained to his mind why, when they did allow pregnancy to go on to term, the case was likely to be one of placenta prævia. After treating of the symptoms, especially hemorrhage, he considered the diagnosis and said that on several occasions he had been able to make a tentative diagnosis by external examination alone, for he found on inspecting the abdomen a very distinct depression just above the symphysis. The prognosis was always grave for the child; for the woman, it depended upon a number of conditions. It also depended upon the method of delivery adopted. Dr. Edgar sent him a report of thirteen cases with two maternal deaths; Dr. Marx sent a report of forty cases with four maternal deaths. The treatment he divided into expectant and operative. If a woman had slight bleeding in the sixth or seventh month, which yielded at once to rest in bed, she might be left alone with the warning that she must keep very quiet, exercise little, and she should be instructed to send for medical aid as soon as possible if the bleeding again started. If the bleeding continued, one could tampon the vagina tightly and await further developments. In the severer forms of hemorrhage interference became imperative. When the cervix admitted one or two fingers and was easily dilatable, some recommended manual dila-

tation, version or forceps, and immediate delivery. This might favor the prognosis for the child, but it increased the danger to the mother. The temptation to hasten the termination of labor was naturally very great, but personally he did not favor this method. He preferred to introduce a bag, which usually stopped the hemorrhage and caused dilatation. Then, after sufficient dilatation had taken place, he did a version in head or transverse positions, brought down a foot, attached a weight to it, allowed the breach to act as a tampon, and left the delivery to nature. The results to the child might not be as brilliant as in the rapid method, but they were infinitely better for the mother. When this method did not control the hemorrhage one must then terminate the labor by immediate delivery, and, if necessary, pack the uterus after the placenta had come away or been extracted manually. When the cervix was not patulous, rapid dilatation by the Harris or Bossi dilator must be considered. Some preferred cesarean section, vaginal, or abdominal, but it seemed questionable to add to the patient's condition by an abdominal operation, or the difficulty and increased bleeding during a vaginal section. During delivery it might be necessary to stimulate freely, or to do a transfusion or hypodermoclysis, also to give a high enema with whiskey or brandy immediately after the delivery. In every case he gave hot douches, a hypodermic of aseptic ergot, and made his nurse hold the uterus for at least two hours. The after-treatment consisted of prolonged rest in bed, no excitement, etc. The greatest aseptic precautions should be maintained in all cases of placenta prævia, for it was most unfortunate to pull a woman through a difficult labor to have her succumb to sepsis. It was an open question whether they were justified in advising a woman against becoming pregnant again, if she had been safely delivered of a living child, and not allow her to take the chances of another placenta prævia with all the risks that this condition entailed.

Dr. Clifton C. Edgar said he was not in accord with Dr. Rau in his statement regarding the frequency of placenta prævia, for it seemed to him that it was more frequent than one in 500 or 600 cases of confinement. One to 200, or even 175, would not be out of the way. There were many cases of accidental hemorrhage which were really cases of marginal or lateral implantation. As to the etiology, he said he was interested in the statement that it was more frequent in those who had had frequent criminal abortions performed. Personally he knew but little about the etiology except that it occurred more frequently in multiparæ than in primiparæ. He said that Dr. Rau had stated that he was inclined to believe that subinvolution was an etiological factor and occurred more often in the upper than in the lower classes, because of the frequency of abortions among them. Dr. Edgar was not in accord with this view. Among the lower classes there were no reliable statistics to show that they were more prone to placenta prævia than the woman of the higher classes. In the maternity hospital these women refused to remain in as long as they should. Any woman attended by a midwife was usually up and at work inside of a week. With regard to the prognosis, the condition of the cervix determined that to a large extent. The question should be asked: Is the fetus dead? If one could ignore the fetus and confine the attention to the mother alone, a better prognosis would attend. Also, the question should be asked: Is she a primipara or a multipara? Placenta prævia was four times more common in the latter, but in primiparæ the prognosis was infinitely worse than in women who had given birth to several children. These three features in cases of placenta prævia were very important in determining the prognosis, *i.e.* the condition of the cervix, whether the fetus was living or dead, and whether the patient was a multipara or a primipara. Dr. Edgar said he was in accord with what was stated regarding the treatment. But he could not recommend the hydrostatic bags as Dr. Rau did. The more cases of placenta prævia he saw the less aggressive was he as regards treatment. The treatment depended upon that barrier, the cervix. If it was partially dilated he used gauze, which answered two or three purposes; it changed the cervix into a condition which admitted of easy dilatation; it controlled hemorrhage; and lastly, it set up uterine contractions.

Dr. Egbert H. Grandin considered the question of vaginal cesarean section, and said that if one could make a positive diagnosis of placenta prævia at or near term the ideal operation might be cesarean section as offering the child a better chance and not subjecting the mother to greater risk. The diagnosis of placenta prævia was not, as a rule, made until after one or more hemorrhages had occurred; then resorting to cesarean section would possibly nullify the chances of the mother, and might not increase the chances of the child. As to the vaginal cesarean section there was not one logical reason why it should be performed in cases of placenta prævia. In case where it was a marginal or a total implantation, the cervix was certainly dilatable. With regard to treatment, what he had taught twenty-three years ago he taught to-day, and had not changed his method of procedure. He had never used the bags, such as the Barnes' or McLean's modification. He saw no use in the Bossi dilator. Its use often produced what rational surgery aimed to avoid. So soon as the diagnosis of placenta prævia was made the indications were clear, empty the uterus with as much speed as was consistent with maintaining the integrity of the maternal parts. Always consider the life of the mother before that of the child. When the cervix was dilatable, the indication was for the use of one instrument, and that instrument was the hand. Dilate the cervix until the fist could enter, then do a version. For the interest of the child the version should be followed by rapid delivery or extraction. In primiparæ, when the cervix was not dilatable, he still used the gauze tampon, dilating the cervix up to the internal os as much as he could; he packed the cervix full of sterile, not iodoform gauze, and the upper part of the vagina. Then in sixteen or twenty-four hours he anesthetized the patient, removed the gauze, and completed the extraction of the child. The gauze had softened and rendered dilatable the hitherto undilatable cervix, and the complete dilatation could then be done manually, version performed, and a rapid extraction effected.

Dr. S. Marx was entirely in accord with Dr. Rau, although he believed his subdivision was rather a complicated one. He tried to teach a simpler one, dividing placenta prævia into the complete and incomplete. He asked Dr. Rau if he understood him to say that frequent abortions was an etiological factor. He met with more cases among the upper than the lower classes. Placenta prævia was due to too frequent pregnancies and too early getting up. It was the subinvolution which gave rise to placenta prævia. As to prognosis in the forty cases, reports on which he had given to Dr. Rau, the prognosis of the mother was ten per cent. The average number of cases was one to 500. The maternal mortality should be less than ten per cent. If the children were viable every one was born alive. These were the cases he had seen in consultation practice. In over 200 cases in which he had tried to dilate the cervix with the hand he had failed in but five. When one used the Bossi dilator tears would certainly result in the lower uterine zone; tears not only in the cervix, but clear into the broad ligament. He saw no reason for doing a cesarean section pure and simple. In certain pathological conditions, or in those cases associated with a contracted pelvis, for instance, the performance of a cesarean section was indicated, but not for the placenta prævia; it was indicated for the accompanying condition. To-day Dr. Marx said he was less radical than he was years ago; he was now less active and more conservative in the treatment of those cases.

Dr. Joseph B. Cooke said that the matter of diagnosis was one of the easiest things, and that he had frequently made such a diagnosis over the telephone. The mere fact that there was a bright arterial hemorrhage, without pain or apparent cause, was enough to make the diagnosis one of low placenta prævia. He believed that this affection was more frequent than generally supposed, and many so-called miscarriages were in truth cases of placenta prævia. The individual maternal prognosis was good, but for the fetus was bad; the fetus was usually a premature one. Frequently there was a malposition, or a malpresentation, because the placenta was low in the pelvis and the child could not assume its proper normal position. As to safeguarding the fetus the mother's life should be considered before that of the fetus. He believed that placenta prævia was as much an ectopic pregnancy as was a tubal pregnancy, and the duty was to ignore the fetus and deliver the mother. After delivery he invariably packed the uterus because of the possible bleeding from the lower uterine sinuses.

Dr. Rau closed the discussion. He said he was opposed to the cesarean section, through either the abdomen or the vagina. He had had no experience with the Bossi dilator to any extent. For many years he had used the method of manual dilatation and rapid extraction of the child, but only lately had he become afraid of that method; such a method subjected the mother to greater risk, the risk of a severe tear. As to bright, red blood in the diagnosis of placenta prævia, this occurred also in cases of premature detachment of the placenta, and this was not a placenta prævia.

Dr. Cooke replied that what he said was "bright arterial blood, without pain or apparent cause."

Dr. Edgar said he intended to say that the Bossi dilator had a place in the treatment of these cases.

Pathological Society of Philadelphia.

At a stated meeting held April 10, Dr. B. A. Thomas exhibited two specimens of gangrene of the foot, one of which was secondary to thrombosis of the popliteal artery and the other to proliferative endarteritis. The first specimen was obtained by amputation from a man in whom the operation of Matas for the relief of a femoral aneurysm was performed. The second specimen was obtained following surgical removal for the relief of the results of vascular occlusion due to senile endarteritis. Recovery ensued in both instances. Dr. Joseph McFarland presented a specimen of multiple echinococcus cyst of the gluteus maximus muscle. The cyst was obtained in the dissecting room from the body of a colored woman between thirty and forty years old, concerning whom the only thing that could be learned was that she was a native born American. Many daughter-cysts were present but hooklets could not be found. Dr. Alfred Gordon presented a specimen of tuberculoma of the spinal cord. The patient had been a colored individual who had presented paralysis of three extremities, with paresis of the fourth, and abolition of the reflexes, but for the last few weeks of life entirely free from pain. After death a tumor was discovered arising from the seventh cervical vertebra and invading the dura and pia and the cord. In addition to the direct involvement of the cord there was the usual ascending and descending degeneration. Histological examination disclosed the structure of a tuberculoma. Dr. Aller G. Ellis presented a communication entitled "Accessory Pancreas." He referred to the relative rarity of this condition and he reported two cases under his personal observation. In one of these the supernumerary structure was situated in the hilus of the spleen and in the other within the walls of the stomach. The latter pancreas was undergoing adenocarcinomatous transformation. Dr. Leo Loeb read a communication entitled "Further Observations on the Endemic Occurrence of Cancer, and on the Inoculability of Tumors." He presented a judicial analysis of the reports that have been made as to the etiology and inoculability of malignant growths, and he cited observations of his own made during a period of eight years or more. He pointed out that certain animals exhibit a definite susceptibility to certain forms of new growth, both spontaneously and by inoculation, and he showed how some degree of immunity and some therapeutic effect could be brought about by inoculation and by other means. He thought that there must be something in the character of the growth and something inherent in the subject that determined the question of inoculability He had no final opinion as to the fundamental etiological factor in malignant diseases. For him the entire subject must be studied from the purely biological standpoint, and any practical results from such a study must be awaited with patience. Dr. John B. Deaver said that, as a surgeon, he took all precautions against inoculation and infection in operating on cases of malignant disease. Dr. Allen J. Smith contended that it was not necessary to look for extraneous parasites in a study of the etiology of malignant disease, but that this may be found to reside in the cells of the neoplasm itself. Dr. Ernest Laplace discussed the part played by the *Micrococcus ncoformans* in the etiology of carcinoma and the utility of a serum obtained from cultures of that microorganism. In his own experience he had obtained only negative results from the employment of the serum. Dr. Jos. McFarland pointed out that the question of the inoculability of carcinoma has already been discussed for many years. He spoke of various observations on this subject and said that his own studies had led him to believe that transplantation from one person or animal to a healthy person or animal is not common and that the existence of a new growth rather predisposes to the readiness of reinoculation, accidental or experimental.

Philadelphia County Medical Society.

At a stated meeting held April 10, Dr. Chas. W. Burr presented a communication entitled "Paranoia: Its Varieties and Medicolegal Importance." He pointed out the difficulties in the way of a satisfactory classification of the different forms of insanity and showed the great diversity of opinion as to the exact limitations of the disorder designated paranoia. He contended that insanity results from forces operating without the body of the affected individual or arising from inherent conditions, and especially hereditary influences. The paranoiac is the descendant of an abnormal ancestor. His striking feature is his pronounced egotism. He considers himself different from and superior to his fellows, and he is likely to be boastful and vainglorious. He is, moreover, extremely suspicious. He is deficient in moral sense and is likely to be a sexual pervert. His promises and his hopes fail of realization and his career is always one of unsuccess. He may appear to possess good reasoning power, but his premises often are false. At times the disorder is so little marked as to escape detection at a single observation, but more protracted and more frequent scrutiny will disclose the earmarks of the disease. Dr. Robert H. Chase read a paper entitled "Insanity: A Defense in Homicide." In order to obviate the conflict of expert testimony so frequently observed in trials for murder, Dr. Chase suggested the appointment of a State Board or committee to pass upon the qualifications and fitness of would-be experts in insanity. Dr. Chas. K. Mills contended that under prevailing conditions it is doubtful if any deviation from the present method of presenting expert evidence would be an actual improvement. Dr. Francis X. Dercum emphasized the distinction between paranoia and paranoid states. The discussion was further participated in by Drs. John B. Chapin and Alfred Gordon, who spoke of the problems involved in the classification of insanity from the forensic standpoint.

Medical Jurisprudence Society of Philadelphia.

At a stated meeting held April 12, Dr. Arnold Lorand of Carlsbad, by invitation, presented a communication entitled "The Pathogeny of Crime." He considers crime a manifestation of disease, and will power and facility of reasoning the two most important means for its prevention in the individual case. These forces become impaired in connection with disorders in the function of the ductless glands. He dwelt on the mental symptoms attendant on myxedema and exophthalmic goiter, disorders dependent on diseases of the thyroid gland. He contended that criminal judges should be assisted by sworn experts in diseases of the nervous system, employed neither by the defense nor by the prosecuting attorney, but by the government. Religious fervor reaching to the height of superstition is one of the causes of crime. Christian Science is such a superstition, leading to manslaughter by negligence. A great curse is the idleness of the children of the rich. Criminals should be treated as if diseased mentally, and they should be placed at hard work, preferably in the open air.

The Treatment of Acute Suppurative Conditions by Bier's Method.—Kaefer praises Bier's congestion method very highly, and states that he has found it of value in a great variety of inflammatory conditions. One application of the principle of hyperemia to which he attaches great value is in the treatment of operation wounds. At the first signs of infection, such as redness or pain, the hyperemia is induced, by bandaging if an extremity is involved, or by suction apparatus if the wound is on the trunk, instead of following the customary plan of removing the stitches. The latter procedure usually can be avoided entirely in this way and the threatened infection be staved off so that healing by first intention is secured. The plan has been found especially useful in dealing with amputations of fingers on the necessarily very dirty hands of factory operatives.—*Zentralblatt für Chirurgie.*

Congenital Malformations and Transposition of the Viscera.—Garrod and Langmead have recently had this case under their care. The patient was a girl nine months old. She was brought to the hospital suffering from severe constipation. Her general condition was poor. On the day following birth she was operated on for imperforate anus. The child had the appearance of an idiot of the Mongolian type. Physical examination showed that the heart was on the right and the liver on the left side. This was confirmed by the *x*-ray. Autopsy showed that the heart was not only displaced, but that it was also deformed. There was persistence of Botallo's foramen, the interventricular septum was incomplete, and the arterial channel was permeable. The superior lobe of the right lung was absent. Garrod has often remarked the coincidence of the transposition of viscera with malformations, and a special conformation of the head relating to the Mongolian type.—*La Presse Médicale.*

Uterine Inversion.—Pinard reports the case of a multipara who was delivered with forceps. Uterine inversion followed, which was reduced by the hand of the accoucheur. The fourth day, as the patient was at stool, the inversion occurred again. At this time a Champetier de Ribes bag was applied and the uterus was replaced. Pinard insists upon the rarity of spontaneous uterine inversion. This condition is most often due to violent tractions on the cord. Nevertheless there are other causes. A case was observed by Queirel in which the placenta was inserted on the fundus of the uterus. At other times this catastrophe occurs from uterine inertia, which is sometimes primary and sometimes secondary. In recent cases reposition may generally be obtained by the hand of the physician. In cases not amenable to this treatment the Champetier de Ribes bag is a wonderful instrument.—*Le Bulletin Médical.*

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Einführung in die Gerichtliche Medizin für Praktische Kriminalisten. Vier Vorträge von Dr. Hugo Marx. 8vo, 129 pages, illustrated, paper. Berlin, 1907, Verlag von August Hirschwald.

A Compend on Bacteriology. By Robert L. Pitfield, M.D. 12mo, 232 pages, illustrated, muslin. P. Blakiston's Son & Co., Philadelphia.

Essentials of Obstetrics. By Charles Jewett, A.M., M.D., Sc.D. Third edition, revised and enlarged, 8vo, 413 pages, illustrated, muslin. Lea Brothers & Co., New York.

A Pocket Formulary. By E. Quin Thornton, M.D. Eighth edition, revised, 16mo, 287 pages, flexible leather Lea Brothers & Co., New York.

Medical Diagnosis, A Manual for Students and Practitioners. By Charles Lyman Greene, M.D. 12mo, 683 pages, illustrated. P. Blakiston's Son & Co., Philadelphia. Price, $3.50 Flexible leather.

A Study of the Human Blood-Vessels. By Arthur V. Meigs, M.D., 8vo, 136 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

Diseases of the Lungs. By Robert H. Babcock, A.M., M.D. First edition, 8vo, 809 pages, illustrated, muslin. D. Appleton & Co. Price, $6.

Transactions of the American Gynecological Society, Vol. 31. 1906. 8vo, 451 pages, illustrated, muslin. Wm. J. Dornan, Philadelphia.

A Textbook of Ophthalmic Operations. By Harold Grimsdale, M.B., F.R.C.S., and Elmore Brewerton, F.R.C.S. 8vo, 349 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $4.50, net.

Polypus of the Nose. By Eugene S. Yonge, M.D. 12mo, 174 pages, illustrated, muslin. Sherratt & Houghes, London.

A Textbook of the Practice of Medicine. By Hobart Amory Hare, M.D., B.Sc. 8vo, 1132 pages, illustrated, muslin. Lea Brothers & Co., New York.

Tumors Innocent and Malignant. By J. Bland-Sutton, F.R.C.S. 8vo, 675 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $5.00.

The Johns Hopkins Hospital Reports, Vol. XIII. 4to, 612 pages, illustrated, paper. The Johns Hopkins Press, Baltimore.

The Johns Hopkins Hospital Reports, Vol. XIV. 4to, 629 pages, illustrated, paper. The Johns Hopkins Press, Baltimore.

Blood-Serum Therapy. By Walter Jowett, F.R.C.V.S., D.V.H. 12mo, 204 pages, illustrated, muslin. W. T. Keener & Co., Chicago. Price, $1.75, net.

Alcohol, the Sanction for Its Use. By Dr. J. Starke. Translated from the German. 8vo, 317 pages, muslin. G. P. Putnam's Sons, New York.

The Medical and Surgical Uses of Electricity. By A.D. Rockwell, A.M., M.D. 8vo, 676 pages, illustrated, muslin. E. B. Treat & Co., New York.

Encomium Artis Medicæ. By Desiderius Erasmus. 4to, 325 pages, muslin.

Anatomical Terminology. By Lewellys F. Barker, M.D. 8vo, 103 pages, muslin. P. Blakiston's Son & Co.

Paraffin in Surgery. By William H. Luckett, B.S., M.D., and Frank I. Horn, M.D. 12mo, 118 pages, illustrated, muslin. Surgery Publishing Co., New York.

Makers of Modern Medicine. By James J. Walsh, M.D., Ph.D., LL.D. 8vo, 362 pages, muslin. Fordham University Press, New York.

Maladies de la Nutrition. Par H. Richardière et J. A. Sicard. 8vo, 377 pages, paper. J. B. Baillière et Fils, Paris.

Klinik Psychische und Nervöse Krankheiten. Herausgegeben von Robert Sommer. 8vo, 448 pages, paper. Verlag von Carl Marhold. Halle, a. S.

Catholic Churchmen in Science. By James J. Walsh, M.D., Ph.D., LL.D. 12mo, 221 pages, muslin. American Ecclesiastical Review; The Dolphin Press.

Régimes Pathologiques et Régime Parfait. By Dr. F. Cayla. Vigot Frères, Paris. Price 2 francs. 12mo, 189 pages, paper.

Auscultation and Percussion. By Samuel Gee, M.D. Fifth Edition. 16mo, 325 pages, muslin. Smith, Elder & Co., London.

This Labyrinthine Life. By George Alexander Fischer. 12mo, 382 pages, illustrated, muslin. B. W. Dodge & Co., New York.

New Instruments.

A NEW GAS-ETHER INHALER.

By HENRY DAWSON FURNISS, M.D.,

NEW YORK,

INSTRUCTOR IN GYNECOLOGY, NEW YORK POST GRADUATE SCHOOL AND HOSPITAL.

THE instrument consists of three portions: neck piece, to which the rubber bag for the nitrous oxide is attached; the ether chamber, and the face piece.

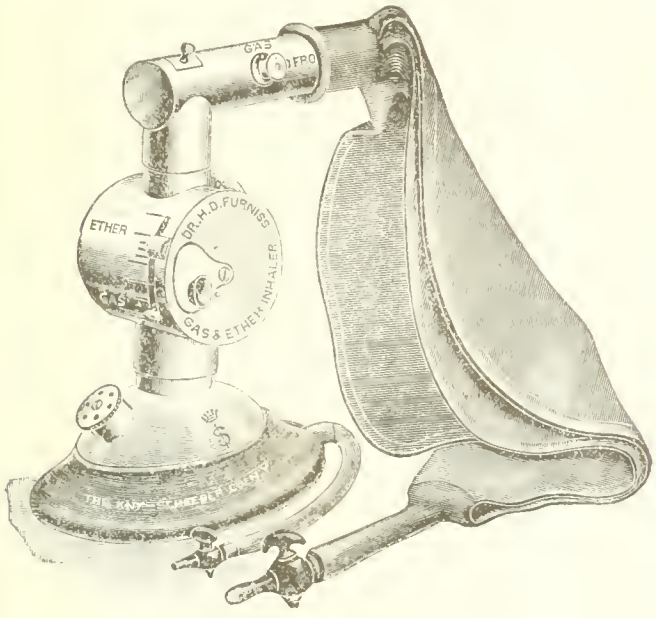

FIG. 1.

The neck piece is so constructed that when the slot on the top is open the passage to the gas bag is closed by a window shutter. Distal to this is a valve on a seat like the damper to a stove. This valve opens on inspiration, closes on expiration, and is out of play when the valve seat is thrown into the long

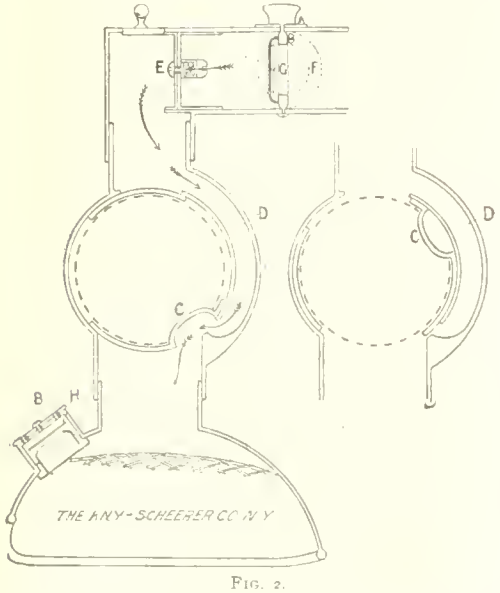

FIG. 2.

axis of the tube by turning the pointer to "to and fro." When the valve is not working air passes freely in either direction.

The ether chamber consists of two portions, the one fitting within the other, and revolving through about 60°. They are locked together by means of a pin that passes under a collar into the slot cut in the outer portion of the inhaler. For this fastening arrangement I am indebted to Mr. Sorensen of the Kny-Sheerer Company. Reference to the outline cut will show the construction better than any words. The figure to the left shows the instrument in the position for gas inhalation; that to the right when it is set for ether. It is clearly seen how the gas is conducted around the side of the inhaler by means of the tube "D." "C" is a metal cap soldered over an opening cut in the inner revolving portion of the ether chamber. The dotted line represents a wire cage, which is so constructed that it is separated from the wall of the inhaler one-eighth inch to allow of the free passage of air around it. This cage is to be packed with gauze or sponge. The cap on the side of the inhaler is for the opening and closing of the hole through which ether is to be poured on the gauze.

The face piece has a valve that opens on expiration, closes on inspiration, and which is out of commission when the fenestrated cap covering it is closed. When this valve and the one on the neck piece are both in play the patient receives undiluted gas; when both are thrown out the patient breathes to and fro into the rubber bag. Across the middle of the face piece is placed a wire screen, the use of which is given below.

The connections between the different portions of the inhaler are made by slip joints, which is easier to manipulate, less liable to injury, and just as efficient as screw joints. The neck piece is so constructed that it can be joined directly to the face piece when it is desired to administer nitrous oxide alone, all the necessary valves being contained in these two portions.

It was due to the inability to keep some robust individuals under the influence of ether with one of the popular gas-ether inhalers that this inhaler was devised. The defect to be overcome was the inadequate capacity of the ether chamber. Realizing that this would have to be overcome by ridding the inhaler of any tubes passing through it, the idea of having the gas passage on the outside was hit upon. This advantage made possible another, a very large opening into the bottom of the ether chamber, which

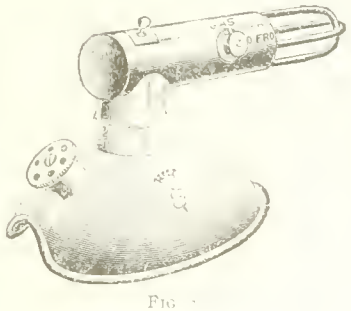

FIG. [illegible]

in this inhaler has an area three times as great as that of some of the most popular models now offered the profession. These improvements have been made without complicating, but rather simplifying the instrument.

The space above the wire screen in the face piece can be packed with gauze or sponge when it is desired to use this as auxiliary ether space, or when the drop method of administration is desired. This part of the instrument also makes a very desirable chloroform mask.

303 WEST END AVENUE.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending April 20 and 27, 1907:

	Week of April 20		Week of April 27	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	401	210	407	227
Diphtheria	331	45	339	39
Measles	411	8	477	17
Scarlet Fever	478	27	534	26
Smallpox	2	—	1	1
Varicella	64	—	96	—
Typhoid Fever	100	13	100	18
Whooping Cough	66	11	60	11
Cerebrospinal Meningitis	15	20	20	17
Malarial Fever	..	..	..	..
Totals	1868	320	2034	350

Phlebosclerosis.—Agostino Carducci has studied the occurrence of sclerosis of the veins and the clinical symptoms arising from the condition in eighteen cases, of which he gives us the histories. These changes in the veins are manifested by diminution in the caliber of the vein and absence of any coagulations in the vessels. There is a proliferation of the intima without any tendency to regressive alterations. It is more frequent in the subjects of arteriosclerosis, tuberculosis, malignant tumors, and malarial cachexia. There is no definite knowledge of the pathogenesis of this condition. It has no particular symptomatic syndromes, the functional results being inconstant. It may be diagnosed when it attacks the superficial veins, but not in the deep veins. It must be diagnosticated from spasm of the veins and from thrombosis. Prognosis is good, and treatment is unknown.—*Il Policlinico.*

Significance of Hypothermia with Slow Pulse in the Puerperium.—C. Merletti has studied the pulse curve in about a thousand cases in the puerperium and has observed that whenever there is an infective process of the genitals, no matter what the location or the severity of the process, the pulse rate rises in proportion to the rise of temperature. On the other hand there are cases in which with a rise of temperature there is no increase of pulse rate, or it is even lower than normal; in none of these cases is there any sign of genital affection, and the fever goes down without any treatment for the genitals. There is also no alteration in quality, such as dichrotism, in these cases, as is found in ordinary febrile affections. Such fevers are due to gastrointestinal troubles, intercurrent diseases, anomalies of lactation, or of the lochia, nervous conditions, etc. The practical deduction from these facts is that in cases in which with the rise of fever the pulse remains normal we should abstain from treatment of the genitals.—*La Riforma Medica.*

The Prevention of Puerperal Mastitis.—Döderlein states that a solution of india rubber in benzine, to which 1 per cent. of formalin is added, can be used as a local application to prevent the formation of minute fissures about the nipples of nursing women. The entire nipple is painted with this solution and as soon as the benzine evaporates a little sterile talcum powder is sprinkled over the area treated. In this way a delicate membrane is formed which occludes the lacteal ducts, but the first time the infant nurses the act of suction perforates the thin layer of rubber over the mouth of each duct. The nipple remains protected against all infection or abrasion, however, and in the 200 cases in which Döderlein has employed the method he has found it an extremely valuable prophylactic against mastitis. The applications are repeated every two or three days and by this means it is stated that the discomfort of nursing due to tender nipples is very greatly alleviated.—*Centralblatt für Gynäkologie.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 26, 1907:

		CASES.	DEATHS.
SMALLPOX—UNITED STATES.			
California, Los Angeles	Mar. 31–Apr 13	1	..
District of Columbia, Washington	Apr. 13–20	1	..
Florida, Duval County, Jacksonville	Apr. 6–13	1	1
Hillsboro County—Tampa and Port Tampa	Apr. 6–20	14	..
Polk County	Apr. 6–20	8	—
Santa Rosa County	Apr. 6–20	16	..
Illinois: Chicago	Apr. 13–20	1	..
Galesburg	Apr. 6–20	3	..
Indiana: Elkhart	Apr. 6–20	6	..
Indianapolis	Apr. 14–21	5	..
La Fayette	Apr. 8–15	1	..
South Bend	Apr. 6–20	6	..
Iowa, Davenport	Apr. 8–15	1	..
Kentucky, Louisville	Apr. 11–18	5	..
Louisiana, New Orleans	Apr. 6–20	15	2
		4 cases imported	
Shreveport	Apr. 6–13	1	..
Massachusetts, Chelsea	Apr. 6–20	3	..
Lawrence	Apr. 7–20	25	..
Michigan, Detroit	Apr. 13–20	3	..
Saginaw	Apr. 6–20	2	..
Minnesota, Stillwater	Mar. 1–31	1	..
Winona	Apr. 6–20	4	..
Missouri, St. Joseph	Apr. 6–20	17	..
St. Louis	Apr. 13–20	3	..
New York, New York	Apr. 6–20	3	1
North Carolina, Greensboro	Apr. 6–20	7	..
Ohio, Toledo	Mar. 26–Apr. 20	5	..
South Carolina, Charleston	Mar. 1–31	1	..
Texas, Corpus Christi	Apr. 13	2	..
Houston	Mar. 30–Apr. 13	18	..
Laredo	Apr. 13	1	
		Imported from Mexico.	
Utah, Ogden	Mar. 1–31	3	.
Washington, Spokane	Apr. 6–13	12	..
Wisconsin, La Crosse	Apr. 6–13	1	..
Milwaukee	Mar. 30–Apr. 20	21	..
SMALLPOX—FOREIGN.			
Brazil, Bahia	Mar. 9–23	6	..
Para	Mar. 16–31	7	2
Pernambuco	Feb. 15–28	..	55
Rio de Janeiro	Mar. 10–31	5	1
Canada, Sherbrooke	Apr. 13–20	7	..
Italy, General	Mar. 28–Apr. 4	0	..
Naples	Mar. 23–Apr. 13	18	..
Turin	Mar. 16–31	4	..
Luxemburg	Mar. 9–30	3	..
Madeira, Funchal	Mar 10–Apr. 7	10	3
Mexico, Aguas Calientes	Mar 31 Apr. 13	..	18
Mexico City	Mar. 9–23	..	24
Monterey	Apr 7–14	..	1
Nogales	Mar 2–Apr 6	0	..
Portugal, Lisbon	Mar. 29–Apr 6	10	..
Russia, Moscow	Mar. 16–30	10	2
Odessa	Mar. 16–30	02	0
Riga	Mar. 23–30	5	..
St. Petersburg	Mar 16 23	3	.
Warsaw	Mar. 16–23	..	1
Siberia, Vladivostok	Feb. 22–28	1	1
Spain, Barcelona	Mar 16–Apr. 10	..	9
Cadiz	Mar 1–31	..	6
Cartagena	Mar. 23–30	..	1
Seville	Mar 1–31	..	5
Valencia	Mar. 23–Apr. 7	7	..
Syria, Damascus	Mar 9–30	..	Present
Switzerland, Geneva	Mar 23–30	2	.
YELLOW FEVER.			
Brazil, Manao	Mar 16–23	.	1
Para	Mar. 16–31	7	5
Rio de Janeiro	Mar 17–24	3	4
Ecuador, Guayaquil	Mar. 16–30	..	15
West Indies, Trinidad—Port of Spain	Mar 23–Apr 6	7	2
CHOLERA			
India, Bombay	Mar. 19–26	.	5
Calcutta	Mar 2–16	.	50
Madras	Mar 19–23	.	12
Rangoon	Mar 9–16	.	25
PLAGUE—INSULAR.			
Hawaii, Honolulu	Apr. 19–23	1	1
PLAGUE—FOREIGN.			
Japan, Formosa	Mar 16–23	98	77
Peru, Callao	Mar 6	1	..
Chepen	Mar. 13	.	1
Chiclayo	Mar 7–13	8	6
Eten	Mar 7–13	10	5
Mollendo	Mar 13	1	
		Imported from Arequipa	
Paita	Mar 7–13	20	13
San Pedro	Mar 13	1	1
Trujillo	Mar 7–13	18	11
Straits Settlements	Mar 2	1	1
Russia, Crete	Mar 26	1	
		At Laboratory of Imperial Institute	
Brazil, Bahia	Mar 16–23	5	4
Para	Feb 4–28	.	3
Rio de Janeiro	Mar 10 31	2	2
Chile, Antofagasta	Mar. 16–23	42	23
Santiago	Feb 23–Mar 2	.	24
China, Hongkong	Mar 23–	1	3
Egypt, Alexandria	Mar 23–27	5	6
Gizeh Province	Mar 23–25	3	2
Kenneh Province	Mar 26–27	27	20
India, General	Mar 19 1	55,000	40,440
Bombay	Mar 19	655	152
Calcutta	Mar 9–16	..	153
Rangoon	Mar 2–1	..	72

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Original Articles.

A DISTURBANCE OF VISION DUE TO EXAGGERATION OF BINOCULAR ASSOCIATION.*

By PIERRE JANET, M.D.,

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In replying to the courteous invitation of the New York Neurological Society, by which I feel myself greatly honored, I wish to present briefly a rather curious case which, in my opinion, shows well the value of the study of pathological psychology for the understanding and oftentimes for the treatment of nervous diseases.† First allow me to review the previous history of the patient, without which it would not be possible to understand the particular condition which we wish to study.

The patient, Mme. Z., now sixty-five years of age, has always been a very neurasthenic person. She has shown during her entire life a series of manifestations of a characteristically hysterical nature. Overwhelmed at the age of fourteen years by a violent shock following the accidental death of her sister, she lost the use of her limbs and remained paralyzed for a year. Since that time she has had, successively or simultaneously, hysterical attacks with catalepsy, disturbances of speech, contraction of the neck, spasms of the right arm, various pains affecting the fingers, the nape of the neck, the tongue, and varied paralyses. The last well-defined occurrences of this kind took place at about the age of fifty years. At that time she still had some slight crises of uncontrollable logorrhea, a last remnant of the old somnambulism. Since that time the strictly hysterical conditions have yielded to phenomena of another nature of which we need not here discuss the pathogeny.

Three years ago, after some pronounced symptoms, she was attacked by disseminated retinal hemorrhages in both eyes. At the close of a few weeks the hemorrhage, which had not been very severe on that side, had entirely disappeared in the right eye, leaving, as Dr. Valude had reported, only some points of insignificant sclerosis in the outer part of the retina incapable of disturbing vision. On the other hand, the ophthalmologist noticed from the outset very abundant punctiform hemorrhages in the left eye, with marked localization near the macula. As a result the left eye recovered only a little visual power, but for a short time, and that was definitely effaced by the progress of sclerosis, so much so that at the end of two months the vision was completely lost in the left eye and almost wholly restored in the right eye. At that time, however, disturbances began which progressed continuously. The patient complained of experiencing in her left eye phenomena of light—"streaks of fire, flashes, Roman candles," and these flashes were accompanied by violent pains which gradually developed to an incredible degree. This intolerable condition lasted more than a year. Finally, in a consultation between Dr. Valude and Dr. Dufour of Lousanne it was decided that the absolutely useless left eye ought to be sacrificed, since it had not the slightest vision and was only a cause of optic nerve irritation. Enucleation, which the patient did not wish at any cost, did not seem indispensable, and it was decided to limit our interference to section of the optic nerve, an operation which had already been advised by von Graefe in like circumstances. The operation was performed by Dr. Valude and was successful. When the dressings were removed it was seen that the left eye had admirably preserved its vitality and presented an absolutely normal appearance. However, the movements of the eye were seriously disturbed. To reach the optic nerve one is obliged to section the external rectus, which is sutured after the operation. Perhaps the point of the scissors slightly cut the internal rectus. After the operation the eye rotated strongly to the outer angle. Later it took on more motion and could turn strongly to the right side, when the patient made an effort, but even then the movements were not entirely recovered, and there remained a certain amount of divergent strabismus. The right eye had suffered not at all, either from the operation or its results. When the dressings were removed, it was found to be normal, and a cursory examination showed that vision was preserved. The visual acuity was good, the field of vision was very wide, almost normal, scarcely affected by the original hemorrhage, and colors were well distinguished. It was thought that the patient could henceforth use that eye and, being no longer troubled by pains in the left eye, would see correctly.

But now commenced the peculiar disturbance of vision which developed following the operation and which has given rise to my psychological researches. Mme. Z. saw correctly at the first glance, but she complained that she was unable to profit by that vision, for she said that there was before her a strange cloud, always in motion, which hid from her the appearance of the objects looked at. In vain she made every effort to fix an object, to follow a line. The vision was disturbed by this moving cloud and it was impossible for her to see anything with accuracy. Not only was reading impossible, but the vision of objects in the room was so difficult that the patient had trouble in moving about. Moreover, this moving cloud soon caused vertigo and nausea, so much so that to recover her normal condition it was necessary to close the eyes. In a word, the patient was without doubt delivered from pains which had tortured her previously, but she complained of not having made any progress, for

*Read before the New York Neurological Society, November 28, 1906.

†The more complete details of the eye conditions of this patient were published in the *Annales d'Oculistique*, July, 1903. I have here dwelt only upon the interesting psychological manifestations.

she considered herself still more incapable of helping herself with her right eye. These peculiar troubles continued to increase for almost a year without any apparent progress, and the despondency of this very neurasthenic patient still further aggravated her previous troubles.

Evidently phenomena of this kind deserve to be called nervous disorders of vision and, given the symptoms which the patient had presented up to the age of fifty, one would naturally speak of a hysterical condition. However, it is scarcely possible to admit ordinary hysterical amblyopia, when one recalls that the vision of the right eye seemed normal at the time of the medical examination, that its acuity is almost normal, that there is no disturbance of color vision, that the visual field is almost as extended as that of a normal eye. Any existing hysterical disorder must be of a very peculiar nature. In order to discover the trouble it is necessary to analyze the circumstances in which vision is especially found to be altered, and the conditions if such exist, in which the trouble diminishes and in which vision is found to be momentarily restored. Vision is preserved only at the first instant under one condition; it is that the patient limits herself to describing the object placed before her, whatever it may be, without herself choosing it. As soon as she attempts to fix any thing or to accommodate, the trouble begins. Mme. Z. is able to read letters or words off-hand in a book opened before her, but everything is immediately invaded by the brilliant cloud. If she seeks to follow a line with her eyes, the more she attempts to look with fixedness and attention the more the visual troubles appear to increase. The circumstances which directly or by association evoke the superior functions of vision are the occasion of the visual trouble.

On the other hand, it is necessary to note a rather large number of somewhat peculiar conditions under which the trouble, if not suppressed, is at least reduced. It was observed that at the instant of opening the eyes vague vision, without choice and without fixation effort, was fairly well preserved. In the morning at the moment of waking, while she was still half asleep, Mme. Z. noticed that she saw well. A peculiar lighting, a chance position, sometimes brings on a sudden change and for some moments she is astonished to see as heretofore, but that vision is short, and the patient does not know what to do to recover it. She seems to have observed that it is necessary to receive the light upon the left side of the face in such a manner that the shadow of her nose, which is rather large, completely protects her right eye. She desires a very tight bandage over her left eye or she tries to press it strongly with her fingers, but as soon as the eye escapes and begins to move again a mass of brilliant clouds comes to obscure the visual field. These few observations seemed to show that the right eye was capable of seeing whenever it was disassociated from the left eye and that the intervention of the left eye, although blind, was the origin of the trouble. To verify this I tried some experiments in which the monocular vision of the right eye was brought out still more clearly. Here is a peculiar one. Mme. Z. was formerly accustomed to shoot with a pistol and could aim with the right eye. I have asked her in holding the pistol, or even a simple piece of wood, to repeat the effort of aiming. To her great surprise she then saw perfectly well the object aimed at, without clouds, etc. In another experiment I made her look through a field glass and she then saw objects at a distance perfectly. I took a microscope to her and she was able to use it and describe preparations. At last I made her look simply through tubes of paper and by this very simple means she became able to read without difficulty. Hence we have a collection of facts which seem to show us that the trouble in sight disappears when we suppress the association of the two eyes.

How are the preceding phenomena to be interpreted? Here is an explanation that I offer you for at least a working hypothesis. It is said that there exist in man two different visions, binocular vision with convergence, and monocular vision in which the two eyes functionate independently of each other, but one is not disposed to speak ordinarily of these two visions when there exists but a single eye. At first one thinks that a one-eyed person can have only monocular vision. This is probably true for those who lose an eye in early infancy, but those who become blind as adults preserve the cerebral mechanism of binocular vision in all conditions in which that vision is used ordinarily, and they use only the cerebral mechanism of monocular vision in unusual conditions. Ordinarily the preservation of that association of the two eyes scarcely annoys them, perhaps because the subject troubles himself little about the incorrect movements of the blind eye. It is likely that Mme. Z., in spite of the section of her left optic nerve, every time that she is wide awake, or that she pays attention, or that she attempts to follow a line, still tries to use binocular vision. She still attempts to make the two eyes converge, to accommodate both in the same manner, and she does not limit herself in doing the work of fixation and accommodation to the right eye only.

What is the cause of this obstinacy, as it were, in using binocular vision in spite of the loss of one eye? One might say at first that it is one of the fixed ideas, or, if one chooses, one of those fixed psychological states such as we see continually in the hysterical. It may be added that Mme. Z., old and neurasthenic, is less able than another to change her visual habits and to adapt herself to a new situation which demands a new action of her visual perception. This is the one important reason why the patient perseveres in her search after binocular vision. Binocular vision, however, has become entirely impossible, for not only is the left eye blind, but the movements themselves cannot be accomplished as in the right eye. It has been seen that the operation has left a divergent strabismus. It has also been noted that the pupil, which has only slight mobility, does not give correctly the consensual reflex. I am disposed to believe that it is this consciousness, more or less confused by the defect of convergence and by the defect of accommodation in the left eye, which, in a subject who is very neurasthenic and obstinate in seeking to obtain an impossible binocular vision, causes trouble in the fixation and accommodation of the right eye.

Some therapeutic experiments bring an interesting verification of these hypotheses regarding the pathogeny. I have attempted to submit the patient to a reeducation of vision by taking as a point of departure, as one must do in these reeducations, that part of the function still remaining. Here the vision remaining is the monocular vision under certain definite conditions. I wished to force the patient to develop monocular vision by placing her under conditions which called for it. I had made for Mme. Z. a pair of peculiar glasses. Upon the frame of the right eye was set a little metallic tube as large as the orbit and five centimeters in depth. Through

this tube the patient easily obtained distinct vision. When she became a little more used to it, I had the depth of the tube reduced, as it became unnecessary in the outer part, until it had a depth of not more than a centimeter and a half in the inner part. Thus reduced, the tube did not necessarily give monocular vision, but it acted as a stimulus to cause favorable conditions to obtain that vision which was already used in the tube of a field glass or in aiming with a pistol. This very short tube, or rather this little rim, placed in the inner angle of the eye suffices not only for the patient to guide herself, but for her to read easily for more than an hour.

I hope that, little by little, in spite of the age of the patient and in spite of her neurasthenic past, the habit of monocular vision may develop and that it may even take place in the absence of all special apparatus.

The treatment of nervous troubles, as has been said, very often consists in reeducation, but it is necessary to determine accurately through psychological analysis the factor on which this reeducation must work.

APPENDICITIS IN INFANTS AND CHILDREN.*

WITH A STATISTICAL ABSTRACT OF ONE HUNDRED CASES OPERATED ON IN FIVE YEARS.

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THE difficulties in making a diagnosis of appendicitis in occasional adult patients, even with all scientific aids added to a well-developed history, are greatly multiplied in infants and children who are unable to express themselves, or in whom there is, from a sense of fear, a distinct reticence in giving up such factors as are great aids in reaching a satisfactory conclusion. In addition, in infants the many gastrointestinal complaints which they may be subject to cloud our reasoning, and thereby delay our diagnosis.

Of the factors in obscuring our diagnostic acumen are the teachings that meats, etc., substances of diet that the young and adult take, are causative factors in the production of this disease, and therefore that a milk baby cannot have it, and that an appendicitis is an exception in certain tribes of the Orient who subsist on vegetation only. Such teachings, especially when given by observers of note, must of necessity place appendicitis in infants (milk-fed subjects) as a rarity rather than as an occasional disease. Nevertheless, this disease does exist in the milk and prepared food infants frequently enough to give us cause for alarm when seeing infants or children under three years of age suffering from abdominal pains, distention, etc.

Kermisson, in the *Revue de Chirurgie*, p. 2042, 1906, abstracted in the *Journal of the American Medical Association*, December 22, 1906, reports a case in an infant eleven months old, and says he has found reports of twenty-five under two years, nine of which were under twelve months. Of this number (twenty-six) nineteen died and seven recovered, appendectomy having been done in nineteen cases, with a mortality of twelve, seven deaths being in those under twelve months. Conclusions cannot be drawn from this great mortality, as he further states that only those operated upon at once recovered.

I have recently operated on a patient twenty-one months old, in the second day of the disease, finding a concretion one and a half inches long by about three-fourths of an inch wide in a perforated and gangrenous appendix, with general suppurative peritonitis, with a fatal termination in twenty-six hours.

One thing is apparent, and that is the rapidity of intoxication due to the spreading of the peritoneal invasion in these cases, and the marked lessening of resistance in the patients under three years.

Kermisson further states that no meat had been given in any one of the cases cited in his paper, and thereby disposes to a great degree of the argument that meat is a factor in the production of the disease; but he also states that in twelve of the cases in which the particulars were known all except three were bottle babies. It would appear to me that at present we cannot lay stress upon any particular food articles as being productive of this disease, and whether food preservatives, such as boric acid, etc., have any weight in the consideration of the cause, I am not prepared to say.

To diminish the great mortality in appendicitis occurring in infants under three years, we must first recognize that this disease is an established fact, even in breast-fed babies. Then we must improve our diagnostic sense by summarizing such symptoms in infants as have been shown to be accompanied by appendicitis, and finally to insist upon early operation as we do in adults.

It is a recognized fact by all that this disease may be insidious in onset, and is rapid in its progress as to spreading, loss of resistance, and toxemia, The time of descent of the cecum with its appendix must be recognized, for frequently the appendix is not in the abnormal site before the third or fourth year, but lies high up, even under the costal arch, and therefore in these cases palpation with elicitation of pain in the usual site is negative, while palpation in the loin or high up may be productive of the sign we are seeking. The same may be said of the localization with mass formation. I have frequently, in the series abstracted in this paper, been compelled to remove the appendix almost at the lower border of the costal arch.

In arriving at a diagnosis we must consider gastroenteritis, invagination, and obstruction due to hernia, etc.

In gastroenteritis the symptoms dovetail so thoroughly in many instances with those of appendicitis as to prevent a diagnosis being made before one of the evidences, such as peritonitis, obstruction, or mass, be present. In invagination one might mistake the tumor, which is usually symmetrical when present, for an inflammatory mass, but the bloody and mucous stools, the peculiar rhythmic cramp-like pains, and a degree of shock not seen in appendicitis, all should be sufficient to make a correct diagnosis possible. In hernias the external lesion is usually present, whereas, if it be a concealed hernia, it would be a rare diagnostician who could make a proper differentiation.

Symptoms.—Pain, with nausea and vomiting either preceding or accompanying, and with following temperature elevation, increased pulse, difference in the sense of resistance in the abdominal wall, distention in varying degree, crying of the

*Read before the East Side Physicians' Association, New York City, February 15, 1907; and the Bridgeport Medical Association, Bridgeport, Conn., March 5, 1907.

child upon palpating the abdomen, fitful crying and sleep. The patients, in the majority of instances, ward off the examining hand. In an article on appendicitis in children (*New York Medical Journal*, March, 1904) I called attention to the above sign, stating that to me it is almost pathognomonic, as follows: "Almost invariably the little patients unconsciously place their hands in the region of the appendix to ward off manipulation in this region."

Rectal palpation rarely is an aid in these cases. The blood count does not help when the question is between a low placed pneumonia and an appendicitis. The same applies to the painful area in low placed pneumonia or diaphragmatic pleurisy. In these latter diseases the movements of the costal arch in respiration must be carefully watched.

I have found pinworms as foreign bodies in ten patients, and in almost every instance the symptoms were the same, and peculiar to the general cases. There is pain, with temperature of 104° to 105° for twenty-four hours, then a subsidence in temperature to 99.5° to 100.5°, and the pulse not accelerated; pain diminished but present; and then in the following day or two an elevation of temperature of a degree or two, without marked increase of pain.

The removed appendix is seen to be slightly congested, and the interior distinctly so, with perhaps one or more macroscopic spots of epithelial destruction, and pinworms varying in number.

Intercurrent Conditions.—I have operated twice in cases of floating kidney, one on a girl eleven years old, and recently on a boy fifteen years old, and have seen a third, a girl of fourteen, with a marked history of mild attacks, having a kidney almost in the iliac fossa.

There was right inguinal hernia in three cases, the operation for both conditions done through the hernial incision. One of these cases was in a male child, one year old, who had a strangulated hernia, and an inflamed appendix.

Pertussis occurred in one case, that of a boy of seven years; gangrenous appendix; no drain; recovery.

One patient with an acute fulminating attack was exposed to the sun, and a long, tedious train journey, on a hot day in August, 1905, and suffered for three days all the symptoms of an insolation.

Strangulated ovarian cyst occurred in a girl thirteen years old, with recovery.

Pyosalpingitis, gonorrheal in origin, was noted in one child five and a half years old, from whom I removed the appendix thoroughly incorporated with a pelvic abscess and right pyosalpinx; also with a distinct tuboovarian abscess of the left side. The patient recovered.

No consideration in this series is made as to the time of seeing cases, as all but five were acute.

The postoperative complications, barring those of intestinal paresis from spreading peritonitis, were in this series of cases pneumonia and subphrenic abscess. Two of the deaths recorded were due to pneumonia, and one to subphrenic abscess and exhaustion at the end of the sixth week. This latter was the case in which marked evidences of insolation were present for three days. One other case of subphrenic pleurisy recovered.

The total number of cases operated upon by me from January, 1902, was 100, of which 41 had foreign bodies, including 10 with pinworms. Twenty-four had perforated, with or without general gangrene; 50 were gangrenous, with or without perforation and pus. Thirty out of 78 seen since January, 1904, had pus, either localized or general, and with or without gangrene and perforation, while only 5 were interval cases. Thirty-seven cases were drained.

Of the 60 cases operated upon in which the sex is recorded in my file, 35 were male and 25 were female.

Ninety-five cases operated upon in which I have the actual age recorded occurred in the following numbers, as to years: One at 1 year, one at 21 months, one at 2 years, three at 3 years, seven at 5 years, four at 6 years, ten at 7 years, seven at 8 years, eight at 9 years, nine at 10 years, fourteen at 11 years, eleven at 12 years, five at 13 years, four at 14 years, and ten at 15 years.

There were seven deaths in this series, a percentage of seven. The following were the causes of death: Pneumonia, two; subphrenic abscess, exhaustion, etc., one; general suppurative peritonitis, four. The children dying of general suppurative peritonitis were aged 10 years, 21 months and 11½ years respectively; the age of the fourth was not given. All were in a most profound septic condition; one, 10 years old, dying within ten hours; the infant in twenty-six hours, and the 11 1-2 year child, a boy ill seven days, who was cyanotic, etc., with an abdomen distended, as the two others had been, dying in about eight hours. Records in the fourth case are not definite.

While these four cases presented conditions of profound gravity, I cannot but feel that if any chance was to be given them it was that of operating rapidly, with little or no great contusion of the abdominal contents being made, and then followed by the Murphy-Fowler-Ochsner treatment.

Although these steps were carefully carried out, and the result no better than if no operative procedure had been instituted, a sufficient number of cases similar in nature but not in intensity having recovered, would still cause me to operate in like instances.

Treatment.—I am a firm believer that once an appendicitis has occurred the patient is always in danger until the organ is removed, and I advise that the patient seen in all such cases be submitted to operation.

The usual preliminary steps that can be taken in emergency operations should be followed. The incision is either that of McBurney or Kammerer, or that which splits the rectus, no matter whether we feel that drainage is likely to be necessary or not. The McBurney is done when no mass can be felt, or when the mass is well confined to the iliac fossæ, while the Kammerer or split rectus is used in those cases where the mass lies more to the median line, or down in the region of the bladder.

The incision when first made is never over two inches long, and is more than likely to be that of Morris, one to one and a half inches in length. As a rule I use no gauze protecting dam, but make a very careful finger dissection, recognizing readily when the rupture of the abscess, if an included one, takes place. The discharge is rapidly taken up by small sponges in forceps; the opening into the abscess cavity is gradually enlarged as the leakage diminishes, the cavity finally wiped out with dry gauze sponges, the appendix sought for and adhesions broken up. When the appendix is freed, the usual procedure of ligating the mesoappendix is followed, then the appendix is excised and the stump treated in any of the following ways: The Dawbarn inversion method; clamping with a strong

forceps, on the principle of the angiotribe, near the base, cutting off above the forceps, then inverting the crushed stump; and the usual method, that of ligating the appendix at its base and cauterizing with carbolic acid the exposed and everted mucous membrane. Should the appendix be bound down to other viscera so closely that freeing it would impair the integrity of any of the surrounding organs, I strip it out by splitting the serous and muscular coats at some point where possible, and then shell or strip out the mucous canal, ligating at the usual site. This stripping method is exceptionally easy and can always be used in difficult adhesion cases. Recently I stripped out an appendix seven inches long that was followed to the cecum, which had not descended, but lay in the site usually occupied by the hepatic flexure of the colon.

When free pus of the serous variety is present in the general cavity, I sponge the pelvic cavity as dry as possible and close the wound with or without drain. When gangrene of the appendix and suspicious mesoappendix are present, drainage for from twenty-four hours to the time required as shown by the discharge, or by temperature chart, and pulse, is done.

I do not wash the entire cavity, having given up this method six or eight years ago, nor do I wipe out the circumscribed abscess cavities with peroxide and salt solution, as formerly, but I sponge these abscess cavities dry, and may wash out with a salt solution sponge, and then drain or not, as experience has taught me. The drainage is usually a small cigarette drain, made with rubber tissue, including a piece of sterile gauze loosely rolled. This passes down into the pelvis, or simply into the iliac fossa, as indicated by the extent of the abscess, etc., calling for drain.

The incision is closed to the emergence of the drain, when such is used, by layers, and a provisional suture is placed quite close to the drain, so that, in case the conditions arise that will warrant the removal of the drain in a day or two, this suture can be tied, thereby allowing a primary closure to take place.

After Treatment.—A movement of the bowels is desirable in the first twenty-four hours following the operation, and it is my custom to give from five to ten one-tenth of a grain calomel triturates as soon as the vomiting ceases. When free seropus has been present and the abdominal wound is sewed up, from half an ounce to one ounce of magnesium sulphate and from eight to twelve ounces of water at 100° F. is given by the rectum before the patient is out of the influence of his anesthetic. Nothing is given by mouth in the more serious cases until the bowels have moved or flatus has been expelled per rectum. After the bowels have moved, the patient is allowed milk and broth diet for twenty-four hours; then if the temperature is under 101° F., light diet is given, and regular diet as soon as the chart shows a temperature of 99.5° F. or under. A standing order for cathartics, if necessary to produce a movement daily, is given.

When drainage has been used change the abdominal dressings as often as discharge and odor demand, but do not remove or change the drain until the third to fifth day, and even as late as the seventh day.

The patient is allowed to roll whenever he likes, and is allowed to sit up in bed, if not drained, on the third or fourth day; out of bed on the fourth or fifth day. If drained, he is placed in a semi-sitting position as soon as he is out of ether, and sits up in bed the earliest possible moment that the wound will allow.

60 West Fifty-second Street.

PITYRIASIS ROSEA: WITH A REPORT OF SEVERAL CASES OF THIS DISEASE MISTAKEN FOR CUTANEOUS SYPHILIS.

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CLINICAL ASSISTANT AND ASSISTANT RADIO-THERAPEUTIST, NEW YORK SKIN AND CANCER HOSPITAL.

It is a common occurrence in the public clinics for diseases of the skin, as well as in private practice, to see patients with nonsyphilitic cutaneous lesions, who give fairly reliable histories of having undergone antisyphilitic treatment for the skin diseases with which they are afflicted. Some of these patients may complain of mild, but unpleasant symptoms which accompany the ingestion of mercury in moderate doses; others, however, often present telltale evidences of this treatment—carried up to the point of severe mercurial poisoning—prescribed by the physician, under the impression that he is dealing with a case of syphilis.

Not a few practitioners, many of whom may be acute diagnosticians and skilful therapeutists in other branches of the medical art, will frequently, when confronted with an unfamiliar lesion of the skin, follow the time-honored dictum which has been laid down by their predecessors: "When in doubt, call it syphilis, and treat it as such." It must be admitted that the dermatologist of large experience sometimes resorts to this measure to determine the nature of the disease he is called upon to cure, and to establish the existence—or nonexistence—of active syphilitic disease in his patient. This procedure, however, is gradually falling into disuse, thanks to the development of more exact diagnostic methods, and to the more frequent employment of biopsies as a routine measure, in cases where doubts exist regarding the nature of the disease in question. Very often, patients are seen, in whom only a tentative diagnosis of syphilis can be made, relying upon the so-called "therapeutic test"—a very uncertain weapon—to settle any doubts as to the presence or absence of specific disease. That this unscientific method of diagnosis may be superseded, in the near future, by a simple procedure involving the microscopical search for the spirochete of syphilis, is conceded by the majority of writers on the subject to-day; whether it will be possible to dispose of the doubtful eruptions of *late* syphilis in the same facile manner, time alone will show.

Pityriasis rosea, or pityriasis maculata and circinata, is not one of the common diseases of the skin (according to Crocker, it occurs once in about 250 cases)—but its lesions present one of the many pictures which the unpractised eye is prone to confound with dermatoses of totally different origin and character. When it is considered that diseases of as common occurrence as acne, eczema, psoriasis, and even scabies, are only too frequently submitted to antisyphilitic treatment by the general practitioner, it is small wonder that pityriasis rosea, with its acute onset, wide distribution, and occasional adenitis is consigned to a similar fate in the hands of the well-meaning but hasty diagnostician.

During the past year, I obtained the histories of

several dispensary patients affected with pityriasis rosea, all of whom had been treated for supposed syphilis before coming to the New York Skin and Cancer Hospital. These patients had been assured by their respective doctors that the eruption on their skins was a manifestation of syphilitic disease, and that a long course of treatment was necessary to "purify the blood," and to prevent further serious complications.

Case I.—John F., age thirty-three, single; cabman. General health good, ruddy complexion. The patient shows no evidence of syphilitic disease, but he admits having had a preputial chancre at the age of twenty-two, followed shortly after by an eruption of "spots and pimples" on the chest and abdomen. He states that his physician made the diagnosis of syphilis, and that he took medicines at irregular intervals, during a period of two years. Since the subsidence of the roseola, he has been free of any eruptions on the skin, and apparently has had no symptoms referable to syphilitic disease. During the last two weeks he has been troubled with alternate attacks of diarrhea, followed by constipation, but has felt well in other respects, and has taken no medicines whatever to relieve the intestinal trouble. Ten days ago, after a night of excessive indulgence in beer, he noticed two reddish spots, each about as large as a dime, situated near the right nipple, his attention being directed to the lesions by a slight itching sensation. Eight days later he discovered that his chest, upper arms, and back were, more or less, diffusely covered with an eruption resembling the initial lesions on the chest, and that the itching, though not severe, had become uncomfortable. He now decided to consult his doctor. Suspicion as to the nature of the treatment he had been receiving was at once aroused by the foul breath of the patient. Examination of the mouth revealed a decayed condition of most of his teeth, and a well-marked mercurial stomatitis.

The skin presented an eruption bearing some resemblance to a maculopapular syphilide. The macules ranged in diameter from a pea to a ten-cent piece, were pale-red in color, and partly disappeared under pressure with the finger. Those on the shoulder-blades and below the clavicle were beginning to clear up in the center, leaving a slightly scaly ring at the periphery; two or three of the lesions, viewed with the light striking them at an angle, presented a parallel wrinkling of the center of the discs—an appearance considered to be of diagnostic importance. The papular elements were limited to the axillæ, and the skin covering the shoulder-joints; they ranged in size from a large pin-head to a lentil, were rose-red in color, the majority being tipped with a tiny scale. Infiltration was present, but the characteristic "solidity" of the papules of syphilis was not felt. Adenitis could not be demonstrated. The patient complained of moderate itching, which always increased toward evening. He was given a sedative and antipruritic lotion for the skin, which, together with the internal administration of rhubarb and soda mixture, resulted in a complete disappearance of the eruption within two weeks of his application at the hospital.

Case II.—Elizabeth D., age twenty-seven, married; seamstress. Has had two children, both living and healthy; no miscarriages; menstrual history is normal. She has been troubled, almost since puberty, with frequent attacks of rosacea and acne. Her general health had been good until about a month ago, when she began to complain of obstinate constipation, accompanied by frequent attacks of headache and anorexia. The patient states that with the exception of a few pimples on the back and chest, she was not aware of ever before having had an eruption on her body. She noticed the beginning of the present eruption twenty days ago, while taking a tub-bath. She describes the lesion as a spot about as large as a twenty-five-cent piece, pinkish in color, situated on her breast, a few inches below the right clavicle. At the time of the appearance of the eruption, her two children were being treated for ringworm of the scalp, to which she was making daily applications of the tincture of iodine. Under the impression that she had somehow contracted ringworm from her children, she applied the iodine to this "initial lesion" (the primitive patch of Brocq), resulting in an exfoliation and partial disappearance of the patch; a few days later, fresh patches made their appearance on her neck, chest, and buttocks. She consulted a physician, who made the diagnosis of syphilis, and who advised a course of antisyphilitic treatment, not only for her, but for her indignant husband as well.

On examination, the skin presented a multitude of circular and irregular oval lesions, typical of pityriasis maculata and circinata. The skin of the neck, trunk, and buttocks was involved, while a few pale, scattered blotches were apparent on the thighs and upper arms. The eruption bore some resemblance to the circinate, scaling syphilide; the face, head, and hands, however, were free—an important point in differentiating pityriasis rosea and syphilis. As in Case I, so in this patient, a closer inspection of the patches above the clavicle revealed a wrinkling of the superficial layers of the skin, light-brown in color, surrounding which was a narrow, ill-defined, pale-red zone, slightly raised above the normal skin, and bearing fine scales. Below the clavicle, and near the nipple, were seen a number of pale-red rings—some of them complete, others broken—enclosing fawn-colored patches of skin, most of which were beginning to desquamate in fine scales. On the back, between the shoulder-blades, the individual circinate lesions had given place to a diffuse, pink and yellowish, blotchy appearance, with here and there a large, greasy scale adhering to the skin, assuming a resemblance to seborrhoic eczema. The scattered lesions on the arms, buttocks, and thighs were chiefly of the small, macular variety, none of them exceeding a dime in size, and showing no tendency to spread peripherally, or to clear up in the center. The eruption apparently caused no itching or discomfort throughout its entire course. A slight enlargement of the poststernomastoid glands could be made out by palpation. As a matter of precaution, and in view of the presence of ringworm in the patient's home, a microscopical examination of the scrapings from some of the lesions was made, but no spores or mycelia of the trichophyton were discovered.

Case III.—Fanny S., age twenty-five; single, *puella publica*. General health good. Nothing in the patient's history seems to have any etiological bearing upon the present skin disease. She noticed the eruption about four weeks ago. It appeared simultaneously upon the buttocks and in the axillæ, and, in her own words, consisted of "a few reddish pimples and spots, which itched slightly." A few days later, the patient observed that the rash had spread, from the buttocks upward toward the small

of the back, and from the axillæ up toward the shoulders, the back of the neck, and behind the ears. Subsequently a few spots appeared upon the abdomen, chest, and upper arms; the face, hands, and feet remaining free. Her physician pronounced the case to be syphilis.

The skin now shows the eruption in the process of involution. The lesions on the back, and those on the chest and abdomen have partially faded, leaving on their sites light-yellowish, finely-scaling patches of skin. Upon the buttocks, and on the skinfolds of the axillæ, are a number of papules, flat, pink in color, varying in size from a large pinhead to a split pea. The infiltration is rather more pronounced than is usually the case in those eruptions of pityriasis rosea, in which papular elements obtain. On the back of the neck, behind the ears, and on the arms are a few scattered, indistinct, yellowish spots, surrounded by pale-red rings, enclosing small discs of glistening skin.

There is a trifling enlargement of the glands in the groins. She complained of a slight degree of itching. The serum from three papules was stained with Goldhorn's preparation and examined for the spirochete of syphilis, with a negative result. While palpating the papular lesions upon the buttocks, a half-dozen rounded, marble-sized, infiltrated nodules were plainly felt in various parts of the gluteus muscles: the woman had been receiving intramuscular injections of an insoluble preparation for her supposed syphilitic disease. In this case, the patient's calling, in all probability, prejudiced the doctor in his diagnosis.

Case IV.—(Seen in private practice.) Jos. L., age twenty-nine, single; engineer. General health has always been good. He gives an indefinite history of having had sores on the prepuce four years ago, which probably were either chancroidal or herpetic in character. The patient, who is strong and well-nourished, had been perfectly well until two weeks ago, when he was suddenly attacked by what is known as "the bends" (caisson disease), upon emerging from one of the subaqueous tunnels under course of construction around the city. He recovered from this attack within a few hours, and has felt well since. About three days after his attack, his attention was directed, by one of his fellow-workers, to a few reddish spots on the lower part of the abdomen, near the right groin.

As these spots caused no discomfort, little attention was paid to them at the time. Within a week, the eruption had spread over the entire right side of the abdomen, the upper part of the thigh on the same side, and over the left side of the chest and shoulder. At this stage the itching became marked, especially when his work caused the skin to perspire and become overheated. The patient now consulted his physician, who made the diagnosis of syphilis.

Examination revealed the fact that blue ointment, some of which was evident on the skin, had been employed—whether prescribed for the local or for the constitutional effect, or, perhaps, for both, is a matter of conjecture. About four drachms of the ointment had been rubbed into the skin during the week, and already the patient evidenced symptoms of mercurial poisoning—abdominal pains, fetid breath, and diarrhea. The inunctions had altered the natural appearance of the eruption to some extent, causing a mild inflammation of the lesions themselves, and of the unaffected skin surrounding them; still, the diagnosis of pityriasis rosea was made without difficulty. The lesions consisted mainly of well-defined, slightly raised, rose-red rings, varying in size from the diameter of a lentil to that of a dime, bearing fine scales on a narrow peripheral zone, and enclosing light-yellowish patches of skin in the center. The eruption was limited to two distinct groups—one on the right side of the abdomen, the other on the left side of the chest—a distribution which remained unaltered throughout the course of the disease, and which, in itself, would strongly favor the diagnosis of a non-syphilitic rash. Adenitis was absent, and no disturbance of the general health was apparent, aside from the symptoms due to mercurial poisoning, already mentioned.

Crocker, in the "Twentieth Century Practice," speaking of pityriasis rosea, says: "If it were not for the errors in diagnosis to which it may give rise, it would not be an important disease." The histories of these cases bear evidence to the fact that considerable harm may result from errors made in the diagnosis and treatment of a cutaneous disease, bearing a superficial resemblance to, but having nothing more in common, with syphilitic eruptions. To avoid mistaking, and, what is worse, mistreating—this self-limited and comparatively trifling skin disease for an eruption due to syphilitic infection, certain points in the diagnosis of cutaneous diseases in general, should be borne in mind. The consideration of these points should be based, not upon the patient's indefinite and, frequently, distorted history, but upon the picture which presents itself as the patient stands stripped for examination.

As in other diseases, so also here, the symptoms are subjective and objective. Of the former, itching is the only symptom requiring consideration; of the cases described above, two complained of itching; but that this was not very marked was shown by the fact that in neither did the skin present evidences of scratchmarks—proof that the fingernails were not resorted to for the alleviation of this symptom; and although itching of the affected parts in pityriasis rosea is sometimes severe in degree, the majority of patients do not even mention it. This symptom is of some importance, in a negative sense, in differentiating the eruptions of pityriasis rosea and syphilis; for the absence of itching may prejudice the diagnostician in favor of syphilitic disease, in which itching of the skin is but seldom complained of.

In considering the objective symptoms, accuracy of observation comes into play, and should be directed toward certain diagnostic elements—namely, the distribution, configuration, color, and consistency of the eruption under consideration.

Pityriasis rosea appears most frequently upon the abdomen and chest, the buttocks, and the shoulders. In the more extensive cases, the rash involves the arms, almost to the wrists, and, on the lower limbs, it may extend nearly to the ankles. Very often, the rash appears on the neck, up to the line of the jaw and behind the ears, but it is seldom seen to attack the hands and feet, the face and scalp. Here, the distribution of the lesions becomes an important factor in differential diagnosis; for, in the early syphilitic rashes, it is most common to find that the eruption involves the very regions, which, in pityriasis rosea, remain free; that is, the palms of the hands, soles of the feet, face, and scalp. In some cases, the lesions on the trunk arrange themselves

in lines, parallel to the slant of the ribs, or radiating from the sulcus of the axilla toward the chest and shoulders—a form of grouping not observed in syphilitic eruptions. Cases are seen, in which the eruption is limited to one or two separate groups of lesions, situated on opposite sides, or on the same side of the body, the intervening area of skin remaining perfectly free; and a few cases have been reported, in which the lesions were limited, throughout the course of the disease, to one small area on the trunk, or on one extremity. It may be said, however, that in the majority of cases of pityriasis rosea, in which the eruption has been of two or three weeks' duration, the lesions appear most frequently on the abdomen and chest, the upper arms and back, the buttocks and the thighs.

A well-marked case of pityriasis rosea displays individual lesions of various types. Thus the skin may present a simultaneous eruption of macules, papules, rings, and circular or oval scaly patches, varying in size, color, outline, amount of desquamation, and depth of infiltration. The macular and papular elements are most frequently observed at the advancing border of an active eruption—in the axilla, on the upper arms, the thighs, and sides of the abdomen; the older lesions, consisting of irregular, oval, and circular patches, having complete and incomplete peripheral bands, with here and there two or three rings coalescing to form irregular gyrate lesions, are seen usually on the chest, abdomen, and back. Interspersed among these large and small patches are seen irregularly outlined, brownish-yellow, slightly scaling plaques, gradually fading into the normal skin. Usually on the upper part of the chest and back, closer scrutiny will reveal, within some of the smaller and more recent ringed patches, a peculiar, buff-colored folding or crumpling of the skin into parallel folds—the so-called "cigarette-paper crinkling"—mentioned above as being considered of importance in the diagnosis of pityriasis rosea. As the eruption approaches the stage of resolution, the various lesions become more confluent, gradually less-defined, assuming a light-brown color, and, desquamating in small scales, finally give place to a slightly discolored, but otherwise normal skin.

In color, the lesions vary, as they do in configuration. As the name implies, the usual shade is a rose-red or pink; but cases frequently are seen in which the color cannot be depended upon as an aid to diagnosis; for the papules and macules often assume the darker shade of syphilitic eruptions, whereas the color of the ringed lesions can hardly be said to differ very materially, in the majority of cases, from that of a seborrhoic eczema, or a superficial psoriasis. The buff or fawn-colored appearance in the center of the ringed patches is often an aid to the diagnosis.

Infiltration of the skin in pityriasis rosea is always slight or altogether absent, most of the lesions being on the same level with, or only slightly raised above the niveau; but in several cases of the disease in which the papular elements predominated, I have noted a marked infiltration of the papules, especially when located in or near the axilla. The amount of desquamation also varies; the scales from the arms, thighs, and buttocks are usually fine and branny, while those from the back and chest may be large, thick, discolored, and greasy, like those of seborrhoic eczema.

Mention has already been made, in the description of the efflorescence in Cases I and II, of the initial patch, or group of patches, which appears between one and two weeks before the eruption proper becomes generalized. This lesion, or group, described by Brocq as the "plaque primitive," is usually situated on the enterior aspect of the trunk, the favorite site being the abdomen, although it may occur also on the back or the thigh. In patients who present themselves with a well-developed rash of several weeks' standing, it is wellnigh impossible to pick out this or that blotch on the skin with the idea of naming it the initial plaque; in recent eruptions, however, the patch may sometimes be identified by its larger size, darker color, and more abundant scaling. From observation of dispensary patients, I would say that in the majority of cases of pityriasis rosea, the initial patch of Brocq is more often conspicuous by its absence than by its presence. It is, therefore, of little value as an aid to the diagnosis, and the interest which attaches to it lies chiefly in its relation to the etiology, as yet undetermined, of this dermatosis.

From the foregoing description it will appear that in pityriasis rosea we have an exanthem exhibiting lesions often multiform in character, varying in different eruptions and in different regions of the same eruption, but presenting, in its entirety, a picture to be distinguished and differentiated from the other dermatoses to which it bears a resemblance.

In considering the question of differential diagnosis between this disease and the early syphilides, it would be natural to ask: Can not the diagnosis of syphilis be made and confirmed by the various concomitant symptoms to which syphilitic infections give rise? In the majority of cases the answer to this query would be in the affirmative. But there still remains a large number of patients, who, aside from their cutaneous lesions, present not a single additional symptom, or group of symptoms, that would tend to point the way to the correct diagnosis of their maladies.

The scaly and circinate syphilides, for which the rash of pityriasis rosea is most likely to be mistaken, commonly appear at the end of the first, or beginning of the second, year of syphilis. By this time, the usual concomitant symptoms have disappeared, the chancre itself often healing, without leaving a trace behind.

It is in this class of cases, chiefly, that errors in diagnosis most often occur. It is well to bear in mind, therefore, that the nature of a cutaneous disease should be primarily determined, whenever possible, from the lesions seen on the skin, and on the skin alone; in many instances, such a diagnosis would necessarily be a tentative one, to be subsequently strengthened by any corroborative evidence which may be present (for example, on the mucous membranes), and which may tend to confirm the original impression made upon the mind of the diagnostician. This mode of procedure, if persisted in, will soon enable the practitioner to gain a clearer and more correct conception of the various cutaneous diseases which he may encounter in his practice.

53 East Fifty-eighth Street.

Hemorrhage Following Spinal Anesthesia.—Kopfstein reports a case of severe parenchymatous secondary hemorrhage occurring after an amputation performed under spinal anesthesia, and attributes it to vasomotor paresis.—*Centralblatt f. Chirurgie.*

INSUFFICIENCY OF THE GASTRIC MUSCLE.*

By M. GROSS, M.D.,

NEW YORK.

Although I am fully aware of the fact that the various gastric functions are intimately related to each other, I have made muscular insufficiency a separate subject for discussion. The reason for doing so is not only that this function is to a certain extent actually independent of the other gastric functions, but also because the consideration of this subject affords an opportunity to demonstrate the advanced position attained at the present day in arriving at an early diagnosis of these important affections, for the diagnostic aim consists not so much in the recognition of a well pronounced condition of the tissue, as rather in unraveling the evolutionary process underlying the affections, and in the recognition of the transition stage from mere fatigation to positive disturbance of the tissues.

Axioms.—1. Insufficiency of the stomach, also called atony, is a relatively frequent affection.

2. The difference between atony and ectasy, or mechanical insufficiency, is one of principle and not of degree. Simple atony is a part manifestation of local or general disturbance of nutrition; of disturbances of the circulation; of disturbances which lead to general muscular and nervous debility.

3. Only by reason of mechanical impediments and also of complicating more permanent hypersecretion and its consequences, a simple insufficiency may be changed into a mechanical one.

4. In a simple atony the stomach contents are always evacuated, even though tardily; an ectatic stomach never evacuates its contents except with artificial aid, even though food is withheld for a lengthened time.

5. Insufficiency of the gastric muscle is rarely of a serious nature, and then only if a mechanical impediment is superadded at the pylorus. As a rule this affection is favorable to a spontaneous cure and complete recovery; it readily yields to a removal of the causative factor.

Physiology.—The stomach is really never entirely at rest; even when completely empty gentle movements run along its walls in rather long intervals and irregular, short waves. During this relative standstill the secretory apparatus also seems to display some slight activity, most certainly the mucous glands, which cover the entire lining of the stomach with a thin protective mucous layer in order to protect the mucous membrane from extreme degrees of temperature of ingesta and from slight acid effects.

It is only after food has been introduced into the stomach that the peristaltic movements of the muscle display their vigor, the extent of which is distinctly dependent upon the quantity and quality of the ingested material.

We may look upon the normal mode of gastric movements as in the semblance of a wave, one limb of which is steeply ascending and one slowly descending, followed by a prolonged moment of rest, corresponding to the height of digestion; and of a second, somewhat lower wave movement of an undulating character and a jerking, descending limb. The first part of the movement occurs in the fundus, while the second corresponds to the action of the pyloric part, the ingested food being once more vigorously thrown back, and again and again brought into contact with the walls of the stomach in order better to effect its mechanical distribution and thorough saturation with chyme. The conclusion of this motor mechanism is formed by the opening and closing of the pyloric ring, which is only now effected with some degree of regularity.

Aside from this kind of motion there is another one of a totally different nature. In consequence of the contraction of the powerful longitudinal fibrinous bundle radiating from the cardia toward the pylorus, an approximation takes place of these two ostia which serves to elevate the fundus. By this motion the contents of the stomach are brought up to a level with the pyloric orifice, thus facilitating the removal of the chyme.

As a matter of course, in cases of considerable distention of the stomach and weakening of the muscular wall this lifting factor is absent, exacerbating the pathological condition.

Ability of motion is even shown by the exsected stomach to a certain extent, which is probably due to the action of ganglia diffusely distributed in the stomach wall, while the actually regulating element of the uniform movements is probably principally furnished by the vagosplanchnic plexus by way of reflex action.

Pathology.—If the normal activity of the muscle is interfered with by whatever obstacle there may be, the following eventualities may take place: The muscle overcomes the obstacle (1) completely, (2) imperfectly, or (3) not at all.

One of the factors which may enable the gastric muscle to overcome the impediment completely is the reserve force stored up in it. In referring to reserve force it should be remembered that experience has established the fact that the organs of the body are only in exceptional cases called upon to perform the maximum task of which they are capable.

The normal stomach of a healthy man, which for a lengthened period has done but little work on little food, is capable, if required, of suddenly disposing of a large meal. This latent power of an organ, which may at any time be drawn upon, is called the reserve force, and it is owing to this reserve force that the gastric muscle is enabled to accommodate itself, as we are wont to term it, to increased demands. This is still a physiological process.

On the other hand, an obstacle may be completely overcome by compensation, in which case we have to deal with a balancing of pathological disturbances, deficient capacity being compensated by hypertrophy, which, however, may still be susceptible to subinvolution.

Each regulation of function presupposes a certain degree of integrity of the regulating system and its reintegration by the general process of nutrition. The task of regulation therefore has its limits in all directions, even though it is capable of considerable performances; above all, it is dependent upon the circulation of the blood and body fluids, and on innervation.

If, therefore, the gastric muscle is impeded in its compensatory activity, as, for instance, by repeated demands on the part of accommodation, by local inflammations and their sequelæ in hepatic affections, and by intestinal atony or constitutional affections, there will be no complete balance—no sufficient compensation; the condition termed atony develops, which is at first associated with relaxa-

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tion of the tissue and later followed by a distinct enlargement of the organ, clinically shown by the retardation of the digestive process.

In the extreme cases of pyloric stenosis we have to deal with pronounced eccentric hypertrophy with immutable anatomical changes—the "dog stomach," as the surgeons call it. Total inability to overcome an obstacle is a temporary occurrence, an exceptional condition in consequence of acute indigestion, spastic contractions in the pyloric region, etc.

I stated before that the first sign of insufficient compensation is diminished capacity of the gastric muscle, *i.e.* a retardation in the process of digestion. Here we are confronted with a new difficulty, namely, that of determining the normal period of digestion. It certainly happens frequently enough that the stomach is empty two hours after a test breakfast, or six hours after a test meal, but in almost an equal number of cases it may not be empty, without our being justified in describing such an occurrence as abnormal. The fact is that the process of digestion is subject to slight variations even under normal circumstances, as, for instance, in the case of middle-aged people, workmen, or large eaters, so that it will be necessary to make some slight changes in the above named time limits established by Ageron.

In the initial stages of the so-called atonic condition a *restitutio ad integrum* is of course perfectly possible; also in pronounced anatomical changes a return to approximately normal conditions is possible. A stomach of this kind is constantly somewhat enlarged and the evacuations occur at normal intervals.

Then again there are stomachs resembling a pendulous sac, a distinctly fluctuating cyst, which, remarkable as it may appear, are under normal circumstances still capable of performing their task, although there is always a delay, especially when the demand upon them is increased. To this category belongs the various forms of gastroptosis and the atony associated with hypersecretion.

Diagnosis.—The safest method for recognizing the insufficiency of the gastric muscle consists in drawing out the contents of the stomach a certain time after the ingestion of a test meal. This gives at one glance the undisputable result of the work performed by the stomach. If, according to Mathieu-Rédmond, a quantity of more than 180 to 200 c.c. is found to be present one hour after the test breakfast, it is indicative of a retarded function of the gastric muscle. Elsner establishes a comparative measure between the solid residue and the total quantity, a method by which hypersecretory simulations may be excluded. The normal solid residue does not exceed 100 c.c.

When it is impracticable to draw out the contents, other methods should be employed which will likewise enable us to establish an approximately correct diagnosis.

In suitable cases mere inspection is sufficient to enable us to draw certain diagnostic conclusions; there is, above all, the so-called stiffening of the stomach to which Boas has called attention, due to contractions of the muscle which are more or less visible at the fundus of the stomach and demonstrate the exertion made by the gastric muscle in order to overcome a stenosis which is either commencing at the pylorus, or is already in existence. In cases of pyloric spasm the same manifestations may also be observed, although only temporarily.

The other methods of determining the capacity of the gastric muscle are by means of the splashing sound, by percussion, and examination according to Dehio's method, all of which are easily accessible to the practitioner.

The examination of the stomach is carried out at two different periods: (1) on an empty stomach and (2) after the ingestion of a test meal. The colon having been evacuated, the empty stomach is slightly inflated in order to determine its position and to exclude thereby any possible simulation of an enlarged stomach. Following this procedure percussion should be carried out to determine the size of the organ, as the best results are being achieved after these preliminaries.

The next step is to establish by clapotement (succussion) the presence of a possible noise, to determine the size of the stomach and, above all, the elasticity of the stomach walls. This examination is concluded by the application of Dehio's procedure. One to three glasses of water drunk on an empty stomach determine the area of dullness and, consequently, also the position and size of the stomach, whereas a rapid lowering of the dullness after a further ingestion of water provides a certain indication of the dilatability of the stomach, or rather of its loss of elasticity, although this is not necessarily equivalent with decreased motor power.

An atonic muscle, however, will often render good service as a first indicator of a commencing disturbance in the performance of a muscle. On the other hand, an enlargement of the stomach is indicative of a diminution of the tonus and a reduction of the concentric pressure, because it is just the fundus which has to suffer most, the weight of the stomach contents resting upon it; besides, it is this part of the stomach which possesses the thinnest layer of muscle.

A second examination is made after the ingestion of a test meal. In this case, too, the capacity of the gastric muscle is determined by percussion in the recumbent and erect position, by the production of a splashing sound a certain time after the ingestion of the test meal.

The combination of these double examinations will enable us to arrive at definite results. In regard to the method of examination, the inflation with carbonic acid gas should, as was said above, be only slight, because excessive inflation often causes delusive results.

As to percussion, I often employ the auscultatory method, the stethoscope being placed below the xiphoid process or in the pyloric region. Very gentle percussion being simultaneously carried out, the sounds are conveyed to the ear more perfectly, every slight difference in note being distinctly perceptible. I start from the idea that every fair-sized hollow organ produces a certain timbre.

As to the splashing sound, it may be generally stated that its constant and extensive presence is the outwardly perceptible sign of a diminution of the concentric state of tension, *i.e.* of the counter-pressure exercised by the stomach wall after the ingestion of fluid. It is the time and place of its occurrence which makes the splashing sound an important diagnostic symptom. In gastroptosis the splashing sound is of no diagnostic value.

Preceding, in point of time, the splashing sound, and therefore being the very first indicator of a loss of elasticity, and occurring, as it does, at a time when there can hardly be a question yet of dilatation of the stomach, is a flabby sound, produced

only on an empty stomach, which may be explained by the relaxed walls banging together.

The value of the splashing sound as a diagnostic sign is, however, curtailed by the fact that investigations of Zweig, Calvo, and, more recently, Boas, have demonstrated that the finding of fairly large residual masses a considerable time after the ingestion of a test meal is by no means always indicative of a motor insufficiency of the gastric muscle, but is often attributable to increased secretion of gastric juice, the so-called digestive hypersecretion of gastric juice. But experience has taught that the motility is generally also diminished in these cases.

The prognosis is favorable, if the nature of the affection has been recognized early. But also in the dilating stage a restitution is frequently possible if the underlying causes can be reached. Should this not be the case, it is certainly possible to establish complete compensation and to maintain the muscle in that state. This also refers to benign pyloric stenoses, in which it is possible to maintain a relatively good capacity of the organ for decades.

It is important to recognize the affection when it manifests itself in little children by a tendency to functional dilatation associated with great liability of the function of the organ, which is clinically demonstrable without difficulty. Occasional regurgitations in early childhood should direct our attention to this condition, for there is no doubt that sometimes an affection which had been wrongly diagnosed as nervous has turned out to be purely organic.

Therapy.—A few remarks on this head will be sufficient. Insufficiencies of a light degree undergo, as we have seen, spontaneous cure if they are given the opportunity to do so. But even in advanced cases an alleviation of the manifestations can be attained by enjoining partial or, if necessary, complete rest, by finding out the cause, etc. The same applies to the compensatory disturbances of mechanical dilatation.

Irrigation or douches will be indicated in appropriate cases, and then a few sittings will nearly always suffice to achieve a satisfactory result.

Mechanical, electric, and hydropathic measures will be crowned with success in a number of cases, although often rendered superfluous by a systematic hygienic dietetic régime, where such can be carried through.

But here, as well as in many other sections of pathology, the physician will be obliged to leave a great deal to the slow but unmistakable influence of vis medicatrix naturæ; a more negative treatment —prevention of untoward influences—being likely to lead to better results than exaggerated interference.

315 Second Avenue

Abadie's Symptom in Tabes Dorsalis.—C. Negro describes Abadie's symptom as hyperalgesia of the tendo Achillis when pressure is made on the sides of the tendon at the level of the malleoli. This is present in normal persons, but according to some authors it is absent in those suffering from tabes dorsalis. The author has experimented on ten cases of tabes to see if this sign was always absent. The analgesia was found in three out of the ten patients, while Abadie found it in 80 per cent. of those he observed. It may be found only on one side. There may occur hyperalgesia instead of analgesia to pressure.—*Rivista Neuropathologica.*

VULVOVAGINITIS IN CHILDREN WITH ESPECIAL REFERENCE TO THE GONORRHEAL VARIETY AND ITS COMPLICATIONS.*

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Notwithstanding recent advances in bacteriology and microscopy, the profession is not as yet in accord as to the exact nature of vulvovaginitis in children. Some physicians still doubt the fact that most cases are due to the gonococcus of Neisser and are highly contagious, but tenaciously cling to the "scrofulous" theory of the disease and recommend tonics to combat it. As a result, innumerable cases run at random, leaving sources of contagion in public schools and baths, homes, and hospitals, with apparently no one in authority to check the further spread of the affection.

The necessity of presenting the subject in question in a clear, concise manner, and repeatedly discussing it so as to arouse the interest of the profession is, therefore, quite obvious.

Accordingly, permit me to offer a classification of the different varieties of vulvovaginitis from the etiological point of view. Thus:

(1) Catarrhal vulvovaginitis, which is generally due to (*a*) lack of cleanliness or (*b*) chemical irritation.

(2) Traumatic vulvovaginitis, which is caused by (*a*) masturbation (?), (*b*) mechanical injury, or (*c*) indecent violence.

(3) Parasitic vulvovaginitis, which is due to (*a*) oxyurides, (*b*) saprophytes, or (*c*) pathogenic bacteria, especially the gonococcus.

The first variety of vulvovaginitis is usually met in poorly nourished children of overcrowded tenement districts, who receive a thorough cleansing on very special occasions only. As a rule, these cases begin with vulvitis, the vagina becoming gradually involved by extension of the inflammation. Catarrhal vulvovaginitis is not always limited to the very poor, and the physician need not hesitate to suspect dirt even under the most elaborate apparel.

This variety of vulvovaginitis is also frequently observed in children whose genitalia are exposed to excessive wetting by irritating, decomposing secretions, and excretions—sweat, diarrheal stools, hyperacid urine—and to undue pressure and friction. In former years, when bicycle riding was a national fad, vulvovaginitis was not rarely met in assiduous bicycle riders, undoubtedly as a result of the aforesaid causes.

The consideration of the second, traumatic, variety of vulvovaginitis does not, strictly speaking, belong to the domain of medicine, except as regards the treatment. We are dealing here with faulty habits and criminal traits which deserve serious attention on the part of teachers, the clergy, and jurists. However, as it is the physician who is usually consulted first, a few points of information will prove useful to him, particularly as a warning not to be too hasty in expressing a positive opinion.

I believe that entirely too much stress is being laid by some authors upon masturbation as an etiological factor of vulvovaginitis. It is much more probable that masturbation is a result rather than a cause of it, the undoubtedly existing irritated state of the erectile tissue inducing that bad habit.

*Read before the Gynecological Section of the Eastern Medical Society.

The presence of foreign bodies in the vagina is not infrequently found to be the cause of vulvovaginitis. While some girls will introduce foreign bodies in the vagina with lascivious intent, the great majority of foreign bodies, *e.g.* safety pins, will find their way in the vaginal canal accidentally, and should always be looked for, particularly in cases of long standing.

Occasionally cases of vulvovaginitis are encountered which are the result of indecent violence. The purulent discharge is either nongonorrheal or gonorrheal, the latter only if the criminal who attempted rape had at the time been suffering from gonorrhea. It is well to remember that not every case of vulvovaginitis reported to be due to rape is really such, and unless the vaginitis is associated with actual penetration of the hymen and concomitant signs of inflammation due to violence, the physician should be very cautious in venturing a positive opinion.

Saprophytic microorganisms are responsible for a great number of cases of vaginitis. To them is attributable the vaginitis not infrequently met after acute exanthematous diseases (with or without desquamation) and in conjunction with diverse forms of cutaneous eruptions. The same cause accounts also for the vaginitis observed in strumous and debilitated children suffering from purulent discharges from the nose, ears, etc. Indeed, the number of cases of saprophytic vulvovaginitis would by far exceed all those arising from all other sources collectively were it not for the antagonistic action of the bacillus of Doederlein which normally inhabits the vagina. This vagina bacillus, which is anaërobic and may be cultivated on ordinary media, produces lactic acid during its growth, a quality to which is due the presence of lactic acid in the healthy vagina. In its presence saprophytes, as well as numerous other bacteria, such as the staphylococcus and streptococcus, are unable to develop, and within a short time perish. Gonococci, however, do not yield as promptly to the destructive effect of the vagina bacillus, hence the frequency with which gonorrheal vulvovaginitis is met, notwithstanding the resistance offered to the entrance of gonococci into the vagina by the stratified squamous epithelium lining it.

As stated before, contamination of the vagina by criminal assault is comparatively very rare. Much more frequently infection takes place by voluntary sexual act or accidentally. Little girls sleeping with their parents, elder brothers, sisters, or nurses suffering from gonorrhea, may contract the disease by coming in contact with soiled bedclothes, cotton pads, or other articles used for cleansing purposes.

Gonorrheal vulvovaginitis runs a more or less virulent course, and in hospitals and asylums, where many children are congregated in comparatively close quarters, and frequently make common use of infected bathtubs, toilets, etc., the disease is very apt to become epidemic as well as endemic. In one epidemic under my care, in an orphan asylum, comprising over one hundred cases, it required many months of very active treatment to eradicate the affection. Arrest of further spread of the gonorrhea was not effected until every patient was isolated and kept in bed for several weeks. A biweekly examination of every female inmate of the institution (including the nurses in charge) for vaginal discharge was continued for several weeks after disappearance of the last case of vaginitis.

Such procedures form the main prophylactic measures against the disease. Of course, the patients must be restricted from the common use of chambers, bedding, bathtubs, etc. In hospitals and asylums, admitting physicians should be particularly careful to exclude all children having purulent vaginal discharge, unless provisions are made for the isolation and treatment of such cases. This point is well worthy of consideration, as it would greatly aid in checking further transportation of the disease. As the majority of cases of vulvovaginitis is observed among school children, a suggestion to the health authorities is, perhaps, in order, viz., to instruct the school inspectors to pay more attention to the detection and isolation of the cases of gonorrhea in children than they do now.

As gonorrhea in adults, that of children presents a marked tendency towards grave complications. Among 148 cases under my care, the following serious complications were observed: Purulent ophthalmia, 7; local peritonitis, 4; proctitis, 3; arthritis, 4; adenitis, 12. Several cases of pyosalpinx, endocarditis, and pleuritis are on record. However, the more familiar I became with the course of the disease, and the best means of checking and eradicating it, the less numerous became the complications and sequelæ in my new cases.

After extensive experimenting I found that gonorrheal ophthalmia can best be prevented by frequent cleansing of the genitalia and hands of the patients, and by the employment of a large, tightly fitting vulvar pad. The latter should be changed for a clean one at least every three hours. The child should wear one-piece night-drawers during the night as well as day. The ophthalmia may sometimes be arrested in its incipiency—I succeeded in two cases—by instillation of silver solutions after Credé's method. In view of the unusually rapid progress of the ophthalmia, unfortunately, it is not often that the physician has the opportunity to resort to the prophylactic measures, and nothing else remains but to treat the disease actively and skilfully, and, if not already involved, to endeavor to save the other eye from the dreadful infection.

Involvement of the uterus and adnexa secondarily to gonorrheal vulvovaginitis in most instances results from injudicious use of douches by forcing the vaginal discharge upwards into the uterus, Fallopian tubes, etc. The treatment should, therefore, not be intrusted to the inexperienced.

I believe that I am entitled to the credit of having been the first to call attention (*American Medico-Surgical Bulletin*, May 30, 1896) to the occurrence of gonorrheal proctitis as a complication of vulvovaginitis. The rarity with which this complication is observed, notwithstanding the constant exposure of the anus to the gonorrheal vaginal discharge, would seem to prove the comparative immunity of the skin and mucous membrane of the anus and rectum to gonorrheal infection. Moreover, as proctitis usually does not develop until late in the course of the vaginitis, *i.e.* until the skin of the anus and the adjacent structures has become abraded and denuded by the continued irritation of the vaginal discharge, or by scratching for the relief of the not infrequently accompanying intense itching.

The diagnosis of gonorrheal proctitis is rendered positive by the presence of the gonococcus in the mucopurulent stools.

Like the former complication, arthritis, the so-called gonorrheal rheumatism, also develops late in the course of vulvovaginitis. In the majority of cases the inflammation is limited to one joint, usually that of the knee, and occasionally ends in suppuration and ankylosis.

Inguinal adenitis is quite a frequent complication. The glandular enlargement may increase up to a well-marked bubo. It sometimes suppurates as a result of an additional infection by pus microbes.

The differential diagnosis between the different varieties of vulvovaginitis can readily be made by bearing in mind the previously mentioned classification. No examination should be considered complete without a very careful microscopical scrutiny of the vaginal discharge. In doubtful cases a culture will settle the diagnosis. Furthermore, it is well to remember that several etiological factors may be operative in the production of the vaginitis in one and the same patient. Hence, the finding of pin worms, for example, in the vagina should not lead us to conclude the absence of gonococci.

The treatment of the different varieties of vulvovaginitis is fully outlined in most modern text-books of pediatrics and gynecology. It is, therefore, superfluous for me to offer suggestions in this direction. All I desire to emphasize is that recurrences of the affection after a period of latency are frequent even under the most careful method of treatment. No case of gonorrheal vulvovaginitis should, therefore, be considered cured, unless three or more thorough microscopical examinations of the vaginal discharge prove the absence of gonococci and pus.

329 East Fifty-first Street

IS AN HERPETIC ORIGIN OF PLEURISY POSSIBLE?

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It has been said by more than one pathologist of note that when a certain lesion is a symptom of a condition such lesion may alternate with any other lesion symptomatic of the same condition. The condition which we call "gouty" or "rheumatic" is said to be characterized by a distinct group of skin lesions which are described *en bloc* as "herpetic;" this same condition is said to cause inflammatory processes of the serous membranes, notably is this believed, judging by the contributions to periodicals, in respect to the pericardium and pleura.

It is quite certain that if the familiar "cold sore" is in any proper sense an "herpetic eruption," and officially it is "herpes labialis," then certain alternations can be predicated, no matter what this lesion's cause may be. Also, if like eruptions beginning as insignificant bullæ followed by a tenderness, and even persistent painfulness, out of all proportion to the initial lesion, and by the characteristic cicatricial process, are all to be classed as "herpetic," then we can safely say that some of the eruptions which occur in individuals who complain of "attacks of rheumatism," which to a small degree interfere with the free motion of certain joints, are alternatives to such attacks.

But how about such a case as the following? C. A., aged forty-two years, man, white, weight 182 pounds, height five feet ten inches, chest measure (insp.) 44¾ inches, is in the habit which is so usually called "gouty" or "rheumatic." Has frequent attacks of an illness which has been diagnosticated by various practitioners as "rheumatism," and these attacks impede the usefulness of the ankle and knee on the right leg. Less frequent and less severe have been like attacks of the right elbow, and he remembers that on a number of occasions a pain, very sharply defined in its localization, has interfered with activity. The patient locates this pain upon the right side, and he says that when he has tried to take a long breath this same pain has hurt him "like a knife," but this pain has never lasted more than two or three days, and on no occasion has he been forced "to go to bed and nurse it." As we were rather intimate friends, knowledge of these attacks was not wanting me, and I noted that the "herpetic eruption" referred to would follow the muscle soreness and accompany the pain described as within the chest, and on two occasions I had heard, or believed that I had heard, as distinctly as could be wished for any diagnostic purpose, the "friction sound" of the visceral against the parietal pleura.

The question raised had never been pressing, and yet I was often constrained to wonder what sort of condition existed within the chest, especially since, if fever was present, the body temperature was hardly above normal, and the small difference could be easily accounted for without the diagnosis of "inflammation of the pleura."

But early in February I had an opportunity to see an attack, which gave interest to the question which gives title to this note but did not answer it—satisfactorily. Missing him from our ordinary meeting-places, I asked what had put our plans awry, and learned that he was ill at home and was said to be confined to his bed. In a very short time I was at his bed-side, and fortunately the attending physician called to see his patient while I was still with him, and it was but a few minutes before the question, "Is an herpetic origin for pleurisy possible?" was interesting all three of us. From the outset the attending physician declared that the case was peculiar and its course abnormal—decidedly so for any well-behaved classic pleurisy. The physician had heard the friction sound, but was sure that he had not seen any signs of a superficial lesion. He also bade me note that his patient did not appear to find his chief distress in the stab-like pains, from which he should have suffered, but said that the constant muscular pain, "like a neuralgia," was so much more severe that he hardly perceived the other at all. For this reason his chest to the limits of the painful area, as defined by the patient himself, had been poulticed with a clay compound put on hot. In the course of the conversation, the attending physician said: "Contrary to all my previous experience, a slight irritation of the skin has appeared since the poultice was applied." This interested me as suggesting the previous "herpetic eruption," and I asked to see the same. None objecting, as I rather feared the physician would, I saw the eruption in the accustomed location, and *mutat. mutand.* in the very condition I expected.

It is worthy of note that it was already the sixth day, and the "friction sound" was still to be heard at the proper times and places (immediately under the area of eruption), when the needed precautions were taken, and the "friction sound" was still accompanied by the characteristic pain.

This fact at once suggested to me the question which I had more than once put into words in my note-book, "Is there an eruption upon the pleura identical with this superficial one?" and the mental question was answered, or seemed to be, by the facts in hand. Certainly "the pleurisy" was not at all improving, and the case had been under observation nearly, or quite an entire week, during which time the symptoms usually diagnostic of pleurisy, except the pain and the friction sound, were quite wanting, and the treatment so far as it was special to pleurisy had been quite without result, or at least without expected result. The circumstance most impressing the attending physician was the absence of any perceptible effusion, but it was equally interesting to me to note that the patient was less impressed by the respiratory pain than by the muscle-located "soreness," about which he, as usual,

complained most bitterly. It appeared to be quite in accord with the experience of previous attacks that the fear of pain should be extreme, and that the temperatures should agree in various details with the temperatures noted in previous attacks rather than with those supposedly typical of a pleuritic inflammation.

Not wishing to interfere, and having in mind that professional comity must take precedence of friendship, I left, but that same evening the discussion was renewed by a call made at my room by the attending physician, who after my departure was informed of the many attacks of "neuralgia" located on the right side, and specifically in reference to the attacks of pain accompanied by an eruption located almost, if not quite, in the same area. To my surprise I found my friend the physician very much inclined to regard this attack from my point of view, as being simply one of the frequent and almost periodically appearing bits of evidence that the condition, which was the foundation for one and all these symptom-groups, was a diathesis, rheumatic or gouty, as the evidence might impress the diagnostician. For my own part, I admitted that I was quite willing to believe that gout and rheumatism were but the best-known faces of a nutrition disorder concerning whose true meaning we still lack the most essential facts. The attending physician had sufficient confidence in my good will to ask to see my clinical notes in relation to this case, which I at once, and gladly, put at his disposal. In the course of the next few, two, or three weeks I heard that my friend had been sent to a somewhat more genial climate, and I also received a letter from the attending physician, in part as follows:

"While I cannot say that I am converted to your theory, that the outbreak in our friend's case was due to an eruption on the pleura cognate to the vesicles upon the skin, yet I am obliged to admit that, although I had been treating the case for a whole week, on the theory of another origin, no progress had been made."

In my own mind, the case still is open to argument, for certainly the pleurisy acts in most cases as if it were like the eruption upon the cuticle, in a way self limited. Up to now I have collected eight instances of this seeming alternation of a localized pleurisy with an herpetic eruption upon the corresponding area of the skin. Yet we are as far as ever from a perfectly satisfactory answer, either by logic or demonstration, to the question, "Is an herpetic origin to pleurisy possible?" the question which heads this note.

163 Fulton Street.

UTERUS OF THE OPOSSUM.

SOME NOTES ON COMPARATIVE ANATOMY AND EMBRYOLOGY, WITH DEDUCTIONS.

By JOHN P. FURNISS, M.D.

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While serving as assistant surgeon, French's Division Hospital, 1863, I was associated with Surgeon H. D. Schmidt, late curator of the Museum Charity Hospital, New Orleans, La. We made dissections of the opossum, and I have been interested in the subject ever since, but it is only recently that I have acquired some new facts connected with it. These facts I have gathered from observation, literature, and personal communication.

Of the twenty-four living species, the common Virginian opossum (*Didelphys marsupialis*) is the largest, and the only one of the marsupials in the United States of America. There is a difference in the sizes of those of the Middle States, Florida, and Texas. Ordinarily it measures, head and body, twenty-two inches, and tail fifteen inches.

There are no living species on the European Continent, though Buffon states that fossil remains are found there in the lower tertiary formation.

They are closely allied to the Australian *Dasyuridæ*, but are distinguished by the hind foot having an inner toe, which, though nailless, is capable of being opposed to the other digits: by the number of their incisor teeth, of which there are five pairs in the upper, and three in the lower jaw; by their perfectly naked muzzles, and their long, naked, scaly prehensile tails, which enable them to be expert climbers. They have the same (two) marsupial, or pubic bones.

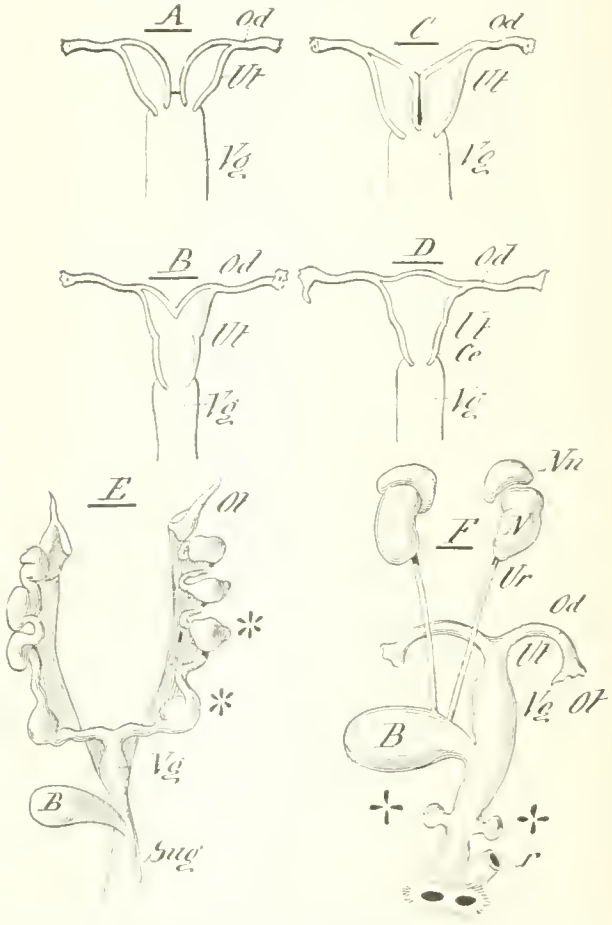

Fig. 1.—Various forms of uteri. A, B, C, D, diagrams showing the different stages in the fusion of the Mullerian ducts. A, uterus duplex; B, uterus bicornis; C, uterus bipartitus; D, uterus simplex; E, female urinogenital apparatus of *Mustelina*, containing embryos (×, ×) in the uterus F, ditto of Hedgehog (*Erinaceus*); *Od*, Fallopian tube; *Ut*, uterus; *Vg*, vagina; *Ce*, cervix uteri; *Or*, abdominal aperture of Fallopian tube; † †, accessory glands; *r*, rectum; *Sug*, urinogenital canal; *N*, kidney; *Ad*, adrenal; *Ur*, ureter; *B*, urinary bladder.

The idea that these bones serve only for attachment of the muscles of the marsupium has been discouraged, as they exist in the male as well as the female.

The animals are nocturnal in their habits, omnivorous, and possess the characteristics of the other marsupials in their low order of intelligence and their great tenacity of life. Their highest exhibition of intelligence is displayed in feigning death in the presence of danger. An entertaining and admirably illustrated account of their appearance, habits, and mode of capture by the Southern negroes is given in Nature Library, Vol. IV. Especial interest is attached to the urinogenital development of these

animals. In the human female fetus the Mullerian ducts are first noticed in the fifth week of embryonal life, and are parallel to the course of the Wolffian ducts. During the second month the ducts unite at a point near their centers; during the third and fourth months they are blended in their lower parts; at the fifth month the cervix uteri can be distinguished. The Mullerian ducts continue to diverge and form the Fallopian tubes. It is at this stage that there is the greatest resemblance to the development found in the adult opossum.

In the marsupials the fusion of the two oviducts is much less marked than in the higher mammals. According to Wiedersheim and Parker, a dilated portion of each oviduct, giving rise to a

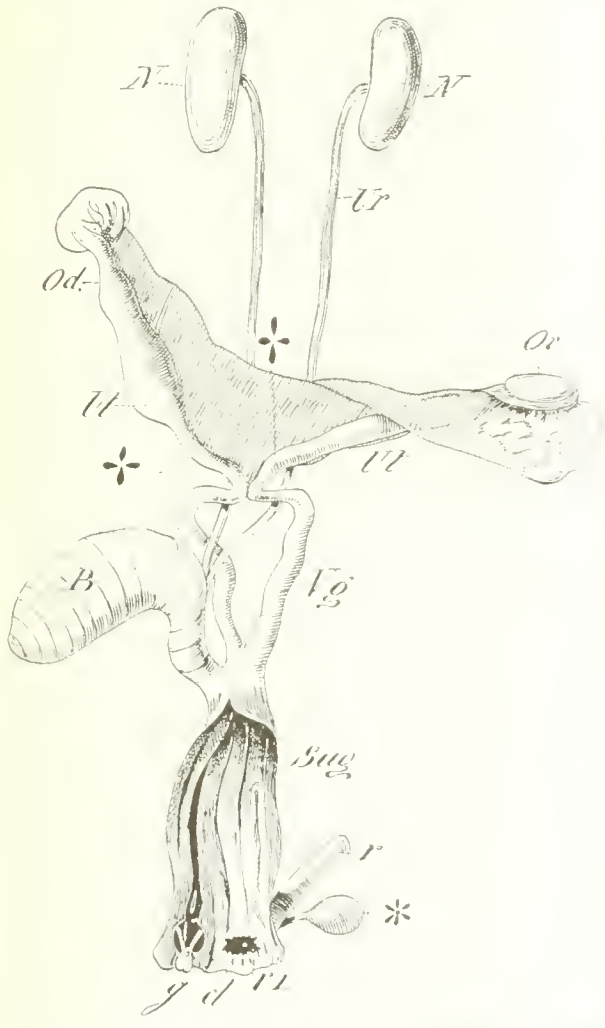

Fig. 2.—Female generative apparatus of *Didelphys virginiana* (after Bourgery and Jacob). *NN*, kidneys; *Ur*, ureters; *Ov*, ovary; *Od*, oviduct; *U*, uterus; †, bend between uterus and vagina; *Vg*; *B*, urinary bladder; *r*, rectum which opens to the exterior *Cl* at *vl*, *g*, clitoris; *, rectal gland.

uterus, is plainly distinguished from the rest, and its narrowed posterior end comes in close contact with its fellow in the middle line. At this point each uterus communicates with the vagina by a distinct os uteri. The vagina curves sharply outward and then backward, opening close to its fellow into the elongated urinogenital canal.

The anus and urinogenital aperture are surrounded by a common sphincter. This fact, or rather ignorance of it, has led many observers to declare that the female opossum had no vulva, and to give expression to many speculations as to how copulation was effected. A clitoris is present in the female of all mammals, and Buffon, quoting Dr. Edward Tyson, an English physician, who claims to have dissected one, states that in the opossum it is double. I am not able to verify this statement, but I do know that the glans penis is bifurcated, the urethra opening in the center. These points of the glans are one-third to one-half inch long. In man, and in most other mammals, the urethra traverses the glans, which is generally rounded, oval, or pointed.

The opossum is a nonplacental mammal. Buffon states that the period of uterogestation is not known. The author of the article on this subject in the Encyclopedia Americana says that it is twenty-six days, and that the young are carried in the pouch five or six weeks. The young are generally born in the spring, and there may be several litters during a season. When expelled from the uteri they are naked, like the young of mice, much more immature, and not larger than an ordinary bean. I have captured them in different stages of development, and at different seasons.

The mother attaches them to the teats, of which there are thirteen in her pouch. In this larval condition the margins of the lips become partially fused to form a suctorial mouth. Strong compressor muscles surround the mammary glands of the mother, and the milk is injected into the throats of the young. They remain attached to the teats until capable of motion and covered with hair.

Hill in classifying malformations of the uterus of the human female gives the following varieties of the aberrant class: (1) The nonfundated and grooved uterus. (2) The septate uterus, which has been more frequently reported than any others, except the bicornate and the double uterus. (3) The bicornate uterus. (4) The double uterus, or uterus didelphys. (5) The uterus with two cervices and one body. (6) Unicornate uterus. (7) Absence of the uterus. (8) The accessory uterus.

He says that uterine malformations are more frequently the result of defectiveness in the right Mullerian duct; that in birds and reptiles the right ovary and oviduct are very rudimentary; that in the monotremes we find a better development of ovary and oviduct on the left side; that from the marsupials through the ascending forms of animal life there are many stages of placental development representing the unerring approach to the perfectly formed structure found in the human race. So, also, are there many uteri representing the gradual fusing of the Mullerian ducts to completeness as is found in the single organ in the woman. Is this paraphrase justified? Wherever a malformation of the human uterus occurs its analogue can be found in the development of some of the lower order of animals.

THE TREATMENT OF STUTTERING.

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Few departments of medicine have been so neglected as that referring to defects of speech. Perhaps this has been due to the lack of well-developed sciences of mind and speech on which to base the pathology. The following notes give an account of a system of psychological and phonetic principles that may be useful to those who have to care for speech troubles.

The terms "stuttering" and "stammering" are applied in a confused way to a group of speech de-

fects that arise from three causes: (1) Excessive innervation of the speech organs, (2) deficient innervation, and (3) defects of the vocal organs themselves.

The first case may be termed "superenergetic phonation;" there is an excess of nervous discharge to the vocal organs, producing tonic and clonic cramps at various points. This is the condition in what has been called "convulsive stammering" and in ordinary stuttering where a sound is repeated. "Subenergetic phonation" in which the innervation is defective in amount and distribution, produces defective articulation such as is found in alcoholism; this defect may properly be termed "stammering." In the present paper only superenergetic phonation will be considered.

In a case of superenergetic phonation the first problem is to restore control over each group of the vocal organs. Breathing exercises are introduced to reeducate the control of the diaphragm, the abdominal, and the chest muscles. By having the patient place his hands over the abdomen or the chest, he can control his movements by the sense of touch in his hands. When this does not succeed we can apply the fundamental principle of reeducating the muscle-sense by using the sense of sight. A Marey receiving tambour is so arranged that its lever rests on the abdomen or chest; the recording tambour registers the movement on a slow-moving drum which is in front of the patient. Every deviation from an even, steady movement can be seen by him; in this way he controls his breathing movements by his eye. The superenergetic stutterer often cannot control his larynx well: exercises in producing tones are therefore introduced. Defects in articulation are to be cured by showing him how to place his lips and tongue for each sound.

The next step is to teach him to have his organs ready for use when they are wanted. Before he speaks a sentence he must have a supply of air ready by drawing in his breath. At all times he must have ready the first sound of any word he may wish to speak; this I accomplish in the following way:

The typical consonant sounds are first taught. The following list gives the phonetic letters, their names, and some words in which they appear:

[p] pa, as in "*p*ar."
[b] ba, as in "*b*ar."
[f] fa, as in "*f*ar."
[v] va, as in "*v*ary."
[t] ta, as in "*t*ar."
[d] da, as in "*d*arling."
[θ] θa, as in "*th*in."
[ð] ða, as in "*th*ine."
[s] sa, as in "*s*ir."
[z] za, as in "*z*ar."
[š] ša, as in "*sh*ah"
[ž] ža, as in "*j*ardin" (French) or "a*z*ure."
[k] ka, as in "*c*ar."
[g] ga, as in "*g*arden."
[m] ma, as in "*m*ark."
[n] na, as in "*n*o."
[l] la, as in "*l*ark."
[ɹ] ɹa, as in "*r*ah."

This phonetic alphabet is learned by daily practice till it is spoken to perfection and till it becomes almost as familiar as the ordinary alphabet. It is possible to get along without learning the vowels. The patient has also daily written exercises in indicating the sound of the first consonant in each word. Then he is told to write under each word of a selection of verse the phonetic letter for its first consonant. For example, the first two lines of Longfellow's "Psalm of Life" would be treated as follows:

Tell me not in mournful numbers
[t] [m] [n] [n] [m] [n]
Life is but an empty dream.
[l] [z] [b] [n] [m] [d]

Next he is practised in promptly producing any consonant sound at will. Thus, at each tap of a pencil he must promptly say [pa]. He goes through the whole phonetic alphabet in this way until the tap of a pencil automatically releases any sound called for.

This method is sufficient to enable a patient to read perfectly. He simply takes a breath before each sentence or phrase, and begins each word by thinking of its phonetic letter. The whole process finally becomes automatic, and the patient is cured as far as concerns reading.

For conversation we have a more complex condition to which we must apply certain psychological principles. In order to express a thought the person must first have the thought. The stutterer is often in such a condition of embarrassment and mental distraction that he cannot hold a thought long enough to express it. For example, when he intends to say that he needs a motor for his phonograph, he becomes so afraid of being unable to get out the word "motor" that the fear drives the idea out of his mind. He no longer has the picture of the motor with which to set off his speech center; rather, all that he has is the thought of stuttering, which of course sets off the stuttering cramps. Again, he knows that he must begin with the word "the:" he has failed so often that he is anxious about it. He thinks of "the," thereby driving the motor out of his head; but his fear also drives "the" out, and his cramps come on. This flightiness of thought often shows itself in the involved sentences that the stutterer attempts.

To cure this condition, I oblige the patient to describe the objects in the room or in a picture in short sentences. Here is an example: "I am in the doctor's office. A desk is in the middle. The lamp stands on the desk, etc." The description he repeats over and over, not in exactly the same words, but with sufficient sameness to place the exercise half way between the fixed sequence in reading and the entire freedom of conversation.

In this exercise the patient is told first to pick out the thing he is to talk about, *e.g.* "I," "desk," "lamp," etc. If he has any difficulty he can begin by writing a list of them. Then he is to speak the name of the thing; if he has any difficulty he is to think of its first sound. He is not to bother about any articles or adjectives; if he has trouble with "the," he is simply to leave it out.

These exercises are made freer and freer until they pass imperceptibly into conversation. The patient is finally warned that he must always first grasp the thing he wants to talk about, and that he must get its name out, even if he has to omit all articles and adjectives.

20 East Forty-fifth Street.

The Head Zone sometimes aids in distinguishing between acute appendicitis and salpingitis. If the zone commences at the level of the umbilicus, extends to the right lumbar region and to just below Poupart's ligament, it is probably acute appendicitis. If the zone begins a little below the umbilicus with a broad base on the abdomen and extends to a point between the hip-joint and the knee, the case is probably one of acute salpingitis.—*American Journal of Surgery.*

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THE APPLICATION OF NEW METHODS OF CLINICAL COPROLOGY TO THE DIAGNOSIS OF DISEASES OF THE INTESTINE.

THE older methods of coprology, including the chemical method of Hoppe-Seyler and the microscopic method of von Jaksch, sought merely to determine the principal constituents of the feces, without regard to the character and quantity of the ingesta and their consequent effect on the digestive organs. The physiological method of the Vienna school abandons minute analysis, and merely determines the proportions of proteids, carbohydrates, fats, and ash as indicative of the mode of nutrition and the power of intestinal absorption. (René Gaultier, *La Science au XXme Siècle*, January 15, 1907).

The new methods, as employed by Dr. Albert Robin, are based upon the examination of the fecal residuum of a test meal, so composed as to call forth the activities of the various intestinal glands, so that, in the case of normal digestion, only traces of the constituents of the meal appear unchanged in the feces, and in other cases the condition of the intestine and its glands may be inferred from the degree to which the various aliments have been assimilated. The dejecta of the test meal are easily differentiated from other feces by the administration of a capsule of carmine powder before and after the meal. The feces, thus differentiated, are examined microscopically, chemically, and, if necessary, bacteriologically, and the time occupied in traversing the intestinal tract is also noted.

This method of examination, in the first place, makes possible a more precise diagnosis of certain disorders designated as duodenal dyspepsias. These dyspepsias are merely symptomatic manifestations of organic or functional disturbances, which, whatever their primary cause may be, have their seat in that part of the tract which, by its production of such substances as secretin and enterokinase, and by its reception of the biliary and pancreatic secretions plays a very important rôle in digestion. The method enables us to detect, almost with certainty, the existence of pancreatic in addition to biliary deficiency, and to distinguish certain affections of the pancreas from suspected or coexistent biliary lithiasis. In a word, this method of studying the functional activity of the intestine completes the clinical diagnosis by giving information of defect, excess, or other abnormality in secretion, absorption, and peristaltic action.

From these data the physician imbued with the principles of functional therapeutics as taught by Robin may deduce a treatment that will modify the perturbed functions, instead of combating imperfectly known causes of disease by theoretical methods. In diseases of the liver, for example, the determination of the degree of activity of that organ, combined with the knowledge of the action of various foods and drugs, will give precise and practical indications for the treatment of disorders of its function. The same remark applies to certain varieties of acid dyspepsia. The authors have also found the new method very useful in the diagnosis and treatment of the varied intestinal troubles of tuberculosis, including the diarrhea of secretion of the incipient stage of that disease, the gastrointestinal atony and catarrhal enteritis, which accompany the second stage of pulmonary tuberculosis, and the colliquative diarrhea and ulcerous enteritis of the final stages.

Finally, the list of the practical applications of this method of functional exploration of the intestine includes digestive troubles, in which no well-marked lesions of the alimentary canal have been discovered, and which apparently are purely functional. In these cases the method becomes a reliable guide in the construction of a rational diet, adapted to the digestive capacity of the patient. Some persons, for example, digest and assimilate fats very well, while others, because of some physiological idiosyncrasy which is not suspected until after the examination of the feces, allow much of the fat ingested to pass through the alimentary canal unchanged. Some persons, again, possess the power of assimilating all the albuminoids ingested, while others lose in their stools two-thirds or even three-fourths of the proteid constituents of their food. These various digestive idiosyncrasies may be detected and differentiated by the regular and systematic analysis of the feces. Thus the physician can compute the quantity of each of the proximate principles required by each of his patients, increase the amount of foods that are well assimilated, and diminish the proportion of those not assimilated, in accordance with the cardinal principle that a man lives, not by what he eats, but by what he digests.

THE TOXIC REACTION FOLLOWING EXPOSURE TO THE X-RAYS.

EVIDENCE has been accumulating within recent years that the deleterious effects of the Roentgen rays are manifested not only on the skin and superficial structures of the body, but also on the internal organs. Of these effects the most marked, and perhaps the most dangerous, is the reaction which in many ways simulates an acute intoxication. This may be of such an extreme type as to produce a fatal ending, and it is therefore a most important matter to determine the character of the trouble in order that suitable means may be devised for overcoming or preventing this complication of a very valuable therapeutic procedure. The subject has recently been studied by Edsall and Pemberton (*American Journal of the Medical Sciences*, March, 1907), who report three cases in which a most severe reaction occurred after one exposure to the rays. Two of these ended fatally, while the third patient became

profoundly ill, but ultimately recovered. Fortunately, the writers had, for another purpose, made some studies of the metabolism in two of these patients, before the application of the *x*-rays, and were thus enabled to determine the alterations at the time of the reaction. In one case the *x*-rays were applied for the treatment of a pernicious anemia, the exposure being brief and of mild intensity. Within a few hours the man became violently ill, there was a chill, the temperature rose to 103.4° F., the pulse became rapid and weak, and general prostration was marked. During the following week there was some improvement, but the change was slight and three weeks later the patient died.

The second patient presented the typical lesions of rheumatoid arthritis, and *x*-ray exposures were ordered for the treatment of his joint conditions. Only one was given, and this involved merely the arm, but as the trunk was not screened it received a more or less diffuse exposure. Here also there followed a condition of prostration which verged on a moribund state, but from which recovery took place within a week. It should be noted that in both of these cases there was evidence of a general toxic condition, as shown by the slight rise of temperature, nausea and vomiting, loss of appetite, and moderate prostration. The chief point in the metabolism of these two patients is the remarkable drop in the excretion which followed the exposure, this drop being followed by an equally striking rise in the excretion to a point much beyond that which it had previously been. This drop was not due to a reduction in the food, for in one instance it occurred before any reduction in the food had taken place, and in the second there was no marked reduction in the intake.

In explanation of this curious phenomenon, the authors venture to suggest a theory based partly on what we already know regarding the action of the *x*-rays in increasing tissue destruction. It is probable that, when the patient suddenly becomes toxic, this is due to the fact that the organism is overwhelmed by the necessity for carrying on the complete disintegration of a mass of products of tissue destruction, and, as the body reacts, the complete disintegration is accomplished and the products are excreted. The fact that the patients were already the subjects of toxemia helps to explain the reason for the occurrence of the condition under circumstances which would not normally have been present. It also offers an explanation of the fact that a toxic reaction occurs only occasionally, and serves as an indication of when to beware of employing the *x*-rays as a remedial measure; for, when a certain degree of general intoxication is already present, the additional demands upon metabolic activity produced by the rays may serve to turn the balance in an unfavorable direction.

VON BERGMANN'S LAST ILLNESS.

It is not unusual to find that the fatal illness of well-known medical men is surrounded with considerable mystery, and the daily press in particular is apt to contain speculations without number as to the probable cause of death in such instances. Thus in the case of the celebrated surgeon von Bergmann it was variously reported in the cable dispatches to the American press that he had died of appendicitis, of peritonitis, and of cancer, and we find that even among the German papers no authentic account appeared regarding a matter which was the subject of so much interest on the part of his colleagues.

This entirely legitimate desire for information has been satisfactorily met by the publication of a report in the *Deutsche medizinische Wochenschrift* (April 11, 1907) by Professor H. Schlange, who attended von Bergmann in his last illness. It seems that the latter had suffered more or less from intestinal disturbances which were traced to an attack of dysentery contracted during the Russo-Turkish war, in which campaign Professor von Bergmann took an active part as a military surgeon. During the succeeding years several attacks occurred which simulated intestinal obstruction but were invariably relieved by local treatment. During the past year the patient gradually lost weight and strength and was troubled a great deal with sciatica. In March last evidences of chronic intestinal obstruction again appeared, and this was not relieved by the usual means. The distention increased, the abdomen became very tender, and it appeared to Professor Schlange, who had been called in consultation, that an incomplete obstruction of the gut had been converted by the presence of a peritonitis into a complete one. On account of the extreme weakness of the patient, it was thought advisable to make an artificial anus under local anesthesia, which was accordingly done in the region of the cecum. The distended cecum was opened within a very few minutes, and after the passage of considerable flatus and some fecal matter, the patient for a time felt greatly relieved. Very soon he grew weak again and within twenty-four hours the distention returned. The pain became intense and von Bergmann begged that relief be given by the formation of another artificial anus on the left side. This was accordingly done, a section of the descending colon being brought out and sutured in the wound. There were many evidences of an extensive peritonitis, and although some relief was secured after the gas was passed, there was no improvement in the objective symptoms. The patient grew gradually weaker, and death followed about twenty hours later without any attendant suffering.

Von Bergmann himself had asked that an autopsy be made, and this showed the presence of very extensive peritonitis. The ascending and transverse colon was so intensely dilated that rupture seemed imminent, and at the site of the splenic flexure was a sharp, angular constriction which was firmly fixed by dense bands of adhesions. The pancreas was considerably hypertrophied, and there were numerous areas of fat necrosis scattered throughout the abdominal cavity. Otherwise no abnormal lesions were found. The complicated nature of the case shows that there was little possibility that a previous operation could have saved the patient's life, and the autopsy findings prove conclusively that there were no evidences of malignant disease present as was stated in some of the earlier reports.

A Suggestion in Regard to the Treatment of Leprosy.

The therapeutic problem of leprosy has so long baffled solution that one is inclined to view with some scepticism the report of a new method of treatment which is considered very promising by its originators. Deycke and Reschad, who in the Gulhane Hospital of Constantinople have abundant opportunities for observing lepers, describe in the *Deutsche medizinische Wochenschrift*, January 17, 1907, the steps by which, after a period of experimentation extending over more than two years, they have been enabled to produce a therapeutic agent by means of which they believe that a great deal may be done towards the cure of the disease. This substance, a crystallizable fatty body, to which, on account of its firm consistency, the name "nastin" is given (*ναστός*, close-pressed), is derived by a process of ether extraction from cultures of a variety of streptothrix obtained from a case of leprosy. The fatty substance in question appears, like the fatty component of the tubercle bacillus, to render the organism more resistant to the bacteriolytic powers of the body fluids. On injecting it subcutaneously into normal individuals no reaction is produced, but in lepers bacteriolysis seems to be markedly favored. This is explained by the assumption that the nastin causes an active immunity whereby the body fluids acquire an increase in antibodies hostile to the specific organism of leprosy. This reaction is possible in leprosy because owing to the extremely chronic nature of the malady the general powers of resistance are not impaired to any great extent during the earlier stages of the disease. The authors do not claim that the nastin injections are of value in the severest or even in the ordinary advanced cases, but they are convinced that by this means it is possible to arrest the disease process in slight or moderately severe cases and in some instances to effect an actual cure. So far their results have been obtained from the unaided use of the new remedy, but now, having satisfied themselves of its value, they are about to combine its administration with the usual therapeutic measures, in the hope that in this way still better results may be secured.

Solar Baths in Tuberculous Peritonitis.

Considerable divergence of opinion still exists with regard to the treatment of tuberculous peritonitis. Many contend that the serous form particularly is susceptible of spontaneous cure, while others energetically claim that laparotomy is the only salvation. Among those who have had an opportunity to follow up the results in a large number of cases in which laparotomy had been done, the favorable opinion previously held has been considerably modified and internal treatment is credited with a greater proportion of recoveries than the purely surgical procedures. The reason for the favorable effects after a laparotomy has not as yet been determined, although there may be some truth in the assumption that "letting the daylight in" has brought about the curative reaction. In the belief that sunlight was actually the important factor, Oppenheimer (*Zeitschrift für physikalische und diätetische Therapie*, January, 1907) was led to try solar baths in patients the subject of tuberculous peritonitis. He employed the procedure in two cases with good success, the children gaining in weight as the ascites disappeared. The rays of the sun were allowed to shine for definite periods daily directly on the abdomen while the children were out in the open air. Oppenheimer thinks that the therapeutic effect of these sun-baths is due entirely to the local hyperemia of the peritoneum which is produced by the sun's rays, and that in this respect their action is analogous to the condition brought about by the performance of a laparotomy, for Nassauer among others has observed that this is what actually takes place. The results obtained in Oppenheimer's cases are by no means conclusive, but they suggest possibilities which may be employed before any more radical measures are resorted to. We have begun to realize that fresh air and sunlight are among the most important curative factors in the treatment of tuberculosis, no matter what its location in the body, and Oppenheimer's observations lend support to this view.

Some Dangers of the Rubber Nipple.

Apart from the fact that mothers' milk is the best food for nursing infants, artificial feeding is attended with dangers peculiarly its own. Cow's milk is, for various reasons, more liable to contamination and deterioration than mothers' milk. Moreover, the common method of feeding through a nipple, and also the use of the device known as a comforter or pacifier, may be responsible for deformities of the jaws and other secondary disorders. The subject is considered at some length in a communication by Dr. T. F. Pedley in the *British Medical Journal* for October 20, 1906, on the basis of experience in India, but his facts and conclusions are equally applicable to other localities. As he points out, the infant at its mother's breast takes the nipple far into its mouth and exerts compression by means of the lips and of the tongue against the palate, thus effecting expulsion of the milk. The jaws take little or no part in the act. On the other hand the rubber nipple of the ordinary nursing bottle, and more especially of the comforter or pacifier, is held firmly between the lips and is pressed by the encircling tongue against the middle of the hard palate, while the cheeks are drawn inward. Owing to the small orifices often present in the rubber nipple, the milk, instead of flowing in, must be sucked in, and with it enters a certain amount of air. As a result of the conditions described, deformities of varying degree occur in the superior maxillary bone, whose transverse diameter becomes diminished, with elevation of the palatal arch and projection forward of the alveolar process. In conjunction with these changes the nasal fossæ become narrowed, the septum buckled, the deflected vomer approximated to the displaced turbinated bones on one side, or any or all of these delicate bones to each other, with resulting obstruction to or abolition of nasal respiration. Mouth breathing is thus favored, with all its unpleasant consequences. Sometimes the arch of the lower jaw is narrowed from contraction of the symphysis during the process of bony union. In addition there is the danger of infection from the introduction of bacteria with the rubber devices under consideration. The evil results described are naturally the greater the earlier in life the use of the rubber nipple is begun and the longer it is continued, and they are more pronounced from the employment of the pacifier than from that of the nipple. For the use of the pacifier there is no legitimate excuse, and as a substitute for the nipple Pedley recommends a good-sized rub-

ber finger stall attached to the spout of a vessel like a feeding cup or an ordinary feeding bottle. Older children can be taught to drink from a cup.

The Pungency of Tobacco Smoke.

A recent *Lancet* article calls attention to the fact that probably not more than one-seventh of the nicotine survives in the smoke. On the other hand some observers have failed to find any nicotine at all in the smoke, and have considered pyridin as the harmful constituent. This body forms a large element in the oil which collects in the tobacco pipe, and this oil is very poisonous. It would appear, therefore, that the toxicity of tobacco may not have any relation at all to its nicotine content, and it is well known that some tobaccos contain a very small proportion of nicotine yet yield a smoke which is decidedly toxic. Certain Turkish tobaccos, for example, are almost free from nicotine, while they produce a pungent toxic smoke. It would be pretty safe to assert that all smoke is more or less toxic. If wooden shavings were substituted for tobacco in the pipe there can be little doubt that the smoke would have evil effects, but there is no nicotine in wood. The fact is, that the toxicity and pungency (though the terms are not necessarily interchangeable) of tobacco smoke are dependent chiefly upon the nature of the products of destructive distillation of the plant fiber. The pungency of tobacco smoke seems, at any rate, to bear some relation to the proportion of organic acids present in the leaf. The amount of these acids, amongst which citric and malic acid are chief, varies widely, and as a rule that tobacco gives the softest and least irritating smoke which contains the smallest amount of organic acid. The citrates and malates on destructive distillation give acid products. Of two cigarettes the tobacco of which contains approximately the same amount of nicotine, one may be found to give an unirritating and the other an acrid smoke. When the two tobaccos so concerned are further examined it may be found that one generally yields a larger ash than the other, corresponding with a larger proportion of organic acid. The tobacco with a larger proportion of organic acid is more liable to give an irritating smoke. In spite, however, of all the learned, and oftentimes unlearned, ratiocination that has been devoted to the subject of tobacco smoking, it appears that we still have not progressed much further than the empirical observation that the injuriousness or harmlessness of the weed depends not so much on its character or on the way it is used, as on the kind of man who does the smoking.

Acute Pulmonary Edema.

Edema of the lungs is most commonly met with in states of lost compensation during valvular or muscular heart disease, in conditions of cachexia, in grave infectious diseases, or in the terminal phases of acute or chronic nephritis. In addition to this form there is another which is independent of the above factors, but which from the suddenness of its onset, the alarming character of its symptoms, and the mortal peril in which it places the patient, closely resembles angina pectoris, and should therefore demand an equal degree of attention. Riesman, writing in the *American Journal of the Medical Sciences* for January, 1907, calls attention to the fact that, although this condition has been recognized for a long time, it receives very little or no mention in our textbooks. The condition, as shown by the cases hitherto reported, including six by the writer, comes on without apparent cause, and often kills within a short time. It is associated with a variety of affections which in the clinical sense may be considered in the light of causes, among which are arteriosclerosis, nephritis, angina pectoris, myocarditis, valvular lesions, asthma, the acute infectious diseases, pregnancy, angioneurotic edema, and certain other obscure conditions such as hysteria. Recovery from an attack is frequent, but there is a striking tendency to recurrences. The pathogenesis is obscure; Riesman considers that vasomotor disturbances and a disproportionate activity of the two ventricles, in which the right predominates, are the two chief factors. The leading symptoms of this state are agonizing dyspnea, cyanosis, cough, expectoration of frothy, albuminous fluid, and profound prostration. The characteristic moist râles of pulmonary edema are always heard, more over the upper portions than over the lower. Treatment to be effective, must be prompt. The most valuable remedies have been found to be venesection, dry cupping, and cardiac stimulants. As Riesman truly states, this condition is of sufficient importance to warrant its being accorded a special chapter in medical textbooks commensurate with that given to angina pectoris.

News of the Week.

Council on Medical Education of the American Medical Association.—The third annual educational conference of this Council was held at the Auditorium Hotel, Chicago, April 29. There were present eighty-four delegates, representing twenty-two State Examining Boards, eighteen State Medical Societies, the three departments of the Government services, three college associations, and seven colleges of liberal arts, in addition to the members of the Council. The work of the past year was pointed out in reports by the chairman and secretary. Accounts of the inspection of medical schools were given, as well as the classification of schools based on the State Board examinations during 1904 and 1905, inclusive. Forty-four colleges have adopted the requirements for admission to medical study of at least one year in a college of arts to be devoted to physics, chemistry, biology and one language, to become effective January 1, 1910. Eighteen of these will require two years or more of university work, or plan to give the combined course for the degrees of B.S. and M.D. Several committees reported. Dr. Arthur Dean Bevan was chairman of the conference.

Confederation of State Medical Examining and Reciprocating Boards.—This body met at the Auditorium Hotel, Chicago, April 30. At the meeting a definite step was taken towards the elimination of undesirable medical colleges which issue diplomas to incompetent and ignorant medical students. A committee was appointed by the Confederation to investigate that class of medical colleges throughout the country and report as to their qualifications to carry out the work for which they were established. Accordingly President Spurgeon appointed the following committee: Drs. W. A. Spurgeon, Indiana; B. D. Harison, Michigan; B. F. Bailey, Nebraska; J. B. Stephens, Wisconsin, and A. H. Hamel, Missouri.

Pennsylvania Antivivisection Bill Killed.—An act intended to prevent vivisection and animal experimentation of any kind, either for demonstration in physiology, for scientific research, or for any purpose whatever, which had been quietly introduced into the Pennsylvania Legislature, and had already passed the second reading, was summarily withdrawn from the calendar on the personal appeal of a group of distinguished medical men headed by Dr. S. Weir Mitchell of Philadelphia. Dr. Mitchell pointed out, among other things, that by the provisions of the proposed act it would be impossible to prepare in the State virus for vaccination and also diphtheria antitoxin, as well as to perform various operations on animals common in the farming industry.

New Dispensary for the Philadelphia Polyclinic.—Plans have been completed and estimates have been invited for the erection of a two-story brick and granite dispensary building as an addition to the present accommodations of the Polyclinic Hospital. The new building will be about 80 by 80 feet in size and will contain seven bedrooms, a students' lunch room, kitchen, pantry, four wards, a room for delirious patients, a laboratory, two nurses' rooms, a matron's room, rooms for the treatment of diseases of the skin, nervous system, eye, ear, throat, and nose, lecture rooms, rooms for orthopedic demonstrations, for resident physicians' offices, a students' room, a record room, a pharmacy, a room for massage, two operating rooms, an etherizing room, a sterilizing room, and a large solarium.

Medical Unification Bill.—On May 1 the Senate at Albany passed the so-called medical unification bill by a vote of 40 to 7. This substitutes one board for the present three Medical Examining Boards, and also gives greater recognition to the osteopaths.

Women's Labor Bill.— The Senate at Albany has passed the Hooper bill, which provides that women or minors shall not be employed before 7 A.M or after 10 P.M., nor for more than ten hours in any one day, except on Saturday, or except for the purpose of making a shorter workday of some one day in the week.

Railway Accident Mortality.—The bulletin recently issued by the Interstate Commerce Commission for the three months ended December 31 last shows that during that quarter the total number of casualties to railroad passengers and to railway employees while on duty was 20,944, an increase of 1,094 over those reported during the preceding three months. The number of passengers and employees killed in train accidents was 474, an increase of 207 over the number reported in the last quarter. The number of passengers killed, 180, is the largest on record, except that for the quarter ended September 30, 1904.

Trachoma Among School Children.—According to the Health Department figures, trachoma is rapidly decreasing among school children in this city. There are only 8,700 cases in New York schools now, as compared with the 15,000 of a few years ago. Further accommodation for the operative treatment of the disease is advocated and the subject will be discussed at the next meeting of the board.

Dr. Bryant Honored.—At the regular quarterly meeting of the faculty of the New York University and Bellevue Hospital Medical College, Chancellor MacCracken announced that the university corporation had conferred the degree of Doctor of Laws upon Dr. Joseph D. Bryant, Professor of Anatomy and then of Surgery for the past twenty-nine years, and President of the American Medical Association. The degree was conferred by the Rev. Dr. George Alexander, chairman of the university corporation.

New York Academy of Medicine.—At the stated meeting of the Academy, held May 2, the report of the work of the surgical research laboratory of Columbia University, 1906-1907, was made. There were presentations of specimens, instruments, and papers, with lantern slide demonstrations.

Osteopathic Bill Vetoed by the Governor of Pennsylvania.—Bill No. 211, passed by the Legislature of the State of Pennsylvania, has been vetoed by Governor Stuart. The bill, known also as the Wickersham bill, provided for the establishment of a fourth Board of Medical Examiners in addition to the three already in existence, and the granting of representation to osteopaths on the Medical Council. It is pointed out by the Governor that only physicians of ten years' graduation or more are eligible for membership on the Medical Examining Boards, while the new bill contemplated the appointment of osteopaths of four years' standing or more. It was further provided that any regularly graduated osteopath who had been in practice in the State at the time of the passage of the act should be entitled to license without examination, and also that regularly graduated practitioners of ten years' standing or more in other States should, upon the recommendation of the State Board of Medical Examiners, be entitled to a license without examination, while not regularly graduated osteopaths engaged in practice for two years should be eligible to examination.

Cocaine Bill.—The attempt to change by an amendment the original Smith anticocaine bill, now before the State Senate, was voted down last week. The Senate codes committee introduced an amendment whereby the selling of the drug without a physician's prescription would have been made a misdemeanor instead of a felony, as in the original bill passed in the Assembly. By a vote of 42 to 2 the bill was restored to its former form.

Workingmen's Health Insurance in Holland.—A measure providing for obligatory workingmen's insurance resembling the system now in use in Germany is under consideration by the States-General of Holland. The principal provisions of the law are: Every laborer regularly employed, including domestic servants, who has reached the age of sixteen years, is obliged to insure himself and family against the risk of illness. Those whose annual income is higher than 1,200 florins ($480) are not required to insure. The insurance can take place either in a district bank, instituted by the Government and subsidized by the State, or in any private or corporate insurance company, provided such institution shall give a sufficient guaranty to the Government of its ability to fulfill their obligations to the district bank. The premium is paid by the employer, who deducts the amount from the worker's wages. The whole country is divided into insurance districts, so that each community or aggregation of more than 5,000 people has its own district insurance bank. The indemnity in case of illness consists of free medicine, medical attendance and a sick benefit if the illness lasts more than two days and causes inability to work. If the disability is complete 70 per cent. of the wages is paid out; if only partial 35

per cent. is paid. The compensation is paid during 180 days at the utmost.

To Inspect Cuban Hospitals.—Surgeon-General O'Reilly, after a tour of inspection in Porto Rico, has gone to Cuba to inspect the hospitals of that island.

Queen's Medical Laboratories.—The cornerstone of the new medical laboratories building at Queen's, Kingston, Ont., for which the Ontario Government voted $50,000, was laid on Wednesday, April 24, by Lieutenant-Governor Clark of Toronto, immediately following the convocation proceedings. The building is now well under way. Besides being used for biological purposes, the pathological, bacteriological, and public health laboratories will be in it.

For New Italian Hospital.—The Supreme Court has signed an order permitting the Italian Benevolent Institute to mortgage its property at 165, 167, and 169 Houston street, in order to raise funds for the building of a new hospital. The Italian Government has contributed $60,000 for the endowment of the proposed hospital. The real estate at present held is estimated to be worth $62,000, and the personal property $76,000. The indebtedness of the society is now $15,000. The proposed mortgage is for $57,000, and bears no interest.

Jefferson Medical College (Philadelphia).—In connection with the dedication of the new hospital the members of the faculty of this institution have arranged for a series of clinics, ward walks, and demonstrations for visiting physicians, to be held on June 8, 10, 11, and 12. The committee of arrangements has the following members: Dr. H. Augustus Wilson (chairman), Dr. Henry W. Stelwagon, Dr. Edwin E. Graham, Dr. J. Chalmers Da Costa.

Additions to the Michael Reese Hospital Staff.—The following additions have been made to the staff of this institution: Attending surgeons, Drs. L. A. Greensfelder, D. N. Eisendrath, and E. Friend; attending physicians, Drs. M. F. Rubel, and T. B. Sachs; attending gynecologists and obstetricians, Drs. L. Simon and A. W. Schramm; dermatologists, Drs. E. A. Fischkin and D. Lieberthal; attending pathologist, Dr. Maximilian Herzog; attending The Senate codes committee introduced an amending genitourinary surgeon, Dr. Louis E. Schmidt; orthopedic surgery, Dr. C. M. Jacobs; children's diseases, Dr. J. H. Hess.

Appointment of Dr. Wilder.—Dr. Wm. H. Wilder has been appointed Professor of Ophthalmology in the medical department of the University of Chicago (Rush Medical College), a position vacated by Dr. F. C. Hotz.

Professor E. v. Behring, who some months ago was compelled to give up all work owing to severe neurasthenia, is reported as being completely restored to health and about to return to Germany from Italy, where he has been spending the winter.

Meningitis at Newport.—Another death from cerebrospinal meningitis has occurred at the Newport Naval Training Station. The patient was an apprentice seaman who enlisted four weeks ago, and the other men of the same draft are being held in the detention building, though no other cases have developed.

The Clinical Society of the Jewish Hospital.—This society held its first meeting at the Jewish Hospital, Classon and St. Mark's avenues, Brooklyn, on Friday, May 10. Its membership will consist of the house, visiting, and dispensary staffs of the hospital. The object of the society is to further the interests of medical science, with the aid of the large and varied clinical material at the disposal of its members.

International Congress on Tuberculosis.—Plans on a large scale have already been formulated for the International Congress on Tuberculosis to be held in Washington, D. C., during the last ten days of September and the first ten days of October, 1908. In addition to the scientific conventions it is expected to have a very extensive and complete tuberculosis exhibition, with exhibits from a great number of different countries. The attendance of foreign delegates is likely to be a large one, and thirty public lectures by visiting scientists have been arranged for. The congress is to be held under the auspices of the National Association for the Study and Prevention of Tuberculosis, and the committee engaged in the work of organization at present includes Dr. Lawrence Flick of Philadelphia, Dr. Vincent Y. Bowditch of Boston, Dr. Alfred Meyer of New York, Dr. J. J. Walsh of Philadelphia, Dr. Lawrence Litchfield of Pittsburg, and Dr. Charles J. Hatfield of Philadelphia. The committee has appointed a Secretary-General, Dr. John S. Fulton, of Baltimore, who has opened an office in the Colorado Building, in Washington, and will devote all his time to the organization of the Congress. The sum of $100,000 has already been pledged to defray expenses.

International Medical Association for the Prevention of War.—A meeting will be held in the Hotel Holmhurst, Atlantic City, on June 5 at 8 P.M. to organize formally the American Section of the International Medical Association for the Prevention of War. All physicians interested are invited to be present. The president of the American Section is Dr. Wm. Benham Snow of this city and the secretary is Dr. George Brown of Atlanta, Ga.

New York Entomological Society.—At the meeting of this society, held at the American Museum of Natural History on May 11, the subject of the transmission of disease through the mediation of insects was discussed by Mr. C. Schaeffer.

Berkshire County (Mass.) Medical Society.—At the meeting of this society, held in Pittsfield on April 25, officers were elected as follows: *President*, Dr. George L. Rice of North Adams; *Vice-President*, Dr. J. J. Hassett of Lee; *Secretary*, Dr. I. S. F. Dodd of Pittsfield; *Treasurer*, Dr. W. L. Paddock of Pittsfield.

Southeastern Michigan Homeopathic Society.—Officers as follows were elected at the meeting of this society, held in Detroit on April 26: *President*, Dr. E. J. Kendall; *First Vice-President*, Dr. Hale of Memphis, Mich.; *Second Vice-President*, Dr. E. L. Orneman; *Secretary*, Dr. F. E. Thompson; *Treasurer*, Dr. James I. Murray.

Windham County (Conn.) Medical Society.—At the one hundred and fourteenth annual meeting of this organization, held in Norwich on April 25, officers as follows were elected: *President*, Dr. C. J. Le Claire of Danielson; *Vice-President*, Dr. R. O. Paine of Thompson; *Secretary* and *Treasurer*, Dr. James L. Gardiner of Central Village.

Calcasieu (La.) Medical Society.—At the meeting of this society held on April 26 officers were elected as follows: *President*, Dr. V. A. Miller of Lake Arthur; *Vice-President*, Dr. T. H. Watkins; *Secretary* and *Treasurer*, Dr. George Kreeger.

Dr. Paul Poirier, Professor of Anatomy in the University of Paris, died last week.

Obituary Notes.—Dr. William H. Hotchkiss of New Haven died on May 2 at the age of sixty years. He was graduated from the Yale Medical School in 1860 and had at one time practised in St. Louis.

Dr. Charles Laight, son of the late Wm. E. Laight, died in Rome, Italy, March 31, 1907. He was graduated from the College of Physicians and Surgeons of this city in 1868, served as interne on the surgical division of the New York Hospital 1868-70, and later was connected with the New York Eye and Ear Infirmary until 1880. For many years he resided in Rome, Italy, coming to this country each summer to spend the season at his place in Keene Valley, in the Adirondacks. Interment took place at Rome.

Dr. George H. Fossard of Brooklyn died on May 3 at the age of sixty-eight years. Dr. Fossard was born in Albany and was graduated from the Albany Medical College. After serving through the Civil War as surgeon he practised medicine in Middletown, Port Jervis, and this city. He had not practised for many years.

Dr. Wilson C. N. Randolph of Charlottesville, Va., a great-grandson of Thomas Jefferson, died on April 26 at the age of seventy-three years. He was graduated from the medical department of the University of Virginia in 1855 and for sixteen years was a member of the Board of Visitors of the University.

Dr. J. B. Charlton of Clear Lake, Ia., died on April 27 after a long illness. He was born in 1845 in Pennsylvania, but in 1856 his family settled in Keokuk. He served in the Eighteenth Iowa Infantry through the Civil War, and in 1872 received his medical degree from the Iowa State University. He immediately began practice in Clear Lake, where he had resided ever since. He was four times mayor of the city.

Dr. John Wilson of Liberty, Mo., coroner of Clay County, was killed in a runaway accident on April 19, at the age of thirty-six years. He received his medical education in Kansas City and had practised in Liberty for the past eleven years.

Dr. C. B. Currier of San Francisco died on April 18. He was a native of New England and practised for a time in Vermont. In 1875 he moved to New York city and four years later went to San Francisco, where he had practised ever since. He was one of the founders and the first dean of the Homeopathic Medical College of San Francisco, and in 1906 was president of the California State Homeopathic Medical Society. He was also a trustee of the San Francisco Society for the Prevention of Cruelty to Animals.

Dr. Herbert K. Stiles of Somerville, Mass., died of pneumonia on April 27, at the age of thirty-eight years. He was a graduate of Amherst and received his medical degree from the Harvard Medical School in 1895. He had practised for a time in Roslindale, removing to Somerville seven years ago.

Dr. B. F. Tomlin of St. Louis died on April 26, after an illness of ten days. He was born in Pendleton, Ky., in 1834 and was graduated from William Jewel College, Liberty, Mo., in 1857. He was graduated from the Cincinnati Medical College in 1865.

Dr. Felix Ferriére of St. Louis died on April 20 at the age of eighty-six years. He was born in Bordeaux, France, and came to this country in 1847. After practising for a time in New Orleans he removed to St. Louis in 1885.

Dr. Henry R. Hayden of Los Angeles died on April 20 at the age of sixty-two years. He was born in Winchester, Ia., and after serving in the Civil War was graduated from Keokuk Medical College in about 1867. He practised for a time in Camden and Crete, Neb., and five years ago removed to Los Angeles.

Dr. Ray P. Robbins of Portland, Ore., died on April 10 of cerebrospinal meningitis. He was a native of Minnesota, and had practised in Portland for about three years.

Dr. Frank P. Webster of Norfolk, Va., died suddenly on April 20. He was born in Portsmouth, but had resided in Norfolk for many years.

Correspondence.

VENEREAL DISEASE IN THE CONTINENTAL ARMY.

To the Editor of the Medical Record:

Sir:—As the years roll on the character of the Revolutionary soldiers becomes heroic in our minds, largely because of iteration of their real achievements and partly from a general consciousness of the great importance to us and all mankind that their struggle for liberty involved.

But, although it comes with something of a shock, sober history reveals them as pretty much like other soldiers away from home. The Continental Congress found it necessary to make venereal disease expensive to the soldiers of freedom. On January 6, 1778, Congress voted:

"That the sum of ten dollars shall be paid by every officer, and the sum of four dollars by every soldier, who shall enter or be sent to any hospital to be cured of the venereal disease; which sums shall be deducted out of their pay, and an account thereof shall be transmitted by the physician or surgeon who shall have attended them, to the regimental paymaster for that purpose; the money so arising to be paid to the director-general, or his order, to be appropriated to the purchasing of blankets and shirts for the use of sick soldiers in the hospital."

Thus, it appears, that the followers of Mars who dallied with Venus were mulcted for the benefit of the patriots whose forms of illness had more claim upon the gratitude of a struggling republic. The humanness of the conditions which led to the vote may shatter an ideal or two, but the fact brings the American Revolutionary soldier much nearer to us in actual life than he ever appeared before.

John G. Coyle, M.D.

126 East Thirty-first Street.

OUR LONDON LETTER.

From Our Special Correspondent.

AMEBIC HEPATITIS AND DYSENTERY—INDIAN FEVERS—HYSTERECTOMY—PUBIOTOMY—DR. RENTOUL ON WOMAN'S HEALTH—COLLEGE OF SURGEONS' PRIZES—PROPOSED BIRMINGHAM SANATORIUM—OBITUARY.

London, April 19, 1907.

In a paper on amebic hepatitis at the Medico-Chirurgical, Prof. Leonard Rogers related fifteen cases of fever, in nearly all of which acute hepatitis was present with a peculiar form of leucocytosis. He regarded this as the early stage of amebic dysentery which usually went on to suppuration, constituting amebic abscess of the liver. Large doses of ipecacuanha were given in most cases, even in the absence of any symptoms of dysentery, with a view of arresting latent disease of the larger bowel. The result was a rapid cure of the hepatitis and of the dysentery when present, with cessation of the fever. In some cases there were no symptoms of hepatitis, the cause of the fever remaining unknown until a blood examination showed the leucocytosis. Then the ipecacuanha was given and the fever ceased. In one-third of the cases exploratory operation for liver abscess was tried with negative results, but the patients recovered under ipecacuanha, and Prof. Rogers said this drug should be administered before operative procedures whenever there was a doubt about abscess having been found in the liver.

Sir Patrick Manson said ipecacuanha was a specific in amebic dysentery, but useless in the bacillary form. It had too often been given in insufficient doses or not continued long enough. He gave large doses for a week followed by smaller ones for at least a month. In amebic

hepatitis its accidental use had given him some success, and in future he would use it in threatening abscess of the liver.

Sir L. Brunton suggested that ipecacuanha killed the amœba and that the leucocytosis might be due to the irritation of Peyer's patches by the dysenteric process.

Dr. Anderson said he had found that chloral given with the ipecacuanha greatly lessened the distress caused by the nausea and vomiting. Chloral he found much better than opium for this purpose.

Mr. Cantlie remarked that the temperature very often fell and the symptoms disappeared in cases of hepatitis after merely putting a needle into the liver.

Prof. Rogers having made some remarks in reply, read another paper on a short fever which he thinks should be differentiated from malaria or continued fever, as which it has hitherto been returned. From a study of 1,350 consecutive cases of fever in Calcutta he has separated this type by the blood changes and symptoms. It begins with severe headache and pain in the back and limbs, lasts six or seven days, and may be mistaken at first for typhoid, as the pulse is slow relatively to the temperature, contrasting with that of malaria. This seven-day fever occurs in the later hot weather and early monsoon months in Calcutta and declines when the malarial rise takes place at the close of the rainy season, the two fevers making one curve through both seasons, and so have been regarded as one. The seasonal prevalence differs from influenza. It has been regarded as dengue, but the temperature curve and other characters are very different. It has probably been confused with both dengue and malaria.

Dr. Anderson said this fever reminded him of a common type in the Northwest Province, called "ardent fever," in which quinine was useless but cold sponging and bromides relieved.

Sir P. Manson said there were many different types of fever in India and this was one. He thought them protozoal —not bacillary.

Obstetricians have been somewhat preoccupied with surgical procedures. At their society Mr. J. D. Malcolm has strongly advocated the removal of the cervix in hysterectomy. He argued that when left with the blood supply partly cut off and its narrow central tube lined with mucous membrane, the cervix offered a favorable nidus for the development of microbes in the divided uterine tissues, while the provision for drainage of discharges was imperfect. This view was controverted by other speakers. Mr. Doran said the cervix was an important part of the pelvic floor and it might be that not only the cervix but a little more of the uterus should be spared. Long after-histories were important and by them he had shown the value of the so-called sub-total operation in sixty cases. Dr. Amand Routh said he, too, was not convinced by Mr. Malcolm's arguments. He did not think the blood supply was cut off nor that the cervix when left tended to degenerate. The mortality of panhysterectomy was undoubtedly larger. Pozzi's statistics of 1,000 collected cases showed a mortality of 10.4 per cent. against 7.4 per cent for the sub-total operation. It was also certain that the cervix had an internal secretion. If organs were removed on account of possible future dangers, where should we stop? Dr Eden said he had been satisfied with both operations, but preferred the sub-total except in special circumstances. He was not convinced by Mr. Malcolm's arguments. The President, Dr. Herbert Spencer, said he had performed many total abdominal hysterectomies to the entire exclusion of partial operations for the past six years. He still held that the total operation, performed by Doyen's method, was best. It provided drainage, gave security against injury to the bladder or ureters, and against unrecognized hemorrhage, it removed the cervix, which might become infected, slough, or develop malignant disease; further, it was less likely to be followed by intestinal obstruction. The supposed advantage of the internal secretion and slight shortening of the vagina could not be set against those advantages.

Another operation occupying obstetricians is Döderlein's subcutaneous pubiotomy, which seems an important improvement on Gigli's open incision of the os pubis as a substitute for the rather unsatisfactory symphysectomy. The subject has been brought before the Royal Academy of Medicine in Dublin, where the school of midwifery has so long held a reputation second to none. Dr. M. J. Gibson of the Coombe Hospital related three cases. The patients refused cesarean section but had no dread of the minor proceedings and neither of them subsequently showed any difference from a normal labor. All three infants were suckled. The advantages over symphyseotomy were stated to be that the pelvis is prevented by the undivided soft parts from springing suddenly apart, the bladder and urethra are less liable to injury, and the operation is more easily and more rapidly performed. It is a mode of overcoming the difficulties of the lesser degrees of contraction of the pelvis without injury to mother or child.

The Master of the Rotunda, Dr. Hastings Tweedy, detailed a case of a primiparous woman whom he had delivered of a living child through an internal conjugate of 6.5 cms. at full term by this operation. Hemorrhage had been very severe with considerable collapse. Delivery had to be hastened on account of prolapse of the cord and therefore the operation was done. Laceration of the cervix, perineum, and soft parts between the severed bones required catgut sutures. The patient left hospital in the ninth week with a living child.

Sir A. V. Macan remarked on the ease with which the operation could be done. There was nothing in it to deter anyone who had been through the Dublin school and it gave the country practitioner the chance of saving mother and child when forceps had been tried and failed.

Dr. Neil said the risk of sepsis was less than in induction of premature labor, and Dr. Alfred Smith said the operation had come to stay.

Dr. Jellett suggested that there were two classes of cases, those in which there was reason to believe forceps would fail and those in which forceps had been tried and failed. The ease with which pubiotomy was done would tend to diminish mortality.

Dr. R. D. Purefoy (President) said cesarean section in some cases could not be superseded. The danger of pubiotomy, had, perhaps, been passed over too lightly. Injury to the bladder had been recorded, a fatal case from hemorrhage had occurred in Vienna. Agreeing as to the value of the procedure, he still wondered if the locomotive powers of the patients had been satisfactory afterwards or if time enough had elapsed to determine that point.

In reply it was stated that the bladder was not so closely connected with the os pubis that tearing would result unless there were adhesions from previous puerperal sepsis, and the undivided soft parts gave additional protection. If hemorrhage could not be stopped by compression the wound could be opened and the source of bleeding found. The operation was safer than cesarean section up to a conjugate above 6.75 cm. It was the easiest plan for the practitioner far from skilled assistance.

Dr. R. R. Rentoul lectured on Monday at the Institute of Hygiene on "Woman's Health: Our Greatest National Asset." He vigorously denounced our neglect of this subject, as well as women's increasing desire to avoid the duties and responsibilities of motherhood. He declared that the child-hating married woman was a demoralized person whose desires were limited to a rich husband, a flat, a poodle, and a maid-of-all-work. She was a menace to the race, while the mentally healthy woman represented the best thing in life—motherhood. He advocated drastic reform of the marriage laws, encouragement of the healthy, and discouragement of the unhealthy to marry. He proposed to raise the marriageable age to 25 for men and 21 for women, to require a prenuptial medical certificate of good health, to make it illegal for diseased persons to marry, to abolish actions for breach of promise where disease existed, to prohibit paupers and vagrants from marrying, to tax bachelors, to reduce taxation to those who had small incomes and large families. There is a program that even the present government, which seems bent on destruction, might consider beyond its power. Dr. Rentoul further blamed the profession's leaders for having increased puerperal mortality by degrading the practice of midwifery and handing it to an inferior order.

The Jacksonian Prize for 1906 was last week awarded to Mr. Donald John Armour. The subject was the diseases and morbid growths of the vertebral column, spinal cord, and canal, which are amenable to surgical operations. The subject for 1908 was chosen, viz., diseases of the colon relievable by operation. The next Triennial prize is to be on the lymphatic and hemolymphatic glands, especially as to their changes in infective processes.

Birmingham City Council on Tuesday decided to establish a sanatorium for consumptives on a site costing £17,000. Accommodation for forty patients, who will be kept under observation after leaving will be provided. A minority opposed the scheme on the ground that the treatment is in the experimental stage, and it would therefore be better at present to board out patients in private sanatoria.

We are all regretting here the death of Dr W. H. Drummond, the Canadian poet and physician. I say all; assuredly that will be true of those who know his "Habitant" and other pieces so racy of the soil. His "Docteur Fiset" is a favorite with many who know that only. He was born in Ireland, but was taken to Canada in childhood, and became in every way a true Canadian. You probably know his career as well as we do.

Dr. William Henry Ransom, F.R.S., consulting physician of the Nottingham Hospital, died on Tuesday evening. He took the M.D. of the London University in 1850. He was among the Senior Fellows of the Royal College of Physicians, his election dating 1860, and he served on the Coun-

cil 1891, 1892, and 1893. In 1870 the Royal Society elected him a Fellow.

Dr. Edward Ferrand Astley, J.P., died on the 12th inst., in his ninety-sixth year. He was for a long time physician to the Dover Hospital. He took L.R.C.S. Ed. in 1833 and M.D. the next year. He did not join the College of Physicians until 1860.

OUR BERLIN LETTER.

From Our Special Correspondent.

THE DEATH OF VON BERGMANN—DISCUSSION OF THE SPIROCHETE QUESTION.

BERLIN, April 5, 1907.

THE physicians of Berlin are still mourning the loss of the eminent surgeon Ernst von Bergmann. What he was in the medical life of the city was well shown only a short time ago when he celebrated his seventieth birthday, apparently in perfect health. It is now generally known that some time ago he diagnosed his own case as one of carcinoma of the rectum, and even in his clinic made his own symptoms the subject of a discussion of this malady. For some time he continued at his manifold and arduous duties, until early in this year to his great sorrow he was compelled to give up his lectures on account of the severity of the sciatic pain from which he suffered. He then delivered a farewell address and went to Wiesbaden, where finally symptoms of total intestinal obstruction supervened. He was operated on by his pupils, Schlange and Borchard, but without success. On March 29 an impressive funeral service was held at the scene of his labors, at which the Crown Prince was present.

An interesting series of discussions on the spirochete question have been held at the recent sessions of the Berlin Medical Society. These were started by two papers, one by Blaschko, entitled "Observations and Demonstrations on the Spirochete Question," and the other by Benda on "The Critical Consideration of Levaditi's Method of Silver Staining, with Demonstrations." Blaschko opposed the statement that has been made by other observers that non-medullated nerve fibers in the organs are stained by Levaditi's silver impregnation method and may be confounded with the *Spirochæta pallida*. He said that non-medullated nerve fibers did not stain at all by Levaditi's method, and that it was out of the question for a trained observer to confuse elastic fibers with spirochetes. He had discovered spirochetes only in syphilitic tissues, and in twenty-five chancres he had found the organisms always only in one spot, and there in great numbers. According to the direction in which the sections were cut the cluster of spirochetes would be discovered or not. The spirochetes are not found in the cells, but lie in the interstices between them, and appear to wander in a direction parallel to the fibrils of the tissues. They also are disseminated through the lymphatics and blood, and often occur free in the lumen of the blood-vessels. The chancre is formed as the result of toxins given off by the organisms.

Benda said that he considered a criticism of the Levaditi silver stain justified because in all such methods depending on impregnation with metals it was difficult to determine the conditions under which the staining took place. In some instances the method was effective in demonstrating spirochetes, but in others doubts were justified as to whether the structures seen were spirochetes or not. Cell boundaries or the edges of erythrocytes could easily be distinguished from spirochetes, although these structures had been spoken of in this connection by some observers, but the end bodies of Krause of the nerve fibers in striated muscle might give rise to error as well as certain fibrils of undetermined nature in the central nervous system. Non-medullated nerve fibers were not stained by the method, and of the medullated fibers only the larger ones, so that the size of the stained structures indicated whether they were spirochetes or nerve fibrils. Against the objection that spirochetes could be stained in the tissues only by one method he offered an observation made on unstained sections of congenital syphilis of the liver, which he examined by ultra violet light. It appeared that certain giant cells without nuclei in the gummata were composed of a mass of fibers and granules apparently representing degenerated spirochetes.

In the discussion, Hoffman presented four questions. (1) Is the silver spirochete a true parasite and not a component of the tissues? (2) Is it identical with the spirochete found in smears? (3) Is the spirochete the causative agent in syphilis? (4) What is its significance in practice? The first question he thought should receive an affirmative answer, since the spirochetes could be found in the lumina of veins, in the testicular canals, and in epithelium, but only where syphilis existed. Other spirochetes, for example, those of fowls, can be demonstrated by the same method. The difference between the structures stained by the Levaditi method and the Giemsa method is easily explicable, owing to the nature of the procedures. In the process of fixation and imbedding in paraffin a considerable amount of shrinkage takes place, and in the Levaditi method the silver is precipitated on the organism in minute granules, whereas the Giemsa stain colors the spirochete itself. In regard to the question as to whether the *Spirochæta pallida* is the cause of syphilis, important information might be gained by resorting to dark ground illumination. In most cases by this means it was possible to demonstrate the living *Spirochæta pallida* in early chancres, secondary papules, etc. The importance of this lay in the fact that the diagnosis of syphilis could now be made without waiting for the appearance of the roseola.

Saling looks on the *Spirochæta pallida* as a harmless parasite, occurring incidentally also in syphilis, and considers that the silver spirochetes are artefacts formed of nerve fibrils, elastic fibers, etc. It may be found everywhere where degeneration is going on, and degeneration can always be taken for granted in syphilis, even in the primary lesion. As a reason for believing that the necrosis may have a direct connection with the occurrence of the silver spirochetes it may be pointed out that in acquired syphilis, that is, in the organs of adults, which are more resistant to necrosis, the silver spirochetes are found but rarely, and they have not been discovered in the organs of infected apes, whereas they are abundant in macerated fetuses and in foci of necrosis not caused by syphilis; for example, in the spirillosis of fowls. The producers of this disease are spirilli that occur in the blood, but not in the tissues. If necrosis is present, however, the spirochetes are found also in the latter. When spirochetes are seen free in the lumina of vessels it may be alleged that these appearances may be caused by tangentially cut endothelial cells, that they may have been displaced by the microtome knife, that the edges of red blood cells may contract into spiral forms and take up the silver, or that many varied constituents of macerated tissues may be detached and transferred mechanically into the interior of the vessels. The speaker's strongest argument against the identity of the silver spirochetes with the *Spirochæta pallida* was the fact that by inoculation with street dust he had been able to produce a keratitis with silver spirochetes that were only nerve fibrils.

Bab had been able to prove through the method of the deviation of the complement that the *Spirochæta pallida* was the cause of syphilis, for organ extracts free from spirochetes were free from antigen, while organs containing spirochetes also possessed antigen. He had found silver spirochetes only in syphilitic tissues, and he was also of the opinion that they could not be either nerve terminations or elastic fibers.

Friedenthal pointed out especially the differences in size of the various spirochetes. He was of the opinion that the silver spirochetes were only nerve ends, and stated that by this method he had been able to demonstrate about cells minute nerve fibers which were no larger than the spirochetes.

Ort demonstrated preparations to show that silver impregnated bacteria always seem larger than stained specimens. What Saling regarded as maceration in syphilis was a coagulation necrosis, that is, the opposite of maceration, and therefore Saling was in error in stating that the tissues must be macerated in order for the silver spirochete to appear. The variations in size also were no argument against the validity of these structures, for such differences occurred in all microorganisms of the same species. The argument that the spirochetes occurred only in certain spots was unimportant, for tubercle bacilli, for example, do the same thing. Ort considered that the silver spirochetes were not artefacts.

Hoffman opposed to Saling's statements the fact that by means of the dark ground illumination he had been able to discover spirochetes in the blood taken from the finger of a child with hereditary syphilis. He had also been able to obtain positive results on inoculating monkeys with syphilitic virus from the cornea of the rabbit. The so-called rabbit syphilis described by Siegel was not syphilis at all, but sepsis.

The discussion continued for some time longer and several other speakers expressed their opinions. It appears to be settled that the spirochete is not an artefact, but, according to the views of those taking part in the debate, proof that it is the cause of syphilis is still lacking.

Identical Finger-Prints.—Two men tried recently for petty offenses in South Africa were subjected to the usual finger-print records, and a subsequent comparison of these records showed that they were identical in every line and curve.

Progress of Medical Science.

New York Medical Journal, April 27, 1907.

Cystoscopy in Tuberculosis of the Urinary Tract.—Willy Meyer finds this method of diagnosis absolutely necessary. It should be preceded by palpation, examination of the urine and its centrifugal sediment for bacilli, but should itself precede the use of tuberculin. We should always think of a descending tuberculosis when a patient, especially a younger one without any gonorrhea or instrumentation, suffers from painful micturition with unilateral lumbar pain and sudden frequent urination in small quantities with the crucial test of bacilli in the urine, yet some of the foregoing symptoms are misleading in the earlier stages, as experience shows. In the more advanced cases cystoscopy is often impossible, as the bladder will not tolerate a sufficient amount of urine to enable us to proceed, and the vesical ulcerative catarrh is often so pronounced that a preliminary preparation of the bladder is imperative. This should consist in gentle irrigation with very small amounts of sterile boric acid solution two or three times weekly, frequently injected and allowed to run out, followed by bichloride solution or iodoform emulsion. The bladder should now be forced to contain more than 120 to 150 c.c. of boric acid solution. The author describes in detail his method of procedure. The coexistence of prostatic tuberculosis may render cystoscopy impossible. If the irrigating cystoscope is used, the effect of bleeding from the neck of the bladder may be readily overcome by having an assistant slowly inject the boric acid solution through the afferent tube while passing the instrument over the diseased area. This keeps the prism clean during the procedure.

Severe Ocular Pain Associated with Grippe.—The essential features of the four cases reported by J. T. Krall are thus summarized: There was a distinct history of endemic influenza vera in all four cases, two of which were males and two females, ages twenty-four to thirty-two years. From the second to the sixth day of the disease there developed sudden excruciating pain in the eyeball, affecting one in the right and three in the left eye, lasting from two to five days, gradually subsiding. At no time during the course of the disease were there any symptoms of inflammation of the eyeball or its appendages, no pain on movement of eyeball, no tenderness on pressure over parts supplied by the trigeminus, no hyperesthesia or vasomotor affections, such as pallor or coldness, or redness, heat, or edema, and no trophic phenomena. In one case there was severe deep-seated boring headache, associated with nausea and vomiting. Temperature ranged from 99° F. to 103° F. The examinations of the urine were practically negative. No examination was made for the Pfeiffer bacillus. The disease was followed by physical weakness and mental depression. The author believes that the lesion in these cases was neuralgia of the ciliary nerves. The way in which the bacillus causes it is still a matter of discussion. It has been referred to the irritation of those terminal branches of the trigeminus which are situated in the sinuses in the vicinity of the nares. It may be due to a blood toxemia acting on the nerve centers or nerve fibers, no true inflammation having taken place.

Some Application of the Roentgen Rays in Dermatology.—R. H. Boggs gives his experience with *x*-ray therapy in eczema, acne, psoriasis, keloid, cutaneous tuberculosis, and alopecia areata. Concerning its employment in eczema, he says that it is certainly not necessary in the acute form unless it be to control the pruritus, otherwise unrelieved, nor in most forms of subacute eczema. It is, however, useful in many chronic cases rebellious to treatment. The good effects are most marked in the squamous form. It requires more intense radiation to relieve the pruritus, and there is a greater tendency to recurrence than in any other form of the disease. After a few applications the discharge and itching cease and the desquamation is arrested. In weeping eczema the desquamation usually ceases after four or five treatments. In eczema of the legs, with a complicating varicose ulcer, radiation should be entirely different in application from that employed in the squamous form, as there is marked difference in the vitality of the tissues. The rays here relieve the eczematous condition greatly increase local metabolism, and assist the other methods of curing the ulcer. The author says, with reference to keloid, that the *x*-ray therapy has been more successful than any other method up to the present time. However, by the Roentgen method it requires considerable time to remove a keloid, and rays of such character as to stimulate normal tissue processes and promote absorption should be employed. Rays which are very destructive, if given in large amounts as in carcinomatous tissues, are contraindicated in the treatment of keloid. It has been advocated by some to have the keloid removed and then give a series of treatments. This shortens the length of treatment, but the author would not advise the removal unless the tumor is extensive, as cutting a keloid occasionally stimulates the activity of its growth.

An Unusual Symptom in Chorea.—Three cases of chorea are reported by G. F. Price, in which excessive secretion of saliva with drooling was a prominent symptom. The patients were a boy of twelve years and two girls of fourteen and six years respectively. In each case the patient had had one prior attack of chorea. All were severe, and two had distinct mitral murmurs. No history of rheumatism could be obtained in any of the cases. The author believes that the symptom is of purely mechanical origin, the movements of the tongue and of mastication exciting the salivary glands to increased activity and the involvement of the tongue, jaw, palate, and pharynx so interfering with swallowing that the saliva is retained in the mouth or drools from the corners. Under the use of the usual remedies for the chorea, the symptom mentioned was relieved in all the cases reported.

Journal of the American Medical Association, May 4, 1907.

Infantile Atrophy of Intestinal Origin.—D. L. Edsall discusses the pathogenesis of infantile intestinal atrophy and offers the theory that it is the result of disorder of the ferment function of the intestine. That is, when the proteid of the ingested food is progressing in the breaking down or fragmentation necessary for its reconstruction into homologous form, the final attack by the ferment of the intestine does not occur or is ineffectual, and the rebuilding into the patient's tissues fails or is imperfect, hence the atrophy. The foreign protein may be either incompletely fragmented and the reconstruction therefore rendered impossible to the extent of producing a homologous protein, or the intestinal ferment failing or reduced, reconstruction would also fail. This hypothesis is consistent with the fact that the difficulty lies in the utilization of the milk of a foreign species. There is no good evidence, he declares, that infants ever fail to assimilate human milk unless they are desperately ill, provided that the milk is not so rich as to upset digestion or so poor as to be insufficient; and provided also that the mother or nurse is not in such a physical or emotional state as to render the milk unsuitable. He has tested his hypothesis by studies of the proteolytic power of the intestines obtained at autopsy in three cases of children dying of typical progressive atrophy; also in three control cases of persons dead with extreme emaciation due to other causes, and also in two cases of older persons with continuous and final extreme emaciation for which the autopsy showed no cause. His method of investigation is given in detail, and the results in the cases of infantile atrophy appear to support his theory, inasmuch as they show a great reduction or entire loss of proteolytic power in the intestinal mucous membrane. The control cases show a much greater proteolytic power. The two older patients were stuporous and were fed by the stomach tube. In both, the intestinal extract showed no proteolytic action, but, contrary to the infantile atrophies, the extract of the gastric mucosa showed little, if any, evidence of the presence of pepsin. The suggestion of Pawlow that in such cases the lack of psychic stimulus to the production of digestive ferments may play a part, is referred to, and Edsall thinks that here also there is a field for study.

Hemolysis in Pernicious Anemia, Augmented by Urinary Retention.—H. A. Freund reports a case very similar to that reported by Cunningham (*Annals of Surgery*, February, 1907) of pernicious anemia complicated with urinary retention. He does not, however, accept Cunningham's view that the urinary retention was secondary to the relapses of the anemia which caused weakness of the bladder musculature. On the other hand, he is inclined to think that the enlarged prostate, which was present in both cases, was primarily responsible for the urinary retention, and that following this there was a retention and absorption of the hemolysins which failed to be excreted, with consequent changes in the course of the disease. When the poison that is normally being excreted from the kidneys is added to that in the general circulation, increased hemolysis is to be expected. He discusses the origin of the hemolysis in pernicious anemia and remarks that his observation and that of Cunningham suggest new questions for profitable study: the constancy of hemolysins in the blood and urine in pernicious anemia, together with their relation both quantitatively and qualitatively; the absorbability of these substances, and the presence of the products of hemolysis in the urine. A method for

estimating hemolysins that will give uniform results is also to be desired.

Erythema Induratum (Bazin).—The erythema induratum of Bazin, according to L. Weiss, stands about third in the list, and is a very important exponent of the group of cutaneous tuberculides of Darrier, being preceded by lichen and acne scrofulosus and the papulonecrotic tubercle. In more than half the reported cases it has been proved to be associated with tuberculosis, and in a very few cases the tubercle bacillus has been found in the lesions. In other cases inoculations in guinea-pigs have given positive results, while in still others the tuberculin reaction has been demonstrated on the patient. The characteristic features are the formation of subcutaneous deep-seated nodules, more easily recognized by touch than by sight, and developing into hard, deep-seated indurated nodes not adherent to the skin at first, but becoming so later. The skin is at first purplish, then as the nodes become larger and work toward the surface it changes into a dull violaceous hue. The size of the nodules varies from that of a cherry to even double that size. Their development is slow, and when they ulcerate, which is seldom, necrosis begins at the summit of a nodule, rarely more than one, and is attended with a scanty, semipurulent discharge. The scarring and pigmentation is not so pronounced as that of ulcerous scrofuloderma. It occurs chiefly in young females, occasionally in older ones, and very rarely in men. It is usually on the legs, but in the case reported by Weiss it occurred also on the nates, which, he thinks, has not been before recorded. There was a stormy tuberculin reaction in this case. The histological features were much the same as those found by other investigators; an atrophic degeneration of the subcutaneous fat tissue, and formation of giant cells with radiating nuclei and epithelioid cells and endothelial proliferation of the vessels. The symptoms disappeared spontaneously. As regards the differential diagnosis from erythema nodusum, he remarks on the brighter color and more inflammatory and painful character of the latter, the rarity of the lesions breaking down and the manner of their disappearance resembling that of an ecchymosed contusion, as contrasted with the more chronic, slighter pain, and inflammatory symptoms and more evanescent disappearance of erythema induratum. The differentiation from syphilitic gummata, which it resembles very closely, can be made by the multiplicity of the nodes in erythema induratum, the chronic course and systemic symptoms, and the therapeutic test with specific treatment. The confusion, with lepra to which it bears a far-away resemblance, is not very imminent.

Interesting Gynecological and Obstetrical Cases.—T. S. Cullen gives detailed reports of several cases of more than usual gynecological or obstetrical interest. The first is that of a patient from whom he removed a cystic uterine myoma weighing eighty-nine pounds. The patient had been aware of its presence for twenty years, and notwithstanding its size was able to do her household duties up to three weeks before the operation. Her principal inconvenience had been the danger of suffocation if she turned on her back in bed. Though considerably larger myomatous uterine tumors have been reported, this appears to be the largest successfully removed. Owing to exigencies of the case no part of the abdominal wall was resected, but the tissues contracted remarkably well, and the patient rapidly regained her strength and suffered much less inconvenience than might have been expected. This tumor was nourished mainly from the omentum, some of the vessels being 7 or 8 mm. in diameter. Another case is reported of a pedunculated myoma weaned away, so to speak, from the uterus, presenting the rather unique feature of a rope of omental vessels to the tumor 6 cm. in diameter. In the hardened preparation after removal, some of the individual blood-vessels are 1 cm. in diameter. A considerable series of such cases have been studied by Dr. Kelly and the author, and will be published at some future date. Other cases reported are one of death of fetus with suppuration and anterior perforation of the uterine wall, the pus being walled off by adhesions and the patient recovering after supravaginal hysterectomy; one of abdominal pregnancy in which a seven or eight months' fetus was carried for four years without causing serious symptoms, and one of chorioepithelioma with apparent recovery after hysterectomy. The article is illustrated.

Treatment of Traumatic Gangrene.—Van Buren Knott defines traumatic gangrene as that variety of gangrene following severe crushing injuries of the extremities complicated by virulent and often fatal sepsis. He discusses the unsatisfactory course pursued in many cases and gives his present method of treatment as follows: Being confronted with a case of traumatic gangrene of an extremity, estimate as exactly as possible the line between the diseased and healthy soft parts. Under anesthesia make a most careful and complete disinfection and cleansing of the skin, puncturing all bullæ and removing all discharges, envelop the gangrenous area in a sterile towel up to the line selected, and then, at this point, make a circular amputation, cutting through soft tissues and bone at the same level. Ligate carefully all bleeding points, including none of the perivascular tissue in the bite of either the forceps or the ligature. Leave the wound open, not introducing a single suture, and apply moist dressings of gauze saturated with salt solution, these dressings to be changed from two to four times in twenty-four hours, as the circumstances of the particular case demand. After seven to ten days, if the wound is perfectly clean and the condition of the patient favorable, the classic circular amputation may be made by dissecting up the flap already outlined and sawing the bone at the proper level. If for any reason the circular method may seem undesirable, any other procedure may be substituted, but in the class of cases under discussion a typical circular amputation will be found entirely satisfactory.

Eyestrain and Epilepsy.—H. O. Reik argues for the importance of eyestrain as a causal factor of epilepsy, and quotes extensively from Dr. Spratling's work on "Epilepsy and its Treatment," as giving unintentionally valuable evidence of this possibility. Reik says that if only 1 in 100 epileptics can be cured by relieving measures for eyestrain it would practically double the number of cures of epilepsy. He reports four cases in which epileptic attacks appeared to be entirely suppressed for considerable periods by the correction of optical defects, and also the notes of two others observed by Dr. J. F. Crouch of Baltimore. In some of these cases at least the temporary disuse of correcting glasses seemed to increase nervousness and to bring on a tendency of the original attacks. He does not claim, therefore, to remove the original nervous instability altogether, but to have removed the exciting cause. "The removal of the reflex excitant does not, of course, cure the disease; the predisposition is always there, and if the patient be again subjected to eyestrain the attacks will probably recur; or if the eyes be kept in perfect condition some other exciting factor, such as a pregnancy shock or great anxiety, may precipitate a convulsion." It is nevertheless necessary that the eyes, like all the other special organs, should be thoroughly examined by experts to insure the utilization of every possible means of relief from the attacks and for preventing aggravations of the underlying unstable conditions by such irritating factors.

The Lancet, April 20, 1907.

Scopolamine Poisoning.—A. W. Moore reports the case of a girl of four and a half years in each of whose eyes one drop of a one per cent. solution of scopolamine was dropped. The child soon became restless, and in one hour she was definitely delirious. Color remained good. The pulse was 80 and temperature normal. Later the delirium became more marked and was of a busy, happy type. She tried to get out of bed, had various hallucinations of sight, would warm her hands before an imaginary fire, etc.; would not eat, but took a little milk. This state lasted about eight hours, gradually ceasing during the night, although the child did not sleep. The next morning she seemed more rational, quiet, and obedient. About twenty-four hours after the instillation of the eye drops drowsiness came on. If the child was awakened she would immediately turn over and go off into a deep sleep. There was, however, no real coma, and in about two hours the child seemed well. A small injection of strychnine was given when she became drowsy. There were no disagreeable after-effects.

Some Indications for the Treatment of Cholera.—K. B. Choksy enumerates under this heading the destruction of the virus *in situ*, and has had good results with cyanide of mercury. He gives one-tenth of a gram in an ounce of syrup and water every two or three hours, according to the stage of the disease and frequency and character of the motions. The loss of fluid to the system is made good by saline transfusion, hypodermoclysis, or enteroclysis. The circulation is maintained and the renal function reestablished by the following, every two to four hours: Sodiosalicylate of caffeine, 2½ grains; sparteine sulphate, ½ grain; liquor atropinæ (B.P.), 1 minim, the whole in 20 minims of brandy. All food and dietetic alcoholic preparations must be cut off. Hot coffee, without milk or sugar, is freely given as often as the patient asks for a drink, and it quenches thirst far better than cold solutions. Then sweetened arrowroot may be given and milk gradually added. The patient must be carefully watched during the stage of reaction. An alkaline mixture with digitalis and nux vomica generally does well

here. Symptomatic treatment may be required for occasional persistent vomiting, diarrhea, prostration, or sluggish kidneys. Dry cupping is of special service. The foregoing plan of treatment has been tried in 395 cholera patients, 226 of whom were treated during the epidemic in India, 1900. With the exception of some 46 sporadic cases, the rest were treated during epidemic periods. The mortality rate was 51.39 per cent. as contrasted with a rate of 89 per cent. in the surrounding regions.

The Lymphatic System of the Stomach.—In the course of an elaborate article on this subject, J. K. Jamieson and J. F. Dobson note that the study of the spread of malignant disease of the stomach to the other groups of abdominal lymph glands is much facilitated by an accurate knowledge of the course of the lymphatic vessels. The groups of glands usually found affected in the late stages of the disease are the glands at the hilum of the liver, the glands around the celiac axis, the superior mesenteric glands, the biliary glands, the mesocolic glands, and the lumbar glands. There are no direct vessels connecting the stomach or any of the gland groups receiving direct vessels from the stomach with the glands at the hilum of the liver. These glands receive vessels from the liver and transmit them to the right suprapancreatic and biliary groups. In advanced carcinoma of the stomach they must become diseased either by retrograde infection along their efferent vessels or secondarily to a growth in the liver. The paths by which the middle suprapancreatic glands are affected can be easily followed: from the coronary groups, the subpyloric group, or the splenic group. They transmit efferent vessels not only to the receptaculum chyli, but also to the lumbar glands around the aorta and vena cava. It is obvious that these glands may readily become diseased by the direct transmission of cancerous emboli from the middle suprapancreatic glands. The superior mesenteric glands receive vessels from the subpyloric group. This group is frequently diseased, and infection will spread readily along its efferent vessels. It is not necessary to assume that the glands lying below the level of the celiac glands become diseased by means of a process of retrograde infection or secondarily to obstruction of the thoracic duct, or to the development of metastases in the liver. There are direct paths, as the authors have shown. The affection of the mesocolic glands is not so readily explained. They may become diseased by retrograde infection from the superior mesenteric glands to which their efferent vessels run; a more likely explanation is that the primary disease has spread from the stomach into the gastrocolic omentum, possibly to the colon or into the mesocolon, thus invading the lymphatic area draining into the mesocolic glands. The biliary group of glands receive direct vessels from the upper part of the pylorus, and by this path they may become affected.

British Medical Journal, April 20, 1907.

Oxyuris Vermicularis.—A. N. Davies calls attention to the use of quassia in an enteric pill, two grains coated with keratin. It is a useful adjunct to the employment of other remedies.

Salicylism and Epistaxis.—Referring to recently reported cases of nose bleed in grippe cases, E. Leach is inclined to think that the former may have been due rather to salicylates given than to the grippe poison. This manifestation of salicylism may be unattended with any head or kidney symptoms. It may be that only impure specimens of the salicylates cause nose bleed.

Hernia of the Gall-bladder.—A case is reported by H. B. Hanson whose patient was a Hindoo woman of fifty years. On the right side of the abdomen was a soft, round, tender swelling, diameter one and one-half inches, its center two inches to right of midline, and three inches below the margin of the ribs. She complained of having had indigestion for the last two months, and said that the swelling had appeared suddenly one month previously, when she was doing some heavy grinding. Pain, she said, had been present only ten days, but histories in Indian women are very unreliable. On operation below the subcutaneous fat and beneath the abdominal muscles was the fundus of the gall-bladder enclosed in a peritoneal sac. The edges of the stricture round the neck, formed by the abdominal muscles, were snicked, a few adhesions between stricture and sac and bladder and sac separated, most of the latter removed, and the fundus returned into the abdomen. Both the right and left lobes of the liver were enlarged. The stitches were removed in twelve days and the patient discharged two weeks later.

Intestinal Origin of Leprosy.—H. L. Clift notes that in certain parts of China where leprosy is common, there are lepers who sell eatables on the street. They and the food they sell are surrounded by flies, who come in contact with their sores. These flies may settle on fish, which in turn becomes contaminated. It makes, when putrid, an excellent nidus, and if eaten half-cooked some of the bacilli must certainly enter the gastroenteric canal in a living state. Now if this is true of fish, why is it not true, the author asks, of other eatables? Does not this explain, he continues, why Hutchinson's theory sometimes appears so plausible and at other times appears to break down? He means that the practice of eating putrid fish in a more or less raw condition is not essential to the spread of the disease. The bacilli can reach the intestine through the medium of other food also. Leprosy may be fairly common in a district and yet very little food be eaten there. Comparing the disease with tuberculosis, the author notes that in the former the bacilli are carried by leucocytes which lose their amœboid movement. In leprosy the bacilli have been found occasionally within white blood corpuscles; perhaps the lepra cells were originally leucocytes? The taking of common salt really seems to benefit the patient; this may be because of increased hydrochloric acid, which helps the digestive juices to destroy the germs, and the system is thus relieved from ingesting more *living* bacilli. Three points leprosy has in common with tuberculosis: There must be a predisposition, natural or acquired, in the patient; both may have a long incubation period; and both are incurable—the patient is said to be "cured" because treatment and environment have "stayed" the disease.

Calcium Salts in the Blood and Tissues.—The part played by the calcium salts in the blood and tissues is discussed by W. B. Bell with special reference to their influence in regard to female genital functions. He also adds a description of a simple method of quantitative analysis, for which he has described a special apparatus. There are, he says, three calcium periods in a physiological sense. First, the period of growth, when the young person or animal requires all the calcium salts obtainable for the formation and growth of the bony skeleton. Secondly, the period of reproduction, when a calcium equilibrium as regards growth is reached, and an "excretion" of the excess occurs. This is most obvious in the reproductive processes of women, when large quantities of the calcium salts are first given up to the fetus and then for the formation of milk, during which the menstrual function is in abeyance. Some observations the author has made seem to show that pregnancy is terminated when the fetus ceases to absorb (or receive) calcium salts from the mother's blood and a large accumulation occurs in her system, bringing about contraction of the uterine muscles. The third period is that of late life, when no calcium salts are required for the building-up processes or for those of reproduction. These salts then accumulate in the tissues, especially in the vessels (and it is interesting to note how rare this is in women in middle life), atrophy occurs, and the individual gradually declines.

Pulsus Bisferiens.—According to T. Lewis, this term is now applied to a form of palpably double pulse. It has two beats, the second of which is really a reinforcement of a prolonged systole. If we define this type as one which is double to the finger, it follows that every observer will have a standard of his own, dependent on the delicacy of his tactile sense. The author takes as his standard a sphygmogram in which the apices of the two waves are separated by a time interval of less than one-tenth of a second, and in which the second wave is not prominent. Lewis found such a pulse in thirteen out of twenty unselected cases of aortic regurgitation. This form of pulse has been referred to as suggestive of aortic stenosis with senile arterial degeneration. A point of interest is that a double beat is frequently more easily palpable and gives a more distinct tracing on one or the other side of the body. One type occurs in those cases in which there is great enlargement of the left heart associated with or caused by disease of the aortic valves or larger arteries, but there is no constancy between the double wave and the degree of hypertrophy or dilatation. One type is associated with arteriosclerosis, but in the other type this lesion is wanting. The author's views are illustrated by several pulse tracings. The pulsus bisferiens has been observed after the administration of digitalis. It has been noted also in pericardial adhesions or excess of fluid, and, lastly, in ballooning of the aorta

Berliner klinische Wochenschrift, April 15, 1907.

The Treatment of Chronic Bronchitis with the X-Rays.—Immelmann made use of this procedure in a series of cases following the suggestion of Schilling that the *x*-rays had an excellent effect in bronchitis and bronchial asthma of the chronic type. In the patients in whom the method was applied the results were excellent, the asthma being particularly benefited. The application is made for ten minutes on the anterior, posterior, and lateral aspects of the chest, and only a limited number of expos-

ures are necessary to produce a result. In cardiac asthma and that depending on a nervous basis no effect was observed.

Physical Measures in Nervous Diarrhea.—Tobias states that all forms of diarrhea respond to physical, and especially hydrotherapeutic measures, whether they are due to anatomical changes in the gut or exist without any pathological lesion. The nervous type according to the writer seems to be particularly benefited by physical measures. Three varieties of this condition may be distinguished according to the mode of origin. In the first we have to deal with some idiosyncrasy against certain articles of food. In the second, which constitutes the principal group, any nervous excitement will bring about an attack. Fright and fear are the commonest causes, although changes in the weather are often at fault. In the last class we have to deal with some reflex irritation from neighboring organs, such as a retroflexed uterus or disturbances in the sexual apparatus. There may be other associated nervous symptoms, or the diarrhea may be the only manifestation of trouble. Tobias has found that cool half baths, preceded by a few minutes' session in a steam or light bath. The temperature should not be reduced below 24° C. Cold douches and packs are also of value, but warm baths only serve to further soften the patient. A procedure of this kind should not be continued for more than three or four weeks, and then if necessary repeated after a sufficient interval. The diet is very important, contrary to the views of many, who claim that the nervous character of the disease makes any adherence to dietary rules superfluous. The food should be nourishing and of sufficient amount. Fats are particularly useful, as well as cereals, but meats should be restricted, and spices are not to be used. Alcoholic, as well as all other cold or carbonated drinks are absolutely contraindicated. Massage and gymnastics are only of value as a help to improve the general condition.

Münchener medizinische Wochenschrift, April 9, 1907.

Endocardial Murmurs.—Geigel calls attention to the difficulty of distinguishing at certain times between endo- and pericardial murmurs. He thinks that in fresh cases of endocarditis the murmur is produced by a rubbing of the edges of the valves similar to what occurs in a pleurisy. The segments of the valves are not properly approximated owing to the presence of excrescences, and one may therefor be taut, while the other is still more or less relaxed, resulting in a rubbing of one on the other.

The Bier Treatment of Mastitis.—Zacharias finds that this procedure is an excellent one for the purpose indicated, as in a series of thirty-three cases operative interference was found to be necessary in only two, and this was due to late application of the treatment. Among the advantages attending Bier's procedure is the fact that nursing need not be stopped during the treatment, and if it is on account of pain and tenderness the secretory activity of the breast is not stopped. The apparatus is best applied about thirty minutes at a time from two to three times daily, the globe being taken off and reapplied about every ten minutes. As a rule, it was not found necessary to keep up the treatment for longer than three or four days. When applied early the method affords very satisfactory results, and although it is very simple, the writer advises against permitting the patient to apply it herself, as the results of the treatment cannot be judged by the latter.

The Treatment of Anthrax.—Barlach describes a method which he has used successfully in a considerable number of cases. A deep groove is made with the thermocautery around the pustule, and the latter is thoroughly incised with the knife. The tension in edematous areas is relieved by extensive incisions, and around the entire circumference of the pustules injections of tincture of iodine are made. The affected areas may then be covered with compresses of bichloride. The procedure stated can be quickly carried out, and does not seem to be particularly painful. The results were excellent, and are ascribed by the author to the fact that the cauterization immediately limits the spread of the infection. The iodine seems to act as an antitoxic, although in what manner the writer is not prepared to say.

Deutsche medizinische Wochenschrift, April 11, 1907.

Radiographical Findings in Apical Tuberculosis.—Vierhuff refers to the fact that although very good results with this procedure have been obtained, it has not met with a sufficiently extended reception in the diagnosis of the early lesions of pulmonary tuberculosis. In contrast to the older methods, it is possible to demonstrate both superficial and deeper foci, which would give no physical signs under other circumstances. In doubtful cases it may even assume the importance of a positive bacteriological finding. The technique must necessarily be absolutely correct, and a thorough experience is necessary in order to properly interpret the findings. The writer cites a number of cases which show that thickening in the pulmonary tissue can be demonstrated by the *x*-rays before any auscultatory or percutory signs are present. In cases where the usual physical signs disclose the presence of the lesions, its boundaries can be much more sharply defined by the rays than by any other method.

Complex Hemolysin Derived from the Pancreas.—Friedemann details the results of some recent experiments which are of considerable interest. He found that among mammals it was possible to isolate hemolysins which are analogous to the poisons found in the venom of snakes and bees. These are lecethids, and may be secured from the discharge of a pancreatic fistula. It is also possible to extract a complex hemolysin with alcohol from the substance of this gland. The active principle of the pancreas acts like an amboceptor, for it may unite with the blood cells, but can be distinguished from the ordinary amboceptors by its high degree of thermolability. The hemolytic action of this substance is also manifested against the blood cells of the same species of animal (autohemolysis). The writer concludes that the pancreas contains a poison which is characterized by a paralyzing and hemorrhagic action, and is therefore very similar to the crotalus poison.

Tetrachlormethan as a Solvent.—Wederhake refers to the dangers attending the use of certain materials necessary for the solution of drugs or for other purposes. Among these the best known are ether, chloroform, and benzine. In cases where the skin has been cleaned with ether or benzine before the application of a cautery, severe injuries have been known to result. The writer suggests tetrachlormethan as a satisfactory substitute. This substance is obtained by the action of chlorine on boiling chloroform either in the sunlight or on the addition of iodin. It may also be prepared by the action of chlorine on bisulphide of carbon. This fluid constitutes an excellent solvent for bromine, iodine, oils, paraffin, rubber, resins, and tar, and at the same time possesses the advantage of not being inflammable. It penetrates into the deeper layers of the skin, and therefore acts as an efficient disinfectant when used in conjunction with iodine in solution. The following formula is proposed for the disinfection of the hands: iodine, 1.0; solid paraffin (43° C.), 0.5; tetrachlormethan, 100.0. The results are stated to be superior to those obtained with Furbringer's method.

French and Italian Journals.

Preventive Surgery in Epitheliomata of the Appendix and Mammary Gland.—L. Longuet states that in the course of examinations of specimens of the appendix that have been removed by operation some are found that are of a distinctly atrophic type, small, firm, fibroid, and containing islands of epithelium, which remain as vestiges of the old lining. These occur in persons over forty years of age. This epithelium is very apt to degenerate into a cancerous growth. The author believes that cancer of the vermiform appendix is of frequent occurrence. He advocates a preventive operation on the appendix after the age of forty, to relieve from the possibility of degeneration into cancer. In the same manner the degeneration of the mammary gland after the menopause exposes the woman to the dangers of epithelioma of the breast, a disease that can be cured if operated on in the period of inception, but that, owing to its insidious approach, is frequently not seen by the surgeon until it is so far advanced that operation, although successful at the time, results in the end in recurrence and death. In such conditions the author questions whether we should not be justified in making a subcutaneous operation for the removal of the gland tissue after the menopause to prevent possible degeneration. The objections to this procedure are that many women never suffer from the disease, and that there is no use in submitting to a surgical procedure for a trouble that may never occur. Recurrences after operation are given by authors as from 20 to 40 per cent. of all cases operated on. The operation could be limited to cases in which there was a suspicion of coming trouble. Either cancer is a general disease with local manifestations, in which case the treatment should be serotherapeutic or constitutional; or it is local and operation is the proper resource and preventive. The operation proposed is somewhat in the nature of vaccination, which has become general at the present day. A surgical vaccination will do away with many cases of epithelioma of the breast and appendix.—*Le Progrès Médical*, February 2, 1907.

Surgical Treatment of Puerperal Pyemia.—A. Faix says that puerperal pyemia will remain with us as long as criminal abortion exists. Its frequency and severity have not been lessened by any methods of treatment that have been adopted. Bacteriology shows that the germs invade

the uterus, and pass by way of the sinuses into the venous circulation, creating endovenous lesions that favor the formation of a clot. From this clot emanate septic emboli containing bacteria on whose degree of virulence depends the severity of the infection. This may be acute, with continued high temperature and frequent chills, having a rapid course and early metastases, and ending soon in death. Another form is much slower, showing the action of much less virulent bacteria. Soon after labor there is a septic endometritis, but it is not until some weeks later that irregular chills begin, each fresh chill indicating a fresh thrombosis. The germs penetrate to the beginning of the uteroovarian and hypogastric veins, and form thrombi, which by liquefaction become sources of fresh infections through the circulation. Ligation of thrombosed veins has been successful in the sinuses of the skull and in other locations, and it seems logical to expect that it will be of service here if undertaken before there have been metastases and diffusion of the infection through the general circulation. Infection of the great veins of the pelvis and parametritis are contraindications to operation. Opitz considers criminal abortion an indication for operation. Severe infections always occur after placenta prævia, manual removal of the placenta, or artificial delivery. Pulmonary embolism contraindicates operation. If the process has been successfully resisted by the system for some time it is reasonable to suppose that the infection is less virulent, and the hope of staying it is better. There must be a heart and kidneys in good condition to justify operation. When there is a hard cord running along the infundibulopelvic ligament we may be sure that the spermatic vein is involved. Absence of edema indicates that the large veins of the pelvis are not involved. As to the side that is affected we may be guided by the location of tenderness on pressure. The veins should be denuded carefully, ligated, and the diseased portions removed. Out of twenty collected cases thirteen died and seven recovered. We should operate promptly in acute cases, later in chronic ones.—*Gazette des Hôpitaux*, February 2, 1907.

Symptomatology and Early Diagnosis of Cancer of the Cervix.—Polosson speaks strongly of the necessity of early diagnosis of the cancer of the cervix, since delay allows the patient to pass into the inoperable stage. Cancer in the cervix occurs much earlier than cancer of the body of the uterus, being most frequent from forty to fifty years of age, and occurring as early as the twenty-first year. It does not affect the general health for a long time. It does not occur in virgins and is more frequent in multiparæ, lesion of the cervix as a result of delivery predisposing to cancer. Irregular hemorrhage before the menopause, or return of hemorrhage after it should lead to an immediate examination. Hemorrhage generally occurs after connection, a simple douche, or a violent movement. When a fetid, rose-colored discharge appears, the disease is already advanced. Pain is a late symptom, resulting from compression of the nerves in an involved broad ligament. Early diagnosis depends on examination of every case that has irregular hemorrhage, and the finding of an ulcerating, vegetating mass that is very friable and bleeds easily. In some cases there is a hard cervix, in which the ulceration is found in the canal. The uterine cavity should be explored and a fragment removed for examination to aid in diagnosis when necessary. Immediate operation alone will save the patient.—*Gazette de Gynécologie*, February 1, 1907.

Treatment of Surgical Tuberculosis at the Seaside.—Riccardo Sabatucci describes the benefits of treatment of cases of surgical tuberculosis by a sojourn at the seaside as of value in improving the general conditions as well as the local ones. The observation of these cases by the author has led him to change entirely his opinion with regard to the value of early operation in such cases. He now treats them by a sojourn in the open air at the seaside. Such treatment has been given for some years in France and Italy especially. The author's experience refers to the hospital at Anzio, which is located on a point of land 400 feet above the sea, in a villa formerly used by one of the popes, surrounded by a large and beautiful garden. The greatest benefits are received in glandular and osseous tuberculosis, and in those cases that have not undergone operation. The good results are to be had in eighty-four per cent of the cases. Only immobilizing apparatus was used, with drainage and scraping when necessitated by sinuses. The effect on the blood was marked, there being found by careful examination increase in the number of red corpuscles, diminution of the leucocytes, increase of hemoglobin, diminution of polinucleosis of neutrophiles, increase of eosinophiles, and diminution of lymphocytes.—*Gazetta Medica di Roma*, December 1 and 15, 1906.

Books Received.

While the Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will be promptly made of their receipt under this heading, it must be with the distinct understanding that its necessities are such that it cannot be considered under obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Progressive Medicine. A Quarterly Digest. March 1, 1907. 8vo, 280 pages, paper. Lea Brothers & Co., New York.

The New Hygiene. By Elie Metchnikoff. 16mo, 104 pages, muslin. W. T. Keener Co., Chicago. Price, $1.00.

Diseases of the Nose and Throat. By J. Bruce Ferguson, M.D. 12mo, 243 pages, illustrated, muslin. Lea Brothers & Co., Philadelphia.

Textbook of Psychiatry. By Dr. E. Mendel. 8vo, 311 pages, muslin. F. A. Davis Co., Philadelphia.

Dining and Its Amenities. 8vo, 470 pages, muslin. Rebman Co., New York.

Derrick's British Report, February, 1907. 64 pages. Paul E. Derrick, London.

Practical and Theoretical Esperanto. By Dr. Max Talmey. Universal Language Publishing Co., 62 W. 126th street, New York. Price, $1.00.

The International Medical Annual. Various contributors. 8vo, 644 pages, illustrated, muslin. E. B. Treat & Co., New York.

Psychology Applied to Medicine. By David W. Wells, M.D. 12mo, 141 pages, illustrated, muslin. F. A. Davis Co., Philadelphia.

Pediatrics. By Thomas Morgan Rotch, M.D. Fifth edition, rearranged and rewritten, 8vo, 1,060 pages, illustrated, muslin. J. B. Lippincott Co., Philadelphia.

Die Syphilis. Von Dr. Orlowski. 8vo, 37 pages, paper. A. Stuber's Verlag, Wurzburg.

Der Tripper. Von Dr. Orlowski. 8vo, 46 pages, paper. A. Stuber's Verlag, Würzburg.

Dr. Jessner's Dermatologische Vortrage für Praktiker, Heft 7. 8vo, 372 pages, paper. A Stuber's Verlag Würzburg.

The Nursling. By Pierre Budin. 8vo, 199 pages, illustrated, muslin. The Caxton Publishing Co., London.

Manuale Pratico Dell' Igienista. 32mo, 368 pages, illustrated, muslin. Ulrico Hoepli, Editore-Libraio Della Real Casa, Milano.

La Tubercolosi. Con Prefazione Del Prof. Augusto Murri. 32mo, 291 pages, illustrated, muslin. Ulrico Hoepli, Editore-Libraio Della Real Casa, Milano.

Surgery of the Genitourinary Organs. By J. W. S. Gouley, M.D. 8vo, 531 pages, muslin. Rebman Co., New York.

Principles and Application of Local Treatment in Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. 8vo, 130 pages, muslin. Rebman Co., New York.

Aids to the Diagnosis and Treatment of Diseases of Children. By John McGraw. Third edition, 16mo, 383 pages, muslin. Wm. Wood & Co.

Aids to Dental Surgery. By Arthur S. Underwood and Douglas Gabell. Second edition, 16mo, 126 pages, muslin. Wm. Wood & Co.

Aids to Medical Diagnosis. By Arthur Whiting, M.D., M.R.C.P. 16mo, 152 pages, muslin. Wm. Wood & Co.

Histological Observations on Sleeping Sickness and Other Trypanosome Infections. By F. W. Mott, M.D., F.R.S. 8vo, 45 pages, illustrated, muslin. Wm. Wood & Co.

Anesthetics and Their Administrations. By Frederic W. Hewitt, M.V.O., M.A., M.D., Cantab. Third edition, 8vo, 627 pages, illustrated, muslin. Macmillan & Co., New York.

Weiterentwicklung der Familiaren Verpflegung der Kranksinnigen in Deutschland Sett, 1902. Proffessor Dr. Konrad Alt. 8vo, 16 pages, paper. Verlag von Carl Marhold. Halle, a. S.

Le Cerveau et la Moelle Epinière. Par Ch. Debierre. 4to, 507 pages, illustrated, paper. Felix Alcan, Editeur, Paris.

Zur Lehre von der Zwillingsschwangerschaft mit Heterotopem Sitz der Früchte. Von Fr. von Neugebauer, Warschau. 4to, 168 pages, paper. Verlag Von Dr. Werner Klinkhardt, Leipzig.

Traitement Chirurgical du Cancer du Colon. Par le Dr. Joseph Okinczyc. 8vo, 212 pages, illustrated, paper. G. Steinheil, Editeur, Paris.

Essentials of Chemistry and Toxicology. By R. A. Witthaus, A.M., M.D. 16mo, 306 pages, muslin. Wm. Wood & Company. Price $1.00.

Book Reviews.

HANDBUCH DER SAUERSTOFFTHERAPIE, herausgegeben von Dr. MAX MICHAELIS, Universitaets-Professor. Berlin: August Hirschwald, 1906.

THIS book may well serve as an example of German thoroughness in going into detail, for we have presented here a volume of about 600 pages on the therapeutic uses of oxygen by a number of the best known medical men of Germany and Austria. The work is a manual and properly opens with an historical review of the subject from which we learn that the employment of this gas for medicinal purposes was practically coincident with its discovery. Priestly and Lavoisier both recognized the value of oxygen in restoring asphyxiated subjects. It was not until comparatively recent years, however, that the employment of oxygen in medicine was placed on a scientific basis, for it was natural that a reaction would follow the claims made for the substance as a panacea for all the ills. The chemical and mechanical difficulties which attended the production of the gas having been removed, it rapidly came into favor again as a therapeutic agent and is now quite generally employed within proper limitations. The book in question is divided into two parts, the first of which includes the physiological and experimental basis for the administration of the gas, the technique of the latter, and its indications. The second portion comprises details of its use in the prophylaxis and treatment of pulmonary diseases and in poisoning. Its employment in surgery, obstetrics, children's diseases, internal medicine, and other fields is discussed in a thorough manner and the work may be described as a most valuable book of reference in a field where such are infrequent.

LECTURES ON DISEASES OF THE LUNGS. By JAMES ALEXANDER LINDSAY, M.D., F.R.C.P. (Lond.), M.A., Professor of Medicine, Queen's College, Belfast; Physician to the Royal Victoria Hospital, Belfast; Consulting Physician to the Ulster Eye, Ear, and Throat Hospital, Belfast; The Ulster Hospital for Children and Women, Belfast, and the Coleraine Cottage Hospital; Examiner in Medicine in the Royal University of Ireland; Late President of the Ulster Medical Society and of the Ulster Branch of the British Medical Association. Second Edition. Enlarged and rewritten. New York: William Wood & Company, 1906.

IN this excellent revision of his work on diseases of the chest, the author has, with advantage, considerably elaborated a series of lectures on physical diagnosis and diseases of the lungs, wisely omitting the lectures on diseases of the heart contained in the first edition. The first few chapters the author devotes to a consideration of physical examination of the chest with reference to the lungs, and a brief discussion of radiography and radioscopy. In these chapters the author pays fitting tribute by frequent reference to the pioneer work of Laennec and Skoda on auscultation, which, as he points out, has been but little elaborated since the writings of these illustrious clinicians. A few chapters devoted to the study of pulmonary symptoms follow and within the limits of the work touch practically all of the salient points.

In his discussion of pleurisy, pneumonia, bronchitis, etc., the author is perhaps ultra-conservative, though, on the whole, little exception can be taken to the subject matter. A considerable part of the work is naturally devoted to the subject of pulmonary tuberculosis, and if one bears in mind that these lectures are not intended to replace more exhaustive treatises upon the subject, they will be found most valuable for the purpose of hurried reference. In the matter of treatment the author is somewhat old-fashioned and ambiguous. For instance, at the present day an author should be more specific and definite than to advise "suitable change of climate," "due regulation of nutrition," etc. It is probable also that many might take issue with the author's views on etiology, especially as regards "house infection" in tuberculosis. However, on the whole, the work is a valuable addition to the library of the practitioner or the student of medicine. It is adequately indexed, pleasant reading, and not too cumbersome.

HIGH FREQUENCY CURRENTS. Their Production, Physical Properties, Physiological Effects and Therapeutical Uses. By H. EVELYN CROOK, M.D., B.S., Lond., F.R.C.S., Eng., etc. New York: William Wood & Co., 1906.

THERE are very few books that come so apropos as this handy volume on high-frequency currents. This method of electrotherapy has become very popular within the last few years, among both general practitioners and specialists. While formerly a static machine was the height of a physician's electric equipment, nowadays one must possess a high-frequency apparatus in order to be up-to-date. The present volume gives a concise but quite comprehensive description of the apparatus used, the methods of application, the physiological effects, and the therapeutic value of the high-frequency currents. While the reader is supposed to possess an elementary knowledge of electrophysics, the technical parts of the subject are not so difficult that they cannot be grasped by any physician, even by beginners in electrotherapeutics. The book will repay close study and is quite sufficiently elaborate for physicians who do not wish to make electrotherapy a specialty, but who want to know what they are doing and why they are doing it when they apply the high-frequency current in their offices.

STÖHR'S HISTOLOGY, arranged upon an Embryological Basis by Dr. FRED'K T. LEWIS, Assistant Demonstrator of Embryology at the Harvard Medical School. From the Twelfth German Edition by Dr. PHILIPP STÖHR, Professor of Anatomy at the University of Würzburg. Sixth American Edition. Philadelphia: P. Blakiston's Son & Co., 1906.

STÖHR'S textbook on histology has long been considered one of the classics of German medical literature, but in adapting it to American needs the translator has arranged it on an embryological basis in order to meet the want for a book of this kind in schools where embryology is made part of the curriculum of medical studies. This has necessitated certain changes in the German text which have been made, however, with Prof. Stöhr's permission. Considerable attention has been paid to the nomenclature, the widely used system adopted by the German Association of Anatomists being employed, which favors the simplest Latin descriptive names and discards the numerous personal appellations formerly used. Since the cell constitutes the unit of development as well as of structure, it would seem perfectly rational to study histology, which is practically a study of cells or their immediate derivatives, from the developmental standpoint. And yet most textbooks on the subject are a mass of collected, independent facts which afford to the student a very confused idea of this important matter. Dr. Lewis' book may be commended as a valuable addition to textbook literature.

WOMAN. A Treatise on the Normal and Pathological Emotions of Feminine Love. By BERNARD S. TALMEY, M.D., Gynecologist to the Metropolitan Hospital and Dispensary, New York. For Physicians and Students of Medicine. With twenty-two drawings in the text. New York: The Stanley Press Corporation.

THIS volume, which is evidently a "labor of love" on the part of the author, is divided into eight parts, entitled respectively: Introductory, Evolution of Sex, Anatomy of the Genitals, Physiology, Pathology, Hygiene, Psychology, and Morality. It contains ninety-seven chapters, some of them less than a page in length, and deals with well nigh everything connected with the emotions of feminine love. There is certainly no lack of books treating of sexual matters, and the present volume is the result of the author's gleanings in this field of literature. In spite of the statement on the title page, we do not expect to see this book among those recommended to medical students in the catalogues of the various medical colleges, nor do we imagine that the professors in those colleges will take this book as the basis of a course of lectures, or that they will begin now "to impart to their pupils all their knowledge about the nature of things concerning Love that they have gathered in their long and extensive experience." We very much question the utility of books of this sort, for they are sure to fall into the hands of those to whom they will be apt to do harm. The well-instructed physician gains all necessary knowledge of sexual matters from purely scientific works.

A MANUAL OF PRESCRIPTION WRITING. With a Full Explanation of the Methods of Correctly Writing Prescriptions, a Table of Doses Expressed in Both the Apothecaries' and Metric System; Rules for Avoiding Incompatibilities and for Combining Medicines. By MATTHEW D. MANN, A.M., M.D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, Fellow of the N. Y. Academy of Medicine, of the American Gynecological Society, and Corresponding Fellow of the N. Y. Obstetrical Society. Revised by EDWARD COX MANN, M.D., Lecturer on Obstetrics, Medical Department of the University of Buffalo, Fellow of the Buffalo Academy of Medicine. Sixth Edition, Revised, Enlarged, and Corrected according to the U. S. Pharmacopœia of 1906. New York and London: G. P. Putnam's Sons, 1907.

TO those who need instruction in the matter of prescription writing this book will be serviceable. In this new edition, the chapter on Incompatibilities has been rewritten, and that on Doses has been revised. The volume is of handy size, and contains all that a student will want on the subject with which it deals.

Society Reports.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Seventh Triennial Session, Held at Washington, D. C., May 7, 8, and 9, 1907.

DR. REGINALD H. FITZ OF BOSTON, MASS., PRESIDENT, IN THE CHAIR.

(Special Report to the MEDICAL RECORD.)

Tuesday, May 7—First Day.

The Evolution of the Idea of Experiment in Medicine.—Dr. WM. OSLER of Oxford, England, read this paper. He said that the fact that man could interrogate as well as observe nature was a lesson slowly learned in his evolution. Of the two methods by which he could do this, the mathematical and the experimental, both had been equally fruitful; by the one he had gauged the starry heights and harnessed the cosmic forces to his will; by the other he had solved many of the problems of life and lightened many of the burdens of humanity. He traced the beginnings of experimental science from its foundation with the Sumarian race. These old Greeks had anticipations of nearly every modern discovery, and there were details of one fundamental experiment, that of the discovery by Pythagoras of the dependence of the pitch of sound on the length of the vibrating chord. The Greeks, however, did not add to their genius for brilliant generalization and careful observation the capacity to carry out experiments, and neither Plato nor Aristotle understood the value of experiment as an instrument of the progress of knowledge. Hippocrates had appreciated the fact more than any of his contemporaries, but even to him facts as obtained by observation were the beginning and end of the art. The great masters of the Alexandrine school were the first great anatomists, and they had an extraordinary quality of zeal for experimentation which, according to Celsus, led to the vivisection of criminals. Among the Empirics arose the science of toxicology and the study of poisons and their antidotes, and not only animals, but criminals were used to test the effects of poisons and the idea of protection by gradually increasing doses of the poison, and the use of the blood of animals rendered immune were understood. Galen was not a greater observer than Hippocrates, but he stood out in our history as the first physician who had a clear conception of medicine as a science. In brilliant experiments upon the heart and arteries he had almost demonstrated the circulation of the blood, and in his work on the nervous system he had anticipated the discovery of Bell and Marshall Hall, and laid the foundations for our knowledge of the physiology of the brain and spinal cord. In none of the writings of the Arabian school was there to be found any solid contribution to anatomy or physiology. Gradually, however, the paralytic-like torpor passed away, and independent spirits like Paracelsus defied all traditions and threw the doctrines of Galen and Avicena to the winds. Throughout the sixteenth century, however, there had been very little experimental work in medicine. Then came the instruments of precision in medicine with the construction of the thermometer by Sanctorius and the pulsilogum of Galielo. Contemporaneously with Sanctorius, Harvey had demonstrated the circulation of the blood, but neither Sanctorius nor Harvey had had the immediate influence upon their contemporaries which the stimulating character of their work justified. In the latter half of the eighteenth century experimental science received its greatest impetus through the work of Spallanzani, who demonstrated the chemical nature of the digestive process, and John Hunter, who was able to raise pathology into a science. In the beginning of the last century the art of observation had found its fullest development in the hands of the French school, by which the diagnosis of disease was put upon a sound basis, and in the forties Virchow revealed for the first time the true seats of disease. The last half of the century could be called the era of experimental medicine, and the great results had been along three lines—the discovery of the functions of organs, the discovery of the causes of disease, and the discovery of new methods of treatment. A single generation had witnessed a complete readjustment of our outlook on physiology, pathology, and practice, and this had all come from a recognition that experiment is the very basis of science. Only a beginning had been made, however, and there was not a department in practical medicine in which there were not innumerable problems awaiting solution, and what was needed was clinicians who could keep in close touch with physiology, pathology, and chemistry, and who were prepared to transfer to the wards through proper channels the knowledge of the laboratory.

Neurological and Psychiatric Diagnosis.—Dr. LEWELLYS F. BARKER of Baltimore, Md., said that no hard and fast line could be drawn between laboratory and clinical diagnosis; the clinic was the mother of the medical laboratory. The anatomical laboratory dated back three hundred years, but the physiological, pathological, and chemical laboratories were creations of the nineteenth century. The establishment of psychopathic laboratories now promised to be of great significance in the advancement of psychiatric diagnosis. The diagnosis of nervous and mental diseases had made but slow progress until very recent times. The relation of symptoms to lesions in neurology were more difficult to determine because of the difficulties in opening the brain and getting at the seat of the trouble. It was much easier to study alterations in the liver or kidneys than to investigate the lesions of the central nervous system, and yet, as had been said, a pin prick in such a part might cause more damage to the general system than the passage of a crowbar through another. Slow but sure progress, however, had been made by the study of autopsies. Helmholz's invention of the ophthalmoscope had done much to advance the science of neurology, and every neurologist now made use of it. The tendency of modern psychology was to become more and more objective and in this way only was it possible to obtain scientific results. The certainty with which a diagnosis in dementia paralytica could now be made was one of the great advances in psychiatry. Dr. Barker thought that a great impetus would be given to this work if psychiatric clinics could be established in connection with every hospital and medical school in this country and he expressed the hope that that would soon be done.

On Chemical and Biological Diagnosis.—Dr. ALFRED STENGLE of Philadelphia had been led to the conclusion that the work of the laboratory man, whether in chemistry or biology, must be constantly checked by the equally important work of the clinician, just as the work of the clinician requires the check of the laboratory worker. His results might be far more erroneous than those of the clinician, but they might be able to advance the science in a way that would never be possible by mere clinical observation. The introduction of chemistry into medicine had begun with the discovery of oxygen, when the possibility of estimating the oxidation going on in the living body was shown. It had been thought then that this would throw a great deal of light upon diseased processes, but so far as diagnosis was concerned the most important thing we had learned was that in diseases where oxidation is supposed to be reduced a reduced oxidation doesn't really exist, as in anemia. It had been thought that the amount of oxidation might be obtained by the studies of urea elimination, but the estimates of urea, without taking into consideration the question of absorption and the intake of food, were absolutely worthless. So far as the total nitrogen was concerned the same thing could be said. As to the production of uric acid and its estimation, fanciful theories of uric acid diathesis had been aban-

doned. As to the carbohydrate metabolism the presence of sugar in the urine was known to be an abnormal condition and when combined with certain clinical symptoms constituted the disease of diabetes. The most important principle that physiological chemists discovered, perhaps, was that the defence of the body against chemical poisons was due to a pairing with other substances in the body, as of one of the acids with an alkali; that urea and bile salts combined with other substances for their elimination. This theory of pairing had led to the discovery of the only genuine autointoxication of which we had any accurate knowledge, that of acid intoxication which occurred in a variety of conditions. In diseases of the stomach a great deal had been expected from investigations of the gastric juice, but the quantitative estimates of the stomach contents had not proven as valuable as studies of the motility of that organ. Conrad's method for diagnosis of typhoid the writer considered an improvement over the Widal reaction. As to tuberculin he thought the views of Dr. Trudeau deserved more general acceptance, namely, that if carefully used small amounts of tuberculin were safe and the diagnosis was greatly facilitated by its use. With regard to the opsonic index there could hardly be a positive expression of opinion as yet, and certainly the difficulty of making the examinations rendered the test of doubtful value to practitioners.

Physical Diagnosis.—Dr. Richard C. Cabot of Boston hoped that this Congress and the year 1907 would mark and end of the false and harmful distinction between laboratory and clinical methods of diagnosis, for the distinction could not be defined and did not, in fact, exist, although we attempted sometimes (and most disastrously) to approximate to it. There should be no diagnoses made merely in the laboratory and none merely at the bedside. The degree of exactness in any technical procedure depended wholly on the end to be secured. We might have too much exactness as well as too little. But, we could not have too much clearness in the expression of our results. Modern physical diagnosis showed (among others) two dominant tendencies: (a) to seek for and prize the most direct methods of examination; (b) to lay stress upon the present functional capacity of an organ rather than upon the present appearance of anatomical lesions. The writer believed that the oldest methods—inspection and palpation—were still the best. Among recent additions to our technical resources three could be mentioned as likely to stand the test of time. These were: (a) *x*-ray examination; (b) blood-pressure measurements; (c) palpation of the abdomen beneath the surface of the warm bath In the examination of sputa we had progressed from the complex to the simple. Reduced to its essentials, sputum work to-day meant a good look at the sputum in bulk, the judicious use of one's nose, and the search for tubercle bacilli. Curschmann's spirals, Charcot-Leyden crystals, fibrinous casts, influenza bacilli yielded no clues for diagnosis, prognosis, or treatment.

The Borderland of Medicine and Surgery. President's Address.—Dr. Reginald H. Fitz, Boston, delivered this address. He said that on the front of the building erected for the Harvard Medical School in 1883 were inscribed the names, Hippocrates, Celsus, Galen, Vesalius, Paré, Haller, Harvey, Sydenham, Hunter, Bichat. Of all the names in medical history these had been deemed the most worthy of such distinction, as each of these men represented a new epoch, and the influence of each in his turn had been of undying influence in the progress of medicine from the age of Pericles to the present day. Medicine had become divided and subdivided into its various specialties and advance had been made now in one direction, then in the other, but the unity of medicine had ever remained paramount and whatever had benefited a part had always proved an advantage to the whole. Dissensions had lessened, distinctions had become recognized, and a borderline had been traced, shadowy to be sure, but ever changeable and surrounding a territory open to each and productive for all. The speaker called attention to some of the landmarks in this borderland of medicine and paid tribute to those who had been instrumental in establishing them and indicated some of the means by which this region should continue productive. He traced the advance of medicine from the Hippocratic period, four or five centuries before Christ, when but one healing art was recognized, that of medicine, when the physician was conversant with disease only and there was no surgeon, through the Alexandrine period when the separation of surgery from medicine began, through the Roman period when Celsus recorded the state of medical knowledge at and before his time, during the period when Galen who lived a century after Celsus, when the distinction between medicine and surgery became well established, through the period when the Arabs preserved and maintained the best of Greek medicine, the further developmnt of medicine and surgery as fostered in the schools of Salernum and Montpelier and later by the Universities of Italy and France, which later gave way to the Universities at Naples, Bologna, and Padua, down to the present time, when surgery had become a science. To John Hunter, anatomist, physiologist, pathologist, and surgeon, was due, more than to any other man, the scientific foundation of surgery as a science. The effect of Hunter's work was greatly enhanced by that of Bichat, equally distinguished for breadth of mind, intensity of application and genius for generalization. After the construction of the microscope and the progress made in chemistry, the recognition of pathological histology and of cellular pathology, scientific medicine, and scientific surgery became definitely established and the practitioners began to appreciate the value of the broader training. The center of scientific thought became transferred to Germany and became lustrous chiefly through the teachings of Virchow, pupil of Johannes Muller and of Schonlein. The discoveries in medicine during the latter half of the nineteenth century had added more to the welfare of man, as manifested by relief from suffering and disease, than the sum of all known efforts in this direction since the origin of man. Common to medicine and surgery they had been alike beneficial to each and had resulted in a redistribution of the borderland of medicine and surgery, adding more and more to the domain of surgery, while opening fresh fields to the labors of physicians. With due appreciation of the great benefits that had arisen from the surgical invasion of the borderland, there still existed sufficient reason to progress slowly and cautiously, as operative success was not necessarily a justification for operation, as had been recognized by those who were brought in contact with the failures. The successful invasion of the borderland by the surgeon was due mainly to the fact that surgery had become science. Thorough training in the laboratories was the best preparation for contact with disease and the more thorough the preparation of the physician and surgeon the more skillful and beneficent would be their art and the more exact and productive their science.

Wednesday, May 8—Second Day.

The subject for discussion was "The Comparative Value of the Medical and Surgical Treatment of the Immediate and Remote Results of Ulcer of the Stomach."

Indications for, Methods of, and Results to be Expected in the Medicinal Treatment of Ulcer of the Stomach.—Dr. John H. Musser of Philadelphia opened the discussion of this subject, and, after reviewing voluminous statistics, concluded that gastric ulcer is a medical disease. Gastric ulcer with complications and sequelæ is sometimes a surgical disease, and if perforation occurs it becomes a surgical affection at once. If hemorrhage occurs acutely it is rarely a surgical affection; if repeated and chronic, it is surgical. If the ulcer is productive of perversion of secretory function alone, it remains a medical

affection. Inasmuch as hyperchlorhydria is in part a neurosis, the secretory function can be balanced chiefly by medical, dietetic, and hygienic measures. Even if pyloric spasm attends the hypersecretion and hyperacidity, it does not necessarily take the case beyond medical care. It is wrong to submit such a class of cases to operation, unless motor disturbances come to the foreground. If the symptoms and physical signs of retention from obstruction, dilatation, hour-glass contraction, or adhesions supervene and persist, the case is a surgical one. If the symptoms of gastric ulcer become continuous in spite of medical treatment, and incapacitate or threaten life, if hemorrhage recurs and secondary anemia arises, it is a surgical disease. Such cases are always attended by organic sequelæ. The extraordinary frequency of chronic gastric ulcer with sequelæ requiring operation at the present day is due to neglect of the treatment of an ulcer in its incipiency. Statistics show that most cases are operated on between the thirtieth and fortieth year, and have an ulcer history of five to ten years' duration. The evidence is not sufficient to show that gastric ulcer is a forerunner of gastric cancer. After the surgical procedures of necessity are carried out, the case must be treated medically. Medical treatment must be continued over a period of four months at least; hygienic and dietetic over a period of years; the best permanent relief and the most complete restoration to health occurs in those cases which recover after perforation of the gastric ulcer; an operation which if possible could approach this accident in an anatomical result would be the best.

Dr. Charles G. Stockton, Buffalo, New York, said that Dr. Musser had assembled the evidence that recent experience had made possible in the medical treatment of peptic ulcer, and pointed out what advance had been made, and, to decide in view of all these facts the most judicious course to pursue, without attempting to press overmuch the importance of any particular method of treatment, was a task. Did we permit ourselves to take a brief in championing some method with the zeal that success in a comparatively small group of cases sometimes suggests, we would undoubtedly fail. It was very important at this period not to array against each other the comparative advantages of medical and surgical practices. Rather there should be made the deliberate effort so to view the matter that we might concur in deciding upon the place of each in the treatment of this disease. We should attempt to exclude certain cases that closely resemble in symptomatology peptic ulcer, but in which, despite the occurrence of pain, tenderness, spasm, vomiting, and hemorrhage, no ulcer actually exists. He denied that it was always true, as had been asserted in some quarters, that these cases do in fact suffer from undiscovered ulcer or fissure, because oozing of blood might be seen through the turgid, deeply-congested mucosa, that showed no lesion even under the magnifying glass, and because superficial erosions or fissures in an otherwise healthy stomach are rapidly cured by nature, and are practically without symptoms. Those ulcerated processes dependent upon special infections, like syphilis, tuberculosis, and pyemia, should be excluded from the consideration. There remained two distinct divisions of peptic ulcer; first, the more frequent type, the acute, which occurs in younger patients and appears often in chlorotic young women, and, second, the type more commonly developing in older patients, those past middle life. The prevention of gastric ulcer could be summarized thus: maintain a calm nervous system in a well-conditioned body; the medical treatment; to make a positive diagnosis begin treatment early, and carry out with painstaking attention the details for a long time; general rest; in some cases discreet feeding, in others periodical starvation, depending for support upon frequent small enemata of normal salt solution. For the control of hemorrhage, in addition to rest, local treatment through the stomach tube, using ice water, adrenalin solution, and gelatin water. In irritating hyperacidity one should use local general sedatives and antacids. To relieve hypertension and spasm of the stomach, in addition to suitable drugs, the external applications of Von Leube. Treatment should be continued long after apparent cure and the stools studied for occult blood. The indications for surgery were for the relief of results of gastric ulcer rather than for the cure of the disease itself.

The Contribution of Surgery to a Better Understanding of Gastric and Duodenal Ulcer.—Dr. William J. Mayo, Rochester, Minn., divided ulcers of the stomach or duodenum into two classes, indurated or nonindurated. The indurated ulcer involves all of the coats of the stomach or intestine, and its existence may be demonstrated from the exterior of the organ. All of the notable contributions of surgery to our knowledge of ulcer concerned this group. Surgical investigation had shown, first, that ulcer of the duodenum in the upper inch and a half is as common as ulcer in the whole of the stomach. Second, that the majority of ulcers, called pyloric, have their origin in the duodenum. Third, that the male sex is more frequently afflicted with ulcer of the stomach and duodenum (62 males to 38 females) by reason of the fact that 77 per cent. of duodenal ulcers are in the male, true gastric ulcer being about even in the two sexes, 52 males to 48 females. Fourth, that cancer frequently has its origin in ulcers. In 54 per cent. of 69 cases of cancer of the stomach submitted to resection by Dr. Chas. H. Mayo and the writer in 1905-06, cancer could be demonstrated to have had its origin in ulcer. Nonindurated mucous ulcer, also described as clinical or medical ulcer, gives no evidence from the exterior of the stomach or duodenum of its existence, and unless the interior be successfully explored the diagnosis remains in doubt. Nearly all the failures in the surgery of ulcers concerned this group. The existence of acute nonindurated mucous ulcer was shown by operations for acute perforations, hemorrhage, and post-mortem investigations of deaths from these causes. Chronic nonindurated mucous ulcer was certainly very rare. The large majority of cases so diagnosed were in reality nonsurgical conditions, such as pyloric spasm, atonic dilatation, gastroptosis, and the gastric neuroses. If a diagnosticated chronic nonindurated mucous ulcer (clinical ulcer) cannot be demonstrated at the operating table, it probably does not exist, and operation should not be done on an improved hypothesis, unless complications such as hemorrhage, perforation, or obstruction coexist.

Dr. John C. Munro, Boston, had made an analysis of 150 cases. Of these 87 showed gross ulcer of the stomach or duodenum; 16 belonged to the class of so-called medical ulcer, where no gross ulcer could be found at operation; 25 showed well-marked adhesions, without evidence of ulcer; 15 were the so-called neuroses, and 9 classed as ptosis, spasm of the pylorus, etc. As to the question of immediate gastroenterostomy in perforation, he believed the anastomosis shortened convalescence and tended to obviate the necessity of secondary operations. The simpler the technique and the nearer we followed anatomical lines the better the result. The different methods of operation were gone over in detail. Excision of the ulcer area, which is also the cancer area, he considered the ideal operation after middle life. The decision upon the type of operation depended upon the individual case and the experience of the operator. The simplicity and cleanliness of the clamp and suture operation spoke highly in its favor, and he thought was to be preferred to any other. When relief was obtained in these cases it excelled that in almost any other class of diseases, besides relieving the chances of engrafted malignancy.

Dr. A. Jacobi, New York, in discussing the subject, said that ulcers of the stomach, both acute and chronic, were frequent at every age. There were those whose experience permitted them to say that from two to five per cent. of the population suffer from it. Brinton collected 226 cases, of whom 2 were under 10 years of age; 18, from 10 to 20; 43, from 20 to 30; 38, from 30 to 40; 38, from 40 to 50;

32, from 50 to 60; and 32, from 60 to 70. Similar results had been obtained by Cruveilheir and by Rokitansky. A late case had been published by Immerwohl, the patient being four years old, with a chronic ulcer and nephritis, dying of uremia. Ulcer of the stomach, in its most dangerous form, was not infrequent in the infant. Between the seventh and thirteenth year was not at all rare. Most ulcers were found on the posterior wall near or in the small curvature; the next locality of predilection being the neighborhood of the pylorus, while some were found in the cardia or in the fundus, in the anterior wall and the large curvature. The size might be no larger than the head of a pin, detected with difficulty at autopsy, while they might be the size of a hand. As to the occurrence of hemorrhage his own observation, extending over a period of fifty-four years, of private and hospital practice, coincided with that of Leube, that it occurred in less than one per cent. His experience as to perforations also coincided with that of Leube that they occurred in about one to two per cent. As to the mortality reports the vast differences ranging from 2.4 per cent. to 50 per cent., proved for the thousandth time that statistics may be the most deceptive and most irrational method of dealing with any clinical question. The experience of the general practitioner in a large practice among the poor or among the rich, among men or among women, the general physician with a family practice only or an office practice preeminently, the consultant who is called in to see bad cases only, the stomach specialist, the surgeon in general practice, the hospital physician in whose wards bad cases only take refuge, the hospital surgeon who never sees anything but hemorrhages and perforations, gives a variety of observers but a variety of cases. Exclusive hospital physicians and surgeons have little experience with the average ulcer of the stomach; theirs being only an experience with bad or fatal cases. Their statistics referred to hemorrhages and perforations, not to chronic ulcer of the stomach. The main symptoms of gastric ulcer were given as pain, hyperacidity, and sometimes hemorrhage. The presence of ulcer required constant alkalinization of the stomach, the administration of an alkali at long intervals being insufficient. He gave an alkali before every meal and at intervals of two hours for months, and preferred those which contained no carbonic acid, which inflated the stomach. The best was magnesia, magnesium oxide, three to four grams a day. Bismuth subcarbonate, not subnitrate on account of its gritty condition, might be safely added. The speaker felt positive from what he knew of the frequency of gastric ulcer in general practice and of the long time it takes negligent or indigent patients to nurse their illness up into the stage of hemorrhage or perforation that it was often cured and prevented from the necessity of getting into the medical or surgical hospital ward. Conservative surgeons admitted that seventy-five per cent. of gastric ulcers were cured by internal treatment. After the operator had performed his duty the case became again that of the practitioner and there might be an organ of doubtful utility, for the creation of a funnel was not the restoration of a normal stomach.

Dr. E. G. Janeway, New York, believed that the medical men and the surgeons were now pretty well agreed on this subject; certainly they were in entire accord as to perforation; where there was perforation operation was indicated and indicated at once if the best results were to be expected. The same was true of stenoses and obstruction of the pylorus with cicatrices. He did not feel that lavage was advisable in these cases and referred to two instances where death had been produced by its employment. He had the same objection to the use of subnitrate of bismuth that Dr. Jacobi had mentioned; it could be seen under the microscope to consist of crystalline flakes with sharp edges, and why it had remained so long a favorite remedy he could not understand; he had had one case in which the sharp flakes were found in the passages. He preferred the subcarbonate or subgallate. He did not advocate the use of subnitrate of silver in these cases, as there was no certainty of touching the ulcer with it. He advocated Trueau's method of requiring the treatment to extend over a period of two years. The patient should be put on his guard and told that he has a chronic disease for which the treatment must be kept up for a long time.

At the conclusion of the meeting the Secretary, Dr. Wm. H. Carmalt, was presented with a silver loving cup by the presidents of the Congress and presidents of its constituent associations in appreciation of his faithful and untiring efforts for the success of the organization.

ASSOCIATION OF AMERICAN PHYSICIANS

Twenty-second Annual Meeting, Held in Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

FRANCIS P. KINNICUTT, M.D., NEW YORK, PRESIDENT, IN THE CHAIR.

(Special Report to the MEDICAL RECORD.)

Tuesday, May 7—First Day.

The President's Message.—Dr. FRANCIS P. KINNICUTT of New York City, in formally opening the meeting, emphasized the mutual dependence of the science and practice of medicine, as would be clearly illustrated by the scientific program to be presented to the association at this time. He briefly reviewed the professional careers of Dr. James Stewart of Montreal, Dr. Isaac Edward Atkinson of Baltimore, and Dr. Thomas Lattimer of Baltimore, all deceased since the last meeting of the association.

The Connection of the Occipital Lobes and the Present Status of the Cerebral Visual Functions.—Dr. ADOLF MEYER of New York City presented this paper, which was illustrated by a number of lantern slides. The following points were developed: (1) Isolation of the geniculocalcarine trace (two cases). (2) Subdivision of sagittal marrows and their course. Marking of the calcarine area. (3) Degeneration of the occipital efferent path and the geniculocalcarine tract, following degeneration of the calcarine cortex. (4) Marchi-degenerations from a small wound of the postparietal cortex, involving the optic radiations: (a) Afferent character of the external sagittal marrow; (b) efferent character of the internal sagittal marrow (contributing to the lateral part of the crus); (c) subcortical (external sagittal) fibers towards the motor area; (d) no fibers to the frontal lobe. (5) Anatomical data for clinical correlations.

Dr. L. F. BARKER of Baltimore emphasized the importance for diagnostic purposes of such studies as Dr. Meyer had outlined. He believed that it was only through such careful study that any definite knowledge could be obtained concerning the cerebral visual functions.

Certain Features of the "Nervous Breakdown" with Special Reference to Treatment.—Dr. JAMES J. PUTNAM of Boston, Mass., in this paper, emphasized the view that the acute "nervous breakdown" really typified processes which were characteristic of more chronic neurasthenic conditions, but which afforded especially good chances for observation, because the illness ran its course, practically, under the physician's eye. The so-called "traumatic neurosis" was perhaps the most striking example of this acute breakdown, being characterized by its period of predisposition, followed by periods of nervous shock, of apparent absence of symptoms, of gradually increasing illness, of an apparently stationary stage, of convalescence and recovery. Similar processes were frequently observed as a result of nontraumatic shock, of strains during school and college life, and many analogous influences, while diminutive periods of like type were fre-

quently met with as intercurrent events in the course of chronic illnesses. The controlling influence in the causation of these states, and the controlling means of treatment, was the mental state of the patient. To the consideration of this factor the paper was chiefly devoted. The means of increasing the patient's available stock of mental energy were among the principal therapeutic points considered. In this connection Dr. Putnam emphasized the importance of the different methods of reeducation, as developed by S. Weir Mitchell and others. While philosophy and ethics could not be presented to the patient in a technical way, yet if physicians were more trained in this department of learning, their efforts would be more effectual. A strong plea was made for such training. The relation between the mental processes and the physiological functions having to do with nutrition, etc., was also emphasized.

Dr. John K. Mitchell of Philadelphia asked for enlightenment in the management of the acute stage of "nervous breakdown."

Dr. Adolf Meyer of New York was of the opinion that the abstract statement that physicians should teach philosophy and ethics to patients would lead to a misconception on the part of many physicians of the whole movement. As modern psychology had arisen largely out of the experience of physicians, so the philosophy and ethics of the future would find a large source of facts in the experience of physicians. Taken from this point of view—not of abstract ethics, but the formation of habits, the arranging of definite régimes of habits and reaction types—the suggestion was important in the treatment of neurasthenics and other mental disturbances.

Dr. Charles L. Dana of New York City thought that in the majority of instances of "nervous breakdown" if the patient were put under ordinary common-sense environments recovery would take place within six months or a year. Many cases of neurasthenia, however, were not merely nervous breakdowns, but were psychoses. A certain percentage of persons were of a nervous disposition, and in the event of a breakdown such an individual would have a psychosis; this, however, would run its course. The majority of neurasthenic cases, put under proper mental, moral, and physical surroundings, would recover.

Dr. A. Jacobi of New York, speaking as a physician and not a neurologist, would examine such patients from an additional point of view. The cases he had seen had, almost without exception, suffered from mild cardiac changes. Upon exertion on the part of the patient a feeble murmur could invariably be heard, and this physical change, whether of the nerves or muscle of the heart, should be treated as well as the psychical condition.

Dr. S. Weir Mitchell of Philadelphia called attention to the fact that a nervous breakdown might be brought on by mental conditions and emotional disturbances, and sometimes by a physical breakdown.

Dr. Putnam, in closing the discussion, agreed with all the speakers. Replying to Dr. John Mitchell's question concerning the treatment in the acute stage, in traumatic cases he had found that rest and encouragement had considerable effect, though sometimes little could be accomplished thereby. He agreed with Dr. Meyer that the whole matter should be put on the simplest and most matter-of-fact basis possible. In a measure he agreed with Dr. Dana's suggestion that these accidents and strains initiate a psychosis which must run its course. This psychosis, as Dr. Jacobi suggested, was not a pure psychosis, but had its physical side.

The Clinical Study of Aphasia.—Dr. Charles L. Dana of New York City presented, in this paper, the analysis of a series of cases of aphasia, clinically studied, with the object of securing a grouping of the aphasias as they are seen at the bedside, with a description, so that such groups might be recognized by the physician and taught to the student. The views of Professor Pierre Marie were discussed in the paper. Dr. Dana presented a method of diagrammatically representing the type of aphasia upon certain charts devised by himself. He thought it would be best to teach students to make the classification of aphasia on an anatomical basis, to find out the kind of aphasia the patient had and then locate it, in the temporal, frontal, parietal, or occipital lobe, as the case might be.

Dr. W. M. Thompson of New York City, from his own clinical experience, was not inclined to attach much importance to the cases of aphasia detailed by Marie in which it was claimed that each one was accompanied with motor symptoms, showing that the lesion had extended to the motor region.

Dr. James J. Putnam of Boston was glad to hear Dr. Dana put himself on record as recognizing the various types of aphasia.

Dr. Morton Prince of Boston did not accept Marie's view that all aphasias are intellectual aphasias expressing themselves in this or that direction.

Dr. Dana, in closing the discussion, said that he had not brought out Marie's point of view, although it was difficult to treat the subject without reference to it. Marie had not proven that the frontal lobe is not a language center; there was much absolute evidence that it was, clinical and pathological reports leaving little doubt on the subject. Aphasia was not sensory, nor was it motor, but sensorymotor.

The Presence of Inflammatory Masses in the Abdomen Simulating Malignant Growths.—Dr. E. G. Janeway of New York City presented this paper, citing in detail a number of cases in which masses, discovered by palpation and ordinary examination, or by these and laparotomy, were considered malignant, but disappeared later. Of the cases mentioned two occurred in connection with ulcer of the stomach, the others in different places in the abdomen. He did not advocate exploratory laparotomy in these cases, but thought it better to wait. Many of the cases of tumors reported as having disappeared under treatment with *x*-ray and other measures he believed to owe their disappearance to time.

Dr. William Osler of Oxford, England, said these cases might be divided into the following groups: those associated with the gall-bladder, those associated with the stomach, the appendicular cases, and those in which the trouble is in the cecum. He had had his attention called to cases in which there was a mass in the left iliac fossa. This might be due to thickened glandulæ epiploicæ. This was found to be the case in two instances. In another case there was thickening due to perforation by a foreign body. He agreed with Dr. Janeway's attitude concerning surgery, and yet in many instances operation was very satisfactory, being followed by disappearance of the tumor.

Dr. Charles Bond of Richmond, Indiana, cited a case in which it would not have been well if the patient had fallen into the surgeon's hands. The tumor disappeared in the course of two or three years.

The Etiology of Acute Pancreatitis.—Dr. H. U. Williams of Buffalo presented this paper, which detailed experimental work done by Dr. Williams and Dr. F. C. Busch, also of Buffalo. The part played by gallstones in the production of acute pancreatitis was considered, and cases of this kind analyzed.

Dr. Eugene L. Opie of New York City, in discussing this paper, said he was surprised to find that the number of cases of acute pancreatitis in connection with gallstones, as given in the extensive literature collected by Dr. Williams, was so small. This was probably due, as suggested, to the fact that the bile ducts were often neglected in the examination.

The Calcium, Magnesium, Phosphorus, and Nitrogen Balances in a Case of So-called Phosphatic Diabetes.—Dr. L. F. Barker of Baltimore, Md., read this paper, which was prepared jointly with Dr. C. Voegtlin of Baltimore. The paper included the results of a metabolic study in a

case of so-called phosphatic diabetes. A woman who for years had suffered from dry skin, cracking of the heels, and nervousness, and who had had constantly urine of high specific gravity and high acidity, was placed upon Folin standard diet, and the calcium, magnesium, nitrogen, and phosphorus balances studied. The metabolism was abnormal in that the urine on a standard diet presented a very high organic acidity not due to uric acid, to phosphates, or to lactic acid.

Dr. WILLIAM OSLER, under whose care the patient had come from time to time, said that the chief point of interest was the fact that the symptoms would lead anyone to the diagnosis of diabetes, and yet repeated examination failed to discover any trace of sugar. He had always regarded it as a case of prediabetic condition, and expected each time the patient presented herself to find sugar in the urine.

Dr. A. E. TAYLOR of Berkeley, California, detailed experiments which he had carried out upon himself, with a calcium free diet. The symptoms were those of lassitude up to the sixth day, when there was marked muscular twitching, loss of sleep, and extreme irritability. Realizing at this stage of the experiment that the danger point was being reached, he returned to the normal diet, the equilibrium returning immediately.

Dr. BARKER, in closing the discussion, said the salts were just as important in the food as were the other elements. He emphasized the importance of maintaining the balance of the inorganic substances. Working along this line, it might be found that neuroses and psychoses had an organic basis.

The Relations Between Diabetes and Pregnancy.—Dr. AUGUSTUS A. ESHNER of Philadelphia maintained, in this paper, that diabetes was uncommon during pregnancy in proportion as it was uncommon during the child bearing period. Exceptionally it had recurred during successive pregnancies. Pregnancy rarely occurred in diabetics, partly because diabetes in women is most common after the menopause, partly because of the debilitated general state of the diabetic patient, and partly because of the functional derangement and the structural alteration of the generative organs. The complication of the one condition with the other usually increased the gravity of both. Often the fetus died *in utero*, or premature labor set in, the fetus dying at birth or shortly thereafter. The liquor amnii had been found increased, and, in some instances, also to contain sugar. The mother sometimes died of the disease shortly after labor. In Dr. Eshner's case of diabetes the sugar disappeared from the urine with the inception of pregnancy, remaining absent until after the birth of a macerated fetus at term and reappearing shortly afterward.

(*To be continued.*)

AMERICAN GYNECOLOGICAL SOCIETY

Thirty-second Annual Meeting, Held at Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

DR. CLEMENT CLEVELAND OF NEW YORK, PRESIDENT, IN THE CHAIR.

Tuesday, May 7—First Day.

Metastatic Carcinoma of the Tube and Ovary in Cancer of the Cervix Uteri.—Dr. FRED J. TAUSSIG of St. Louis, Mo., read a paper on this subject, in which he concluded that mild, chronic inflammatory conditions of the tube and ovary were frequently met with in cancer of the cervix. Whether this was merely coincidence or not he would be unwilling to say. On the other hand, cancerous metastases in these organs were extremely rare in cervical cancer. In fact, he could find no record of such metastasis in an operable case. In carcinoma of the body, however, they were not infrequently seen in tube or ovary, or both. Hence it would seem logical to advise the removal of both tubes and ovaries in every case of cancer of the body. If, however, the patient was still five to ten years from the time of the menopause, and the site of the cancer be in the cervix, the saving of one ovary would be attended with practically no risk to the patient and might relieve her of the disagreeable symptoms of the premature menopause. Since this could be done without interfering with the complete removal of the lymphatics directly tributary to the cervix, he believed it logical to leave one ovary, or a portion of one ovary, in every operation for cervical cancer in a woman under forty years of age.

Dr. J. WESLEY BOVEE of Washington, D. C., said metastases in cancer of the uterus were by no means common, and that as the disease spread metastases occurred. This emphasized the fact that in the cases brought to the attention of the gynecologist he was helpless in the treatment of cancer of the uterus; that in the cases in which the conditions would ordinarily offer great hope of success we would find that metastases occurred in those structures which we would not remove, the result being that cancer recurred or continued unsuspected. At best the treatment of cancer of the uterus was not hopeful, notwithstanding the claims of radiographers and the demonstrators of radium, etc., and those who did the most radical surgical operations. He was not prepared in the present light of surgery of cancer of the uterus to accept the suggestion of the essayist, that it is safe to leave a portion or even one ovary in extirpating cancer of the uterus. His own conviction was that the operation should be as radical as it could be consistent with saving the life of the patient.

Dr. LAPTHORN SMITH of Montreal, reported a case of cancer of the cervix in which operation was done early by another surgeon, with every possibility of a complete recovery of the patient and freedom from recurrence; yet this woman came to him a year later with no sign of recurrence in the vagina, but with two distinct masses in the ovaries which could be readily felt. He considered it too late to do anything in an operative way. This case made such an impression on him that ever since, when doing vaginal hysterectomy, he always removed the tubes and ovaries. He did not think it was safe to leave an ovary or a piece of an ovary when there was such a tremendous risk of recurrence.

Dr. REUBEN PETERSON of Ann Arbor, Mich., desired to place himself on record as voicing the sentiment of Dr. Bovee against the leaving of one ovary, or part of an ovary, in the operation for cancer of the uterus. This was a step backwards, and was not in accordance with the progress that had been made in the last ten years in the treatment of cancer of the uterus. He was not convinced that the leaving in of one ovary, after the removal of the uterus, helped the patient, so far as the menopausal changes were concerned. He had been unable to see much, if any, difference where an ovary had been left in, and where it had been removed, after the removal of the uterus for cancer.

Dr. WALTER M. CHIPMAN of Montreal doubted whether it was a wise thing to leave even one ovary, or even a part of one, after the removal of the uterus for cancer, no matter where the cancer was situated. While it was true that the ovary was not in the direct path of the lymphatic distribution of the pelvis, yet so great and so rich was the anastomosis that he thought the leaving of ovaries must always be a risky procedure.

Dr. TAUSSIG, in closing the discussion, said he anticipated that most men would hardly agree with him as to the advisability of leaving a portion of an ovary in the class of cases under discussion; but he believed, however, from the statistics that the procedure was not at all unsafe, and it seemed to him that it was just as logical to advise the removal of the appendix as to advise the removal of

the other ovary. The appendix was a useless organ; the ovary—at least, in the opinion of some—helped to make the menopausal disturbances less severe in women under forty years of age, if left.

A New Method of Version.—Dr. A. F. A. King of Washington, D. C., spoke of the correction of transverse presentations by the hitherto unrecognized factor of thigh-pressure upon the abdomen, induced either (1) by posture, or (2) by manipulating the lower limbs. The former, he said, was Nature's method of preventing and correcting cross-presentations; and in primitive races was daily exercised by the squatting posture during defecation, etc. Squatting was not a symmetrical proceeding; the two thighs did not press equally. One foot was flat upon the ground and in advance, the other in the rear, rested only on its toes. The thigh of the front foot would press high up upon the breech end of the fetus; the thigh of the rear foot would press low down upon the head, forcing it from the iliac fossa into the pelvic brim, as was illustrated by diagrams.

The Superiority of Primary Over Secondary Cesarean Section; Feasibility and Advantages of a Predetermination of the Method of Delivery.—Dr. Edward Reynolds of Boston spoke of primary operations being determined upon in advance of labor and performed at an elected date, or with the advent of the first pains. Secondary operations might be performed as soon as a test in labor had shown that the natural powers were likely to fail and before serious exhaustion set in. Late operations were considered in the light of a last resort. Late sections were already discredited, while secondary sections were still the most frequent class. He gave the statistics of primary, secondary and late sections of the last ten years. Primary section was a very safe operation, while secondary section was only moderately safe. Late section was attended with a high mortality. In general, the mortality was roughly proportionate to the amount of labor endured before operation. Decision before labor was a matter of great moment. The doubtful cases were constantly narrowing and should be done away with. Accurate prediction of expected difficulty required: estimation of the shape and relation of the pelvis (measurements alone were entirely unreliable); of the probable muscular character of labor; of the size and ossification of the head. Methods of estimation of the maternal obstacles required knowledge of the maternal powers (these could be foretold with considerable accuracy) and of the mechanical character of the head. He emphasized the value and importance of obtaining a previous history in multiparæ. He submitted the following classification: A, undoubtedly cesarean section cases; B, cases clearly capable of delivery without the cesarean; C, doubtful cases.

As to the treatment, in class A he would resort to primary section; in class B labor and the intrapelvic operations. In class C a final examination under ether at the date of election, the method finally decided on, and decision adhered to. The predetermination of methods was work for experts only. Lastly, he pointed out that a more friendly relation between the specialist and the general practitioner was desirable.

Pubiotomy.—Dr. Henry D. Fry of Washington, D. C., read a paper on this subject. Pubiotomy was a satisfactory operation, so far as the operation itself went, for enlarging the pelvic girdle in moderate degrees of pelvic contraction. It was easy to perform and could be employed in simple flat pelves with a conjugata vera of 7 or 7½ cm. Separation of the severed bone for 4 or 5 cm. was usually sufficient to enable easy extraction with forceps. The principal objection to the operation was the difficulty encountered in the after-treatment. These difficulties were little, if any, less than those which brought symphyseotomy into disrepute. The pelvis must be immobilized and the patient kept in the dorsal position several weeks. Maternity institutions could overcome the objection to a large degree by the use of a special bed, as the hammock suspension bed described by Ayres. Williams used the Bradford frame after two of his operations. Jewett employed an ordinary hospital stretcher, "the poles of which were lashed to the top rails of an iron bedstead. A trapdoor was provided for the dejecta." Montgomery recommends a pelvic sling suspended from the ceiling and attached to a compound pulley. Ordinarily, after pubiotomy and symphyseotomy, the evacuations of the bladder and bowels were attended with discomfort, and it was a hard task for the nurse to keep the parts clean, which was the more important after secondary operations where the patient was already septic and the soft parts contused and lacerated. In consequence, therefore, of the unsatisfactory convalescence after pubiotomy, the operation would obtain in this country a limited field of usefulness as an elective operation. Cesarean section offered a substitute free from this objection, and its indications would be extended to embrace these cases of minor degrees of pelvic contraction. With a head movable above the inlet, and one which would not descend by suprapubic pressure, that operation should be performed primarily. When the head was moulded and engaged, forceps might be tried tentatively before resorting to section. The indications for pubiotomy might be stated as follows: A living child and some contraindication to cesarean section. The usual conditions presented were: a moderate degree of pelvic contraction, which had been unrecognized generally, ineffectual efforts employed to deliver with high forceps, the woman exhausted, and infection probably started. If the child were dead, craniotomy; if alive, pubiotomy, in spite of the objections raised against it. It was better to have a live woman at the end of a tedious convalescence than a dead one after a "successful" operation.

Induced Labor and Delivery by Abdominal Section.—Dr. Edward P. Davis of Philadelphia said that among obstetric operations there was none which in selected cases gave better results than the induction of labor. This was especially true in disproportion between mother and child, whether caused by pelvic contraction, excessive fatal size, or prolonged pregnancy. Private patients were especially benefited by this operation, as they usually came early under the care of the obstetrician and gave him a better opportunity to study their cases than did hospital patients. Private patients who had passed through a disastrous first confinement were often safely delivered in subsequent labor by the induction of labor. Experience, however, and the study of statistics showed that induction of labor was not without serious disadvantages; it was a process uncertain in duration, often exposing the patient to considerable loss of rest and to prolonged suffering. Labor was rarely terminated without some active interference, and this was most often to be accomplished through a cervix poorly prepared for dilatation. Some of the methods employed to terminate induced labor produced unfavorable presentations and positions of the fetus, increasing the risks to mother and child. While it was possible, considering the interests of the mother first, to have a low mortality and morbidity rate for her, the best results so far published gave a very considerable mortality and morbidity for the infant. He believed that the induction of labor compared in gravity, when the interests of both mother and child were considered, with other major obstetric operations. The author then cited six cases to illustrate the statements he had made. He strongly urged the importance of conducting cases of induced labor in such a manner that the patient should be in favorable condition for a major operation, if necessary. He did not believe it justifiable during induced labor to make efforts at delivery by forceps or version unless the conditions were such as to make it reasonably certain that these operations would be immediately successful. If engagement of the head did not develop during induced labor the use of the forceps

was a dangerous procedure. If the operator was sure of the size and contour of the pelvis, and reasonably certain of the comparative size of the fetus, version, where the head did not engage, was the safer operation. The writer would not resort to delivery by section in a case where efforts at delivery by forceps or by version had been made. He believed that with careful antiseptic technique it was possible to introduce bougies within the uterus, or even to employ dilating bags without infecting the patient. These procedures should not cause lacerations and should not essentially wound the epithelia of the genital tract. It was impossible, however, to make tentative traction with forceps, or to practice the manipulations necessary in attempting version without producing lesions in the genital tract through which infection might enter. It was his practice, then, to decline celiohysterotomy in all cases where forceps or version had been tried. In severely septic cases, the child being dead and unsuccessful efforts having been made at delivery, he believed that the Porro operation would give the best results. In cases where forceps or version had been tried without success, if the child was living, he believed that the consultant should again try which ever of these procedures he thought best, utilizing Walcher's position if advisable; failing in these craniotomy should be done. As to pubiotomy, a sufficient number of cases had ben published to show that the operation, like all other surgical procedures, was not without its dangers and disadvantages. A maternal mortality of from 5 to 7 per cent. and a fetal mortality of 17 per cent. indicated its severity. As to delivery by abdominal section, all things considered, and especially when the fetal mortality was taken into consideration, the claims of abdominal section for safe delivery of mother and child could not be disregarded. He did not believe that at the present time a dogmatic opinion could be formed concerning any one method of delivery. Another factor of importance was the value placed by parents upon the life of the child.

Dr. Egbert H. Grandin of New York said the conclusions and line of argument advanced by Dr. Reynolds were in accord with those which he presented in a thesis read before the society seventeen years ago entitled, "A Plea for the Elective Cesarean Section." He contended then that this operation was ideal, and although seventeen years had elapsed since, he had not seen fit to change his position. As to pubiotomy, he would advise it in preference to symphyseotomy, although he had not done the former operation, but had performed symphyseotomy twice, with living mothers and living children, and, so far as he knew, with no disability on the part of the women.

Dr. Lapthorn Smith of Montreal condemned pubiotomy. Last summer he performed two cesarean sections, and could testify to the surprising ease with which the operation was done in both cases.

Dr. James Clifton Edgar of New York was uncertain as to where to draw the line between Class A and Class B in the cases discussed by Dr. Reynolds; that is, the antepartum cases, and the early intrapartum cases. It occurred to him that if Class B, or the early intrapartum class, was moved a little forward, and the women not allowed to stay in labor quite so long, instead of a mortality of three per cent., as reported by Dr. Reynolds, it would approach one per cent. in the antepartum cases. Where cesarean section was undertaken in the latter part of pregnancy there was difficulty in securing good drainage. Pubiotomy did not appeal to him, although he had never done it. He had, however, done six symphyseotomies.

Dr. Robert A. Murray of New York thought that eventually, in the vast majority of cases, obstetricians would gradually come to the point where they would let women go to labor prepared to do a cesarean section, and not interfere with high forceps, or version, or any other method that would produce traumatism of the cervix and possibly cause infection which would defeat the result to be gained from a clean cesarean section.

Dr. Robert L. Dickinson of Brooklyn, N. Y., said the only cesarean section case he lost was a young woman who suffered from toxemia throughout her pregnancy. She was operated on at the beginning of labor pains, but gradually died from a lack of resistance after an easy cesarean section. For many years obstetricians had had control of the second stage of labor, and with cesarean section, forceps, and version the obstetrician could do what he chose. But the obstetrician had stood helpless before the difficult dilatations and before badly developed cervical conditions. He thought it was unobstetrical to insert a bougie into the uterus, as it might loosen the placenta and carry infection. We could not be sure of absolute cleanliness.

The papers were further discussed by Drs. E. W. Cushing of Boston, George Gellhorn of St. Louis, Mo.; Seth C. Gordon of Portland, Me.; Malcolm McLean of New York; Willis E. Ford of Utica, N. Y.; Philander A. Harris of Paterson, N. J., and the discussion was closed by the essayists.

(To be continued.)

AMERICAN SURGICAL ASSOCIATION.

Twenty-eighth Annual Meeting, Held in Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Special Report to the Medical Record.)

Tuesday, May 7—First Day.

The Address of the President.—Dr. Dudley P. Allen of Cleveland took as the subject of his address, "the training of the surgeon." He said that during the past generation the progress of surgery had been tremendous, due mostly to the introduction of anesthesia and of asepsis. It did not seem possible for another generation to make as great strides. The main problem at present that needed solution was in the line of the nonoperative treatment of cancer. A very practical problem that was always with us was, not only how to impart to students our knowledge of what has been done, but how to advance our knowledge in the future. In country districts there would always be a demand for men with a general training but in the populous centers there would always be need of the specialists, and it was of them that this paper specially treated. The specialists should have a thorough training in all medicine, so that the surgeon might be a competent judge as to the advisability of operation, and should be able to make a diagnosis for himself as to the region of the operation, as, for instance, in distinguishing the location of pus collections in the lower pleural, upper abdominal, or liver regions. The surgeon should be able to make a diagnosis of early pregnancy in order to avoid operation on the gravid uterus; he should be able to appreciate ear conditions and their relation to brain work, etc. All of these were needed even though he limited his work to general surgery. Above all he should be able to say when operation was the best treatment. Some surgeons took advantage of every possible surgical condition, and operated with the consent of the patient as the only other necessary requirement. The public had not yet learned that the benefit of the hospital depended on its administration and on the surgeon. As to the methods of instruction of the medical student opinions varied greatly. Some believed that didactic work was essential, others that it was useless, some would teach in large clinics, others only in sections; some said that operative work on the cadaver was essential, others that it only begot carelessness. Some said that the only operative work worth doing was on mammals. Some said that the elective course in the medical school was desirable, others that it was bad. The schools all differed as to the method of instruction, but all agreed that four years were not enough for specialist training, that

a specialist developed in four years of medical study must be very narrow. The end might be attained in various ways but all needed training in two branches—surgical pathology and surgical diagnosis. They needed to be taught to write accurate histories, to do which they must make accurate examinations. Section work was necessary to enforce accurate knowledge. The student by recitation, discussion, and written report, must show what he had learned. The student should be taught to be not merely a consumer but also a producer of knowledge. To advance knowledge he must understand the pathology of his diseases both gross and microscopical, and on that base his diagnosis. Laboratory teaching was most important for the teaching of pathology, but the laboratory diagnosis must not be considered sufficient to set aside the clinical diagnosis. Again it must always be borne in mind that the laboratory diagnosis was no more certain than the man behind the microscope. The student must learn to apply his laboratory work to his clinical material. It was desirable to remember the teachings of the earlier days, for our modern anesthesia and asepsis had tended to lead to laceration of the tissues and delay in operation. It was necessary to keep up the clean-cut and the rapid work. The tendency to omit all didactic work from the fourth college year was a bad one, not only for the student, but also for the teacher; because the teacher became wearied of repetition of the same work to section after section and finally the better men gave it up, and it fell to the lot of the younger and less experienced members of the teaching staff. Dogmatic teaching was always popular but the broad clinician as a teacher was also always needed. It was time enough to begin the study of a specialty after the end of the fourth year. In Canada five years would soon be required, and in Europe six years was demanded for the general training of the medical man. There was no training better than a hospital service, and that long enough for the student to become competent to do operative work. It would be a great advance if the latter years of a man's study could be spent in the hospital and in the study of the pathological work. To answer in a single word "How shall we train our surgeons," we must answer "thoroughly." And the test might well be made by a board of national examiners which would soon create an international recognition of that standard. The instruction should be thorough and broad, there should be a long hospital service, and postgraduate study. There should be a national standard of proficiency.

Lumbar Anesthesia.—Prof. E. KUSTER of Marburg, Germany, the guest of the association, read this paper. He said that lumbar anesthesia was used largely in Germany but seemed to be distrusted in America. Quincke of Kiel gave the initiative to lumbar anesthesia in 1891. In the speaker's clinic lumbar anesthesia was used for all operations in and below the pelvis, and also for many operations on the kidney, gall-bladder, and stomach. Regarding the injection of the fluid he spoke of the desirability of puncturing the filum terminale of the spinal cord. The injection was made in the middle line, the needle being introduced first alone and carried through the dura when the cerebrospinal fluid would begin to flow. The fluid was allowed to flow until clear if the first few drops were bloody, though if the needle allowed the escape of pure blood a second puncture was desirable. The escape of fluid was the only sure way of indicating entrance into the dural canal. At times he let 15 c.c. flow before injecting the anesthetic. The solution used was a 5 per cent. solution of novocaine with suprarenalin, supplied by the pharmacist in sterile solution in sealed ampoules. For operations on the uterus and pelvic organs they used 2 c.c., and for abdominal operations 3 c.c. Anesthesia appeared in a few minutes after the injection. There were two methods of extending the anesthetic area upwards, one by putting the patient in the elevated pelvic position for ten minutes or longer after the injection, the other ("head obstruction") by putting a bandage around the neck, so increasing intracranial pressure. The bandage was applied before the injection, and on removal afterwards the anesthetic ascended with the blood, and anesthesia of the abdomen was obtained with very litle anesthesia of the legs. Paralyses were very rare, for the anesthetic did not readily circulate in the space anterior to the ligamentum denticulatum of the spinal cord. If the patient was turned on his abdomen paralyses were promptly obtained. The operation could be begun after five to ten minutes. At the time of opening the peritoneal cavity slight pain might be evidenced, but in disarticulations of the hip very little shock was observed. The period of anesthesia lasted about forty-five minutes, after which nausea usually was felt. After an hour and a half true pain appeared, and there might be weakness in the legs sufficient to interfere with walking. These would last a few hours. Headache occurred in 12 per cent. of the first three hundred cases; this was relieved immediately by lumbar puncture, removing 10 c.c. of fluid. Another unpleasant after-effect was paralysis of the bladder, rectum, or legs, but this generally disappeared in from 4 to 8 days. There was a postoperative pneumonia in one case in which ether was also given. There was fever in one case. A great advantage of the method was that it completely prevented postoperative aspiration pneumonia. It did not upset the general health; it was safe in delicate people and those suffering from disease of the heart, lungs, or kidneys.

Dr. T. W. HUNTINGTON of San Francisco said that two years ago he began to use lumbar anesthesia with great doubts; that he tried it systematically and got results similar to Prof. Kuster's. He used the anesthetic in solution in the spinal fluid, removing about two c.c. of the fluid, dissolving in that the required dose of the drug, and reinjecting it. He considered the fluid used as the solvent as a very important element. He rarely had any headaches after puncture. There were no psychic effects. There had been no postoperative vomiting or shock, but only postoperative comfort. He believed that lumbar anesthesia had come to stay.

Dr. BRISTOE of Brooklyn said that he had tried the method a few years ago, using cocaine. Some of his patients had had persistent severe headaches; in about one-third of the cases he had not had satisfactory anesthesia; and in six of his fifty cases there had been delusions of persecution lasting two or three weeks. He modified the technique slightly by making an incision through the skin before inserting the needle.

Dr. SCHMIEDEN of Bonn, Germany, said that they had been eminently satisfied with the method at Bier's clinic and used it in all operations below Poupart's ligament, and in all kidney cases.

Dr. WILLY MEYER of New York said that he believed lumbar anesthesia was not used in the United States because of the reported bad effects, the bad technique, and the fact that in America we had special anesthetists who had improved the results of general anesthetics. He had used lumbar anesthesia for seven years, trying various cocaine salts and allies, and had also tried magnesium sulphate, but this latter drug caused paralysis of bladder and rectum. He had stopped using the method, however, after having had two deaths from tropococaine, which, after boiling, had split into atropine and hyoscine. He believed the method the best for cases of diabetic gangrene and prostatic hypertrophy.

Dr. G. E. BREWER of New York asked regarding the mortality of this method. He said that he had been going on the assumption that the mortality was one in five hundred as reported at a recent Paris congress, and had not used the method as he considered the risk too great.

Dr. W. G. MACDONALD of Albany said that he considered novocaine as bad as the other cocaine preparations, and he had seen one death on the table from the very preparation used by Dr. Kuster, and that in the dosage of

but two-thirds of an ampoule. He had seen vomiting with every drug used.

Dr. Kuster, in closing the discussion, said that he knew of no statistics for general anesthetics that took into account the deaths from the postoperative pneumonias and other complications; but that even if lumbar anesthesia did have a mortality of one in five hundred it would still be as safe as the general anesthetic.

Continuous Passive Congestion in the Treatment of Delayed Union of Fractures.—Dr. J. B. Roberts of Philadelphia read this paper. He said that he used an elastic bandage above the seat of fracture to cause passive congestion in the cases of nonunion when he was satisfied that there was no interposition of tissue between the two bone fragments. He had used the method also in recent fractures to hasten the union. At the same time he used diet, exercise, and fresh air, and frequently calcium salts, and tried also to get the psychic effect of encouragement of the patient. He thought the ulcers present in old compound fractures might be delayed by the congestion treatment, but that this delay was not to be considered in view of the acceleration of bony union. The application of the bandage should produce a cyanosis of the part distal to the bandage, but should not cause pain. It might be necessary to change it to allow for variations in position of the limb and consequent swelling.

Mr. Robert Jones of Liverpool, in discussing this paper, said that the same method had been used by Mr. H. O. Thomas of Liverpool fifty years ago, and he had personally used it in seventy or eighty cases since then with great advantage. He applied a rubber band above and another below the fracture, increasing the duration of the application as the patient could stand it.

Resection of a Sound Femur for Gigantism and Asymmetry.—Dr. R. W. Johnson of Baltimore read this paper. He proposed resection of the sound femur in women of unusual height, who by this height were conspicuously deformed. He would resect two to two and a half inches from the middle of the femur, uniting the bones preferably by square ends, and operating on one leg at a time. He also suggested resection of the femur when there was a limp from one leg being longer than the other.

Dr. J. B. Roberts of Philadelphia, in discussing the subject, said that he had recently proposed the same treatment to a candidate for the army who was debarred by a limp.

A New Method of Rhinoplasty, by Means of One of the Fingers.—Dr. J. M. T. Finney of Baltimore read this paper, in which he described a palstic nasal operation after the bridge had been lost by congenital syphilis, and in which there was absence of the bony framework and very thin skin covering. He reported two cases in which he had done the operation, showing diagrams and photographs. He chose the ring finger of the left hand as the one most easily spared, and after removing nail, matrix, and skin from the dorsum of two phalanges and the entire skin on the distal phalanx, he inserted the finger through a slit in the columns, making no incision in the skin of the bridge of the nose. After two weeks he amputated the finger at the metacarpophalangeal joint, flexing the proximal phalanx on the other two to form a new column, and leaving the two distal phalanges to support the bridge. Later small plastic operations united the soft parts, but not the bony parts. One great cosmetic advantage was the absence of scars.

Dr. C. A. Powers of Denver said that he remembered a somewhat similar case operated on by Dr. Sabine in New York in 1870, in which the result had been very satisfactory.

Treatment of the Posterior Capsule of the Thyroid in Thyroidectomy.—Dr. C. H. Mayo of Rochester, Minn., read this paper, which was based on 375 cases of thyroidectomy. He spoke of the anatomy of the capsule of the thyroid, showing layers of the capsule between which lay the recurrent laryngeal nerve, pressure upon which often produced paralysis of the vocal cord. He spoke of the parathyroids as lying behind the thyroid on the capsule, two on either side, the upper one being near the larynx. They might be in the capsule and be removed with it in extirpation of the gland. He operated always with local anesthesia and morphine, the patient being in the reversed Trendelenburg position. After the capsule had been opened the gland was brushed toward the median line to avoid taking with it the posterior capsule. He was careful to check all hemorrhage and to drain by a separate incision. In his series there had been one case of tetany and five cases of increased hoarseness. He was careful to save the posterior capsule and thus avoid many of the dangers of thyroidectomy. Dr. Mayo presented photographs of the patients operated upon and of the pathological specimens, both gross and microscopical.

Dr. W. S. Halstead of Baltimore said that one could not tell how often tetany would ensue and that therefore while he removed a large portion of the gland he never excised it all. He had had only one case in his own experience, but had seen more in the operations of others. Recent injections of the thyroid arteries had demonstrated that the parathyroids got their blood supply from the thyroid arteries and principally the inferior one. Only two of the eleven cases injected showed blood supply to the parathyroids from the superior arteries. Therefore he ligated the vessels well inside the gland.

Aneurysmal Varix; a Case of Pulsating Exophthalmos, and Two Cases of Enormous Dilatation on the Cardiac Side of the Wound.—Dr. G. T. Vaughan of Washington, D. C., presented this paper. In the case of pulsating exophthalmos the diagnosis was clear and the treatment was the only subject for consideration. Compression of the internal carotid arrested the pulsation and relieved the murmur, and so the vessel was tied. The patient developed paralysis on the second day and died, but no other form of treatment seemed available. In the two cases of varix on the iliac veins the tumor was on the proximal side of the communication between the vessels. In one patient with varix of the carotid, who died under ether, the swelling was in the jugular vein. Dr. Vaughan sought an explanation of the occurrence of the dilatation on the cardiac side of the communication and asked if it was the rule.

Graduated Vertical Traction in Its Application to Congenital Dislocation of the Hip.—Dr. O. H. Allis of Philadelphia presented this paper and showed an apparatus for the application of the traction to any measured degree, the traction being made by a screw and registered by a spring balance. The force was applied from a framework that allowed of full motion of the hip-joint during traction. After the complete relaxation of the muscles by the traction the apparatus was removed and the reduction of the dislocation was completed by gentle manipulations.

(*To be continued.*)

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Third Annual Meeting, Held at Washington, D. C., May 6, 7, and 8, 1907.

(Special Report to the Medical Record.)

GENERAL MEETING.

The President, Dr. Hermann M. Biggs of New York, in the Chair.

First Day, Monday, May 6.

Address by the President.—Dr. Biggs said that two years ago the first annual meeting of the National Association for the Study and Prevention of Tuberculosis was held in Washington under specially favorable auspices. The Association had completed its first year of successful

work, having been organized in Atlantic City the previous year, with a comparatively small membership, under the presidency of Dr. Trudeau. During the year, through his efforts, a considerable sum of money had been contributed for the support of the Association, and a permanent organization had been effected, with the installation of Mr. Livingston Farrand as Executive Secretary, and the establishment of permanent headquarters in New York City. The national crusade for the study, prevention, and treatment of tuberculosis had been given a very distinct impetus during these three years by the work of the Association, and popular knowledge and interest in the subject had become much more widespread. A large number of local, municipal, and State associations had been organized throughout the country, in addition to many associations especially designed to promote the establishment and maintenance of local sanatoria for the care of incipient pulmonary tuberculosis. In practically all of the older States of the Union there now existed some local or State organizations, and the general knowledge and interest in the movement was steadily extending. In most of these associations physicians had been the leading spirits in their organization, as was the case in the formation of the National Association. It had been, and was, still far more difficult to enlist the cooperation of laymen in this work than that of the physicians, and it was particularly this interest and cooperation of the laymen which was now needed to advance more rapidly the cause. The membership of the National Association now numbered about 1,300, including a large percentage of the leading physicians of the United States, and many prominent laymen. The formation and development of the local and State associations, in the very nature of things, often detracted materially from the interest which their members took in the National Association, for these local associations were concerned in extending relief in their immediate neighborhood, and had a far more personal interest. It was also considered desirable in the early history of the National Association that the membership should be most carefully scrutinized, in order that during this period particularly no persons should become members who were likely in any way through their conduct to discredit the Association or impair its reputation or usefulness. Therefore, the efforts to increase its membership had not been as great as they might have been, and outside a few of the Eastern States its representation was very small. It was believed that with the general interest which would be aroused in the subject of tuberculosis by the coming meeting of the International Tuberculosis Congress in Washington in 1908 the membership of the National Association should and could be rapidly increased five or ten-fold within the next year, and one of the first objects and efforts of the members during the coming year should be to add to the membership by personal solicitation, directed not only to physicians, but to laymen who were prominent in various localities of the country, and who, by their position, influence, and contributions, could materially aid in extending the work of the National Association. Up to this time, Dr. Biggs said, but little had been done in attempts to initiate or influence legislation with reference to tuberculosis in various cities or States, and this he believed was the line of endeavor which should now be actively followed by the National Association. In the attainment of these purposes its influence should be paramount. Not only should its efforts be directed to the initiation and encouragement of legislation, but when such legislation had been obtained, its influence and support were not less needed for the enforcement of the laws enacted. Legislation should include not only measures designed for the administrative control of tuberculosis, but also measures directed to the establishment of municipal dispensaries and of local and State sanatoria and hospitals for the treatment and care of the tuberculous poor. The movement toward the establishment of State sanatoria had gained considerable impetus, and it should be rapidly extended, and the annual appropriations for the extension and establishment of such institutions should in many States be materially increased. The attitude of the sanitary authorities generally toward the National Association and its work had been somewhat disappointing, for while there had been notable exceptions, the municipal and State health officers throughout the country as a whole had not up to this time taken any very active interest in the work of the Association. The United States was very far behind in respect to the efficiency of its sanitary organizations as compared with those of Great Britain or Germany. Unfortunately, here there was no central authority, and in a majority of the States the State Boards of Health had but limited jurisdiction and small appropriations, which often served for little more than the registration of vital statistics. The health officers were not generally appointed because of their knowledge or interest in sanitary affairs and their peculiar fitness, but on account of their personal or political affiliations. There was no institution in the United States, so far as he knew, in which a complete course of instruction was given for the purpose of fitting medical men to become medical officers of health, and the degree of Doctor of Medicine was the only requirement for eligibility. It would seem as if we had now progressed far enough along the path of higher civilization to expect and require that sanitary affairs in every locality should be administered intelligently, judiciously, and in the interests of all the people of the community by those who had special training in such matters, so that a consistent sanitary policy might be everywhere continuously followed.

Report of the International Congress on Tuberculosis, 1908.—Dr. Lawrence F. Flick of Philadelphia read this report. He stated that the International Congress on Tuberculosis came into existence in Paris in 1898; it reconvened in Berlin in 1899, again in Naples in 1900, in London in 1901, and finally, as an International Congress in the full sense of that term, in Paris in 1905. It was organized by the leaders of the crusade against tuberculosis for the purpose of directing the movement and keeping it under control. America did not participate in the organization of the Congress nor take any part in its proceedings to any great degree prior to the meeting in London in 1901. This was largely due to the lack of organization in this country. The founding of the National Association for the Study and Prevention of Tuberculosis in 1904 put this country upon a competent basis to take part in the international direction of the crusade, and America was better represented at the Congress in Paris in 1905 than on any previous occasion. A delegation of the National Association, at the direction of the association and with the endorsement of President Roosevelt, conveyed through Ambassador McCormick, extended an invitation to the International Congress to meet in the United States at its next session, and this invitation was unanimously accepted. The time was fixed in the autumn of 1908, and the place of meeting was Washington. Immediately after the adjournment of the Congress in Paris in 1905, the board of directors of the National Association appointed a committee on the Congress, with instructions to prepare plans which were to be submitted to the board of directors. In accordance with this a plan was adopted which was published in full in *Charities and Commons* of December 9, 1905, and which included, among other features, the collection of one hundred thousand dollars as a permanent fund for the scientific and philanthropic part of the Congress. Of this fund thirty thousand dollars had already been subscribed in the form of six subscriptions of five thousand dollars each. Dr. John S. Fulton of Baltimore was selected as secretary-general of the Congress. Under the plans adopted, the Congress was to last three weeks, one week of which was to be devoted exclusively to scientific work, and two weeks to entertainment and the inspection of institutions. During the three weeks thirty

lectures by the most prominent workers in the tuberculosis field outside of the United States were to be given. The fund of one hundred thousand dollars was to be used exclusively for the scientific part of the Congress, and if there was any balance left over, it was to be divided pro rata among institutions devoted to tuberculosis. The plans adopted contemplated the offering of prizes on a great many subjects in the interest of the crusade against tuberculosis. One prize had already been offered by the committee, and would be announced throughout the entire world. The prize consisted of one thousand dollars for the best evidence of efficient work done by any voluntary association since the last Congress on Tuberculosis. As rapidly as the money could be raised, other prizes would be announced. The matter of interesting medical societies and the societies for the prevention of other diseases than tuberculosis and various organizations interested in sanitary science and philanthropy was under consideration by the committee, but as yet nothing definite had been done. An effort would be made to bring all organizations which either directly or indirectly might have to do with the prevention of tuberculosis into the Congress. Such steps would have to be worked out very carefully, and thus far action regarding it had been deferred. The National Association for the Study and Prevention of Tuberculosis had made itself responsible to the world for the proper management of this International Congress, and would therefore have to maintain control of the Congress, but other organizations could be brought in to cooperate on a satisfactory plan if their cooperation was sought in the proper spirit. Every effort would be made by the committee to coordinate all the available sources for the best interests of the Congress.

Election of Officers.—The following officers were elected: *President*, Dr. Frank Billings of Chicago; *Vice-Presidents*, Drs. Mazyck of Philadelphia, Ravenel of Philadelphia, and Foster of New Haven; *Secretary*, Dr. Henry P. Jacobs of Baltimore; *Treasurer*, Dr. George M. Sternberg of Washington. Dr. Wm. H. Welch of Baltimore was chosen president of the International Congress for the Study of Tuberculosis, to be held in Washington in the autumn of 1908.

Pathological Society of Philadelphia.

At a stated meeting held April 26, Dr. H. E. Radasch presented a special apparatus for laboratory technique. This consisted in a portable rack made of aluminum for the purpose of carrying a number of slides mounted with serial sections through successive solutions. The device is simple, light, and inexpensive, and it has proved its usefulness in actual practice. Dr. R. S. Lavenson presented specimens of organic heart-lesions. He showed a series of hearts obtained at autopsies made on subjects at the Philadelphia Hospital. One was a beautiful specimen of tuberculous pericarditis, exhibiting clearly tubercles beneath the epicardium and presenting adhesions in places. Another was a specimen of mitral obstruction and insufficiency. Another was an example of mitral valvulitis with ulceration extending almost to the adjacent aortic leaflet. One was an example of aortic stenosis, with little or no insufficiency. Two of the aortic cusps were calcareous, while the third retained a certain degree of elasticity and freedom of motion. Dr. D. L. Despard exhibited a specimen of purulent pericarditis. Dr. J. A. Kelly exhibited a specimen of cyst of the appendix. The formation had attained considerable size, and it contained gelatinous material. Its communication with the bowel was cut off. Dr. Kelly presented also an ectopic supernumerary pancreas. The organ was attached to the small intestine in the neighborhood of the jejunum, and presented the histological structure of the pancreas. Dr. William Pepper demonstrated ova of the *Uncinaria duodenalis* obtained from an Italian patient in the Philadelphia Hospital who presented anemia, asthenia, and looseness of the bowels. Mature worms were developed by incubating the egg in sand or soil. Dr. G. Canby Robinson presented a communication entitled "Heart-block, with Pathological Specimens from a Case, and with Tracings from Various Forms of the Condition." The specimen exhibited was from the pathological museum of the Pennsylvania Hospital, and was obtained in 1879 from a man about sixty years old, who presented dyspnea, cyanosis, bradycardia, and convulsive seizures. Death took place suddenly, and post-mortem examination disclosed the presence of multiple gummata in the heart, one of which occupied the situation of what has since been described as the conducting bundle of His. From the clinical report and the pathological exhibit there is little doubt that the case was one of heart-block. Dr. Robinson demonstrated also a normal heart, exhibiting in a beautiful manner the conducting bundle. He also showed tracings from several cases that had come under his observation, exhibiting varying degrees of heart-block, together with the apparatus for making tracings. Dr. E. Crispin read a paper entitled "Metaplasia of Epithelium in Cysts of the Breast." He reported a case and presented the specimen in which the cylindrical cell structure of a cyst of the breast underwent transformation into stratified epithelium. Dr. J. H. W. Rhein presented a communication entitled "Syringobulbia, with Report of a Case." The excavation of the central nervous system was marked and extreme, extending from the conus medullaris to the medulla oblongata, and it was attended with degeneration of several cranial nerves and of tracts in the cord. Dr. H. E. Radasch read a paper entitled "Unilateral Absence of the Urogenital System and Its Relations to the Development of the Wolffian Duct," He traced the embryonic evolution of these structures and analyzed the comparatively small number of cases of the kind recorded in the literature. Dr. R. C. Rosenberger made a further communication on "The Presence of Acid-fast Bacilli in the Stools." He had been able to repeat previous observations on a large scale, showing the presence of acid-fast bacilli, conforming to the requirements of tubercle bacilli, in the intestinal discharges from patients clinically or pathologically shown to have tuberculosis in some part of the body. He expressed the view that such bacilli must be considered as having been excreted by the bowel, and not necessarily indicative of the existence of a lesion of the intestine. He had succeeded also in finding similar bacilli in the intestinal discharges of guinea-pigs that had received subcutaneous inoculation of tubercle bacilli in the absence of intestinal lesions and sometimes in the face of disappearance of the local lesion.

A Simple Method for Performing Resection of the Thorax.—Bayer says that although in some cases it is necessary to resort to Schede's operation in order to cure neglected cases of empyema, this operation is so bloody and severe a one that it should be employed as rarely as possible. He states that by the following procedure one is enabled to secure almost the same results as by means of Schede's very radical operation, while the tax on the patient's powers of recuperation is not nearly so great. A vertical incision beginning in the axilla and running parallel to but two inches posterior to the anterior axillary line is practically bloodless and does not divide any important muscles. Through this incision a short segment of each rib from the ninth upward is resected subperiostally and the soft parts are then cut through with the thermocautery to avoid any further hemorrhage. On inspecting the thoracic cavity it can be determined whether or not the thoracic pleura must be removed, and the resection of the stumps of the ribs can be very conveniently carried out. The author considers the rapidity of operation and the slight loss of blood achieved in this way as the principal merits of the method.—*Zentralblatt für Chirurgie.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 4, 1907:

	Cases	Deaths
Tuberculosis Pulmonalis	445	189
Diphtheria	342	38
Measles	534	12
Scarlet Fever	492	19
Smallpox	3	—
Varicella	74	—
Typhoid Fever	88	23
Whooping Cough	56	9
Cerebrospinal Meningitis	27	20
Malarial Fever	..	..
Totals	2061	310

Surgical Treatment of Thrombophlebitic Puerperal Infection.—Giuseppe Guicciardi indicates thrombophlebitic puerperal infection as a rare form that is distinct in symptoms, diagnosis, and prognosis from the other forms of puerperal infection. The fever is not an index of the pulse rate, which is independent of the height of the rise of temperature. The temperature curve is pyemic and is accompanied by severe chills that are repeated as long as the disease goes on; the general condition and color are bad, and the abdominal pain is peculiar in character; bimanual examination enables the operator to feel the thrombosed veins as hard cords. Bacteriological examination gives such different and contradictory results that it is of little value. The leucocyte formula gives little information. Ordinary obstetric treatment is useless, and only surgical intervention promises good results. Both abdominal and vaginal hysterectomy are useless and resection of the thrombosed veins is dangerous. The method of election is ligation of the veins. It results in the disappearance of the infective local process and of all pain, and ends in the recovery of a fair proportion of patients. The best time for intervention is about the twentieth day.—*Annali di Ostetricia e Ginecologia.*

Epithelioma of the Lacrymal Sac. Recurrence.—C. L. Lafon reports this case. The patient was a farmer forty-eight years old. In 1896 he noticed a condition of epiphora affecting both eyes. About the beginning of 1898 the region of the left lacrymal sac began to swell, and finally a bloody ulceration developed. Later on operation was performed. Incision showed that the growth involved the sac itself and the galvanocautery was used for destroying the diseased tissues. Histological examination of the débris showed the growth to be an epithelioma. Again in 1899 the patient returned to the hospital with a growth in the region of the wound; this was destroyed by the thermocautery. Three months later there was a recurrence. Again for the third time the patient was operated upon and recovery appeared definite. But at the beginning of 1905 the patient again appeared, showing the lacrymal region in a diseased condition. This case is of interest for several reasons. The epithelioma appears to have begun in the mucosa of the sac, a very unusual occurrence. The interval of five years and a half which elapsed after the first interventions is worthy of note. Finally, recurrence extending slowly up under the skin without appearing to have a tendency to destroy it is interesting. Lafon has the intention of operating again in order to remove as far as possible all of the diseased tissues.—*Journal de Médecine de Bordeaux.*

Spontaneous Ruptures of the Aorta.—André Bergé in his comprehensive paper on this subject speaks first of the various conditions under which the aorta ruptures or becomes perforated. Indirect violent trauma may be followed by rupture of the aorta. The aorta may become perforated secondarily as an effect of a neighboring lesion such as abscess of the mediastinum or cancer of the esophagus. An aneurysmal sac may be the cause. Finally, aside from the various causes which have been enumerated, the aorta may rupture in an apparently spontaneous manner. The first and essential cause of aortic rupture, aside from the cases of traumatism, consists in a previous alteration of the arterial wall. The most frequent location of perforation is in the ascending aorta in its intrapericardial division. Perforation is nearly always single. In the large majority of cases the alteration of the internal surface of the aorta is manifest to the naked eye. In general, the symptoms are precordial pain and syncope, and cardiac collapse. The clinical picture may present itself in one of three forms—sudden, rapid, or slow. The cause of death is probably not due to one process only. Hemorrhage, compression of the heart, and syncope by inhibition all play a part.—*Gazette des Hopitaux Civils et Militaires.*

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 3, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	April 13–20	1	..
Illinois, Belleville	April 13–20	1	..
Chicago	April 20–27	1	..
Kentucky, Louisville	April 18–25	2	..
Massachusetts, Haverhill	Mar. 9–16	1	..
Michigan, Detroit	Mar. 20–27	8	..
New Jersey, Hoboken	April 18–25	1	.
Ohio, Cincinnati	April 19–26	1	
Texas, Houston	April 13–20	10	.
Washington, Aberdeen	April 17	4	.
Spokane	April 13–20	10	
Tacoma	April 13–20	3	

SMALLPOX—INSULAR.

Philippine Islands, Manila	Mar. 9–16	1	

SMALLPOX—FOREIGN.

Africa, Algiers	Mar. 1–31		8
Austria, Trieste	Mar. 30–Apr. 6	2	1
Brazil, Para	Mar. 30–Apr 6	5	3
Canada, Pictou County	April 20		Present
Vancouver	April 13–20	2	.
Winnipeg	April 13–20	2	..
Chile, Coquimbo	Mar. 30	6	3
China, Hankow	Mar. 11–25	3	.
Shanghai	Mar. 9–23	..	24
Tiensin	Mar. 16–23	2	.
Ecuador, Guayaquil	Mar. 30–Apr. 6	.	3
Egypt, Cairo	Mar. 31–Apr. 8	5	1
France, Nice	Mar. 1–31	40	6
Paris	April 6–13	16	..
Germany, Bremen	Mar. 16–Apr. 6	7	..
India, Calcutta	Mar. 16–23	..	86
Madras	Mar. 23–30	..	1
Italy, Turin	Mar. 31–Apr. 7	2	1
Madeira, Funchal	April 7–14	30	14
Mexico, Aguas Calientes	April 13–20	..	18
Monterey	April 14–21	.	1
Tuxpam	April 16–23	.	1
Vera Cruz	April 13–20	2	.
Portugal, Lisbon	April 6–13	11	..
Russia, Moscow	Mar. 30–Apr. 6	6	1
Odessa	Mar. 31–Apr. 6	22	2
Riga	Mar. 30–Apr. 13	10	..
St. Petersburg	Mar. 23–Apr. 6	2	.
Warsaw	Mar. 23–30	..	5
Spain, Almeria	Mar. 1–30	..	13
Valencia	April 7–14	4	..
Turkey in Asia, Bagdad	Mar. 9–16	..	Present
Damascus	Mar. 16–Apr. 6	..	Present

YELLOW FEVER.

Brazil, Manao	Mar. 23–Apr. 6	..	5
Para	Mar. 30–Apr. 6	5	4
Ecuador, Guayaquil	Mar. 30–Apr. 6	..	5
Java, Batavia	Mar. 16–23	2	..
West Indies, Bridgetown, Barbados	April 13–20	1	Imported
Port of Spain	Feb. 9–Apr. 13	8	4

CHOLERA.

India, Calcutta	Mar. 16–23	..	49

PLAGUE.

Australia, Brisbane	Feb. 8–Mar. 9	2	1
Ipswich	Feb. 8–16	1	
Kempsey	Feb. 8–15	..	1
Sydney	Feb. 8–Mar. 9	14	1
Brazil, Para	Mar. 30–Apr. 6	6	3
Chile, Antofagasta	Mar. 30	16	5
Iquique	Mar. 30		Present
Santiago	Mar. 14		Present
Talcahuana	Mar. 14		Present
India, General	Mar. 16–23	62,155	53,004
Calcutta	Mar. 16–23	..	94

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Original Articles.

SANITARY WORK ON THE ISTHMUS OF PANAMA DURING THE LAST THREE YEARS.

By COL. W. C. GORGAS, U. S. A.

CHIEF SANITARY OFFICER, ISTHMIAN CANAL ZONE DEPARTMENT OF HEALTH.

My wish in this article is to give a general description of the sanitary conditions which existed on the Isthmus at the time the United States assumed control; to explain the methods which have been taken to improve these conditions, and to point out the results attained by these methods.

The Isthmus of Panama at the point where the proposed canal is being constructed extends from east to west. The canal course runs nearly north and south. At this point has been located the principal route of crossing since the discovery of America. The Spaniards, however, built a very good causeway for pack animals from the old town of Panama to Porto Bello. This causeway was paved with cobblestones and is still in a fair state of preservation. The old town of Panama is some six or seven miles east of the present town of that name, and Porto Bello is about thirty miles east of Colon. The advantages of the Chagres as a means of getting across the Isthmus were soon appreciated and travel was gradually transferred to the Chagres river until about the year 1670, when Morgan, the famous English buccaneer, captured the old city of Panama. After this the old overland trail to Porto Bello was abandoned, the city of Panama changed to its present location, and the Chagres almost exclusively used as a route for crossing the Isthmus. The Chagres empties into the Carribean some ten miles west of the present town of Colon. Porto Bello, which has an excellent harbor, remained the port on the north coast. All vessels crossing the ocean from Europe were unloaded at Porto Bello, the cargoes transshipped in smaller vessels to the mouth of the Chagres, where they were loaded into small dugouts and carried up the Chagres to the south some forty miles to the point where the Chagres changes its course. From this point they were carried overland on pack animals to the present city of Panama. A paved road was built from this point, Las Cruces, to the present city of Panama. This formed the main route of crossing up to the time of the building of the Panama Railroad. A large portion of the population which went from the eastern states and from all parts of the civilized world to California in 1849 and the immediately succeeding years, crossed by this route. In 1855 the railroad was thrown open to traffic. This road practically followed the former routes of crossing, went south up the Chagres to the point where the Chagres turned. From this point it followed up the valley of one of the large tributaries, the Obispo, until it crossed the divide, then followed the valley of the Rio Grande, which empties into the Pacific near Panama.

Colon is not situated at the mouth of the Chagres river. The railroad strikes the Chagres at Gatun, some ten miles from its mouth. The canal route practically follows the line of the railroad from Colon on the north to Panama on the south.

Some thirty years after the completion of the railroad a French company under the leadership of Monsieur De Lesseps commenced building a sea-level canal between Colon and Panama, following the route of the railroad. This company, after some seven years' work, and having done considerable excavation, failed.

The United States has acquired a strip of territory ten miles wide, with the canal as a central line, extending entirely across the Isthmus from Colon on the north to Panama on the south. The country is low and swampy for the first fifteen miles; the rest of the route, some thirty odd miles, is through a mountainous country. The temperature all the year round in this territory is tropical, varying very little between January and July. Conditions as to warmth are thus such that the mosquito will breed prolifically all the year round. Over the mountainous part of the route the peaks are from 100 to 1,000 feet in height, nowhere being high enough to in any way inhibit from a temperature standpoint the breeding of mosquitos. Water is abundant everywhere, in the mountainous section little streams coming from every ravine, forming ideal places for the anopheles, and in the swampy section stagnant pools of fresh water are on every hand. The towns of Panama and Colon were formerly dependent entirely for their water supply upon stored rain water. The dry season, when very little rain falls, lasts for some four months, and rain water had to be stored for use during this dry season. The large number of tanks and receptacles containing rain water thus made ideal breeding places for the yellow fever mosquito.

Now for four hundred years we have had a constant stream of unacclimated persons of the white race crossing this Isthmus. This constant stream infected the territory with both malaria and yellow fever and kept up the infection to a very much higher degree than in the neighboring tropical countries which did not have this stream of whites constantly in their territory. The travelers in a great many cases were dignitaries of importance, merchants, and people of wealth. Everybody who traveled from the west coasts of North and South America, in general, crossed at Panama, so that many important personages sickened or died at Panama. For this reason it has acquired a reputation for bad health which is second to that of no other locality in the world.

The French began the construction of a canal in this same territory in the year 1881 and kept on the Isthmus some 19,000 laborers, 2,200 of whom were whites. This large body of men remained here some seven years working on the canal. The

infection of both yellow fever and malaria being already present and other conditions being favorable, this large access of unacclimated people greatly increased the ordinary mortality, and as the project interested all the world the health conditions became widely known and gave to the Isthmus the very bad reputation it had when we came down here. The locality, however, is not naturally unhealthful. On the whole, it is a pretty and attractive country, with pleasant climatic conditions. Conditions as to temperature, rainfall, and local water supply happen to be favorable to the development of the stegomyia and anopheles mosquito, and then for four hundred years unacclimated whites were introduced in a steady stream, sometimes in very large numbers, such as during the construction of the railroad, and of the canal under the French, but I am inclined to think that such a thing would occur anywhere else in the world where the altitude was less than 2,000 feet, the minimum temperature not less than 60° Fahrenheit, and the rainfall more than thirty inches, provided the unacclimated whites had been brought there in the same way.

This, in general, had been the history of the Isthmus when the United States acquired possession in 1904. In April of 1904, just before the property was transferred to the United States, I was one of a party of American officials who spent a month on the Isthmus looking carefully into the then existing conditions. At this time there were some 40,000 people in the territory at present under our sanitary control, about 6,000 in Colon, about 24,000 in the city of Panama, and some 10,000 scattered in twenty-two villages along the line of the railroad. The principal business of the community was that connected with the railroad. The French were employing about a thousand men in digging on the canal, but they apparently were doing this only to hold their franchise. Business of all kinds was practically dead and the whole community was very poor and financially much depressed. The health conditions were about those common to the neighboring tropical countries. A case of yellow fever occurred now and then and malaria was pretty general. Two years before Panama had suffered rather severely from yellow fever on account of the introduction of a considerable body of troops from the interior of Colombia, but by the time we arrived this had quieted down to a few scattered cases. Colon had no water supply or sewage system, was built in a swamp, and every house had several water barrels for the collection and storing of rain water. Panama, though built on high, well-drained ground, was the same as Colon with regard to collecting of rain water. The French had some 2,000 buildings for the accommodation of their working force, scattered at various points along the line of the canal between Colon and Panama. The jungle everywhere had grown up to the railroad track, and on the whole the country presented a desolate scene of dilapidation, business depression, and financial failure. After considering the matter, it was clear that yellow fever was the disease that would interfere particularly with our success, and to which most attention would have to be given, and that the canal would probably not be completed unless we could protect our force from this disease. Yellow fever infection was evidently in Panama, and as our unacclimated force of whites was introduced from the United States I knew it would affect them just as it did the whites among the French force, unless we took measures to prevent it. The stegomyia mosquitos were everywhere in abundance, their breeding places were to be found on every hand, and the temperature was such all the year round that they could breed uninterruptedly. Malaria I also found everywhere. If this were not checked it would cause considerable mortality and a still larger rate of inefficiency among our forces, but even if unchecked would not have the moral effect that yellow fever would have. I know of no disease that causes the panic among the whites that yellow fever does. I found there was some dysentery, but not a great deal, considerable beriberi, principally located in the cities of Panama and Colon, and a great deal of Asiatic plague in the cities of Peru to the south of us. I also found considerable ankylostomiasis among the population, and these diseases might have to be considered in bringing a large force to the Isthmus. With the assistance of Dr. John W. Ross, U.S.N., and Dr. Louis A. LaGarde, U.S.A., I drew up plans for meeting these conditions. Major C. E. Gillette of the Engineering Corps of the Army drew up plans for water supplies and sewage systems for the cities of Colon and Panama. We introduced systems based, so far as they applied locally, on the plan we followed in Havana. We established health departments in each town, with functions in general similar to those of our health departments at home, such as sweeping the streets, disposing of garbage, and such general sanitary work as is done in a city of the same size in the United States, but our energies were principally concentrated upon the question of yellow fever. For this purpose the towns were divided into small districts, such that an inspector could get around to each house twice a week. This inspector looked after the premises, principally with regard to breeding of stegomyia. On his report a force would be sent to the house to make all water barrels and cisterns mosquito proof. This was done at public expense, and all other collections of water were either gotten rid of or oiled. All unacclimated persons sick with fever were treated as if they were suspected of having yellow fever. Physicians were required to report all such, and in case they had yellow fever they were either removed to a screened ward at the hospital or the houses in which they were sick were carefully screened. After the case was disposed of, the houses occupied, and all contiguous houses, were fumigated for the purpose of killing all infected mosquitos. A record was kept of all the unacclimated people in the city, and houses occupied by such people were visited daily by an inspector, and when he found any such persons sick he reported them at once to the Health Office. In addition to this, in both cities anopheles work was done, ditching, draining, and oiling in the suburbs. The Canal Zone, between Colon and Panama, was divided into some twenty odd districts and a sanitary inspector was placed in charge of each district. His duties were to attend to the general sanitary work of his district, look out for the proper care of night-soil, disposal of garbage, ditching, and draining for anopheles work, the stegomyia work around houses, isolating and screening for yellow fever, etc.

In order to prevent the introduction of yellow fever and other contagious diseases from the outside a strict quarantine was established at the two ends of the zone, Colon and Panama.

For the care of the sick employees a hospital system was established, but as it was of great importance from a sanitary point of view to get hold of contagious diseases early these hospitals were thrown open to the whole Isthmian population. This scheme has been elaborated for the past three years, until at present we have the Sanitary Department organized into the following divisions: The Hospital

Division, the Quarantine Division, the Health Division of Panama, the Health Division of Colon, the Health Division of Bocas del Toro, and the Division of the Chief Sanitary Inspector, which has supervision of health matters along the line of the canal between Panama and Colon.

The Quarantine Division maintains a maritime quarantine at the ports of Ancon, Panama, Colon and Cristobal. This division has been most efficiently organized under the supervision, first, of Dr. Henry R. Carter, and afterwards under Dr. J. C. Perry, both of the Public Health and Marine Hospital Service.

The Hospital Division was organized first by Dr. John W. Ross of the U. S. Navy, who, when he left on account of ill health, was succeeded by Dr. Henry R. Carter. It consists of two principal hospitals at each end of the line, Colon Hospital in the city of Colon, and Ancon Hospital at Panama. Colon Hospital is built on a coral reef, over which the sea washes freely, and is beautifully located as far as exposure to the breeze is concerned. Ancon Hospital is situated on the side of a mountain just back of Panama, and is most favorably located both as to beauty of view and accessibility to the breeze. We also have a convalescent hospital of some seventy beds, which is located at Taboga Island, twelve miles distant from Panama in Panama Bay. Between Colon and Panama, on the line of the railroad, we have some twenty-five hospitals, having a capacity of from ten to forty beds each. Colon Hospital has 500 beds, and Ancon 700. On account of the expected increase in force, we are at present extending Ancon Hospital with the expectation that by the end of the present year we shall have some 1,200 beds, the idea being to have the two base hospitals equipped with all modern appliances, with a competent nursing force and men more or less specialists in their various branches, so that any class of cases could be well cared for. The twenty-five line hospitals are only intended to care for the patients until they can be moved to the base hospitals, and for such of the seriously sick and injured whom it is thought not advisable to move. Last summer when our sick rate was at its maximum we were able to accommodate in these hospitals some 1,700 patients.

The Health Division of the zone is under the able management of Mr. J. A. LePrince, a sanitary engineer who did similar work in Havana, Cuba. He has under him some twenty-five sanitary inspectors and about one thousand laborers to attend to the ditching, draining, and sanitary work generally of the 40,000 people scattered along the line of the canal between Panama and Colon.

The Health Office of the city of Panama is under Dr. John H. Purnell, who employs some 200 men in street cleaning, ditching, draining, garbage collecting, and sanitary work in general of the city of Panama.

The Health Office of Colon is under the charge of Dr. E. H. Wheeler, who employs about 200 men in draining, ditching, and brush cutting in the swamps in which Colon is built, and attending to any other matters pertaining to the health work of the city.

As there was some yellow fever last year at Bocas del Toro, the President of the Panaman Republic appointed one of the officials of the Sanitary Department as Health Officer of Bocas. We employ some twenty men at this small port doing general sanitary work there.

This work has so far accomplished very satisfactory results. Yellow fever has apparently been entirely eliminated. We have had only one case on the Isthmus during the last fifteen months. A recent critic of Isthmian sanitary affairs has stated that this is merely accidental; that there have been times in the past when Panama was free from yellow fever for several years in succession, and that we would certainly have an epidemic of yellow fever some time in the near future which would stop the construction of the canal. It is true that Panama has been free from yellow fever for several years in succession at various periods in the past. This is the case in all small tropical cities subject to yellow fever, and it occurs for this reason: For one cause or another the native population, wherever yellow fever exists continuously, becomes immune to yellow fever. This is a well-recognized fact everywhere. Such being the case, it is the nonimmunes, or strangers, who keep up the disease. Take a place of 25,000 or 30,000 inhabitants such as Panama, and in ordinary times the strangers who settle in the community are comparatively few. They soon all have yellow fever and then the disease dies out; but a few strangers continue to come in and in the course of a few years quite a number accumulate. Then when yellow fever is introduced from the outside enough nonimmune material is present to keep the disease going for a time, but if for any reason a large number of strangers come in every year then the epidemic of yellow fever becomes continuous and keeps up as long as the strangers continue to come in. This has been exemplified at pretty much every town where yellow fever has prevailed in the tropics. At Rio de Janeiro yellow fever has prevailed continuously for the last fifty years, due to the large foreign immigration constantly coming into the city. At Havana it was present for considerably over one hundred years continuously from the same cause. At Panama the intermittent condition was well exemplified. In ordinary times they would have yellow fever for two or three years and then be free of it for two or three years, but whenever they had a considerable foreign immigration yellow fever was continuous. Thus yellow fever was continuous all during the construction of the railroad and again to a greater extent during the work on the canal by the old French company. The French, of course, brought over a large number of European employees. During the construction by the old company, from 1881 to 1889, considerable numbers of these European employees came over every year. This continuous influx kept yellow fever going during the whole time of construction by the old French company. In Ancon Hospital alone the old hospital records show that 1,200 deaths occurred from yellow fever during this period, and when it is remembered that these came from a force which at no time exceeded 3,000 men, one can appreciate what a heavy tax it was upon this force. The French during all these years, from 1881 to 1889, with a white nonimmune force which had as its maximum 3,000 men, did not pass a month in which one or more deaths from yellow fever did not occur in this force. With a nonimmune force four times as large, for we now have over 10,000 whites, if we include women and children, we have passed fifteen months with not a single case of yellow fever. The case which occurred in May, 1906, was in a man not an employee of the Commission. There never has been a time in the whole history of the Isthmus, from the time it was discovered by Columbus up to the present time, when there have been anywhere near as many men subject to yellow fever present on the Isthmus as there are now. The disease was on the Isthmus when we came in April, 1904, and remained with

us up to December, 1905. During this time we were constantly increasing our nonimmune population. I therefore feel confident that the same methods which eliminated yellow fever from Havana have accomplished the same results at Panama. I do not believe that our present freedom from yellow fever is in any way accidental. Our work here, I think, is another evidence of the great obligation mankind is under to the Army Board, of which Major Walter Reed was chairman and Lazear and Carroll were members, for establishing the fact that the stegomyia mosquito was the transmitter of yellow fever. Without this knowledge I do not believe we could have done any better than did the French, and, judging from the alarm that was caused by the comparatively mild epidemic which we had among our employees in 1905, I doubt, in case we were having the same amount of yellow fever that the French had, whether we could keep a sufficient force of white employees here to carry on the work. And even if we could keep white employees here under such circumstances, I doubt whether public sentiment in the United States would allow the canal to be built at such a sacrifice of human life.

In this connection I would like to call attention to the little credit the French white employees get for the heroism which they exhibited in coming to Panama. Every Frenchman who came to Panama knew that he was going to have yellow fever, and he also knew that every second man would die with it. To face such chances took no little courage.

The most useful result of our work, I think, however, as far as the canal work is concerned, is the extent to which malaria is held in check. While yellow fever was the fatal disease to the French, it did not affect their sick rate to a very great extent; that is, if you take their sick report day by day you would find thirty to forty men sick from yellow fever and 400 or 500 sick from malarial fever, so that malaria was causing eight or ten times the financial loss that yellow fever did. Malaria is still with us the principal cause of sickness; I mean we have a good many more men every day sick from malaria than from any other one cause, but our whole sick rate is very small. Last month (March) 1907 our sick in hospitals amounted to less than 20 per 1,000, and our total excused on account of sickness from all causes to about 23 per 1,000; that is, out of every thousand men we had absent on account of sickness in hospitals, their homes, and everywhere, an average every day during the month of twenty-three men. This is as small a rate as we would probably have if we were working in the United States, and I doubt if we are ever able to obtain a smaller rate than this. I am inclined to think that our sanitary work, as far as the sick rate is concerned, has reached its maximum efficiency, and that all we can expect to do for the future is to hold it up to that rate, though to keep this rate a great deal of work will have to be done.

The good water supply furnished all our employees has kept dysentery from being troublesome, so that I think we can claim that our sanitary work has directly controlled malaria, yellow fever, and dysentery, the three tropical diseases to which we are liable. Bubonic plague is pretty firmly established in some of the Peruvian ports to the south of us, and we have been very anxious on this subject during our occupancy of Panama. In the summer of 1905 two cases of plague occurred at La Boca, the Pacific terminal of the railroad and canal. Both men had been living there for some time and evidently contracted the disease there, but a very careful isolation and disinfection of the town of La Boca, under the supervision of Dr. J. C. Perry, Chief Quarantine Officer, eradicated the disease at this point, and we have had no cases since. Beriberi was quite prevalent on the Isthmus during our first year, but it is now entirely confined to the city of Panama, and much reduced in numbers.

I think, therefore, that the United States authorities can fairly make the following claim for their sanitary work: That when they got control of the Isthmus in May, 1904, the territory along the route of the canal was in its normal condition as to health. It was overgrown by a dense tropical jungle; the natural conditions were everywhere ideal for breeding stegomyia and anopheles mosquitos. The region was inhabited by a considerable population, which was very poor, as the result of the failure of the French canal company and the recent bloody and destructive war which had involved the whole country for some three years. Malaria, dysentery, and smallpox were prevailing among these people about as they would anywhere in the tropics under similar conditions. Yellow fever infection was present in both Panama and Colon. In fact, the conditions were more favorable for producing a high mortality upon the introduction of a large force than they had been at any time in the past. Into this region the Canal Commission has introduced the largest force ever before present on the Isthmus, some forty thousand persons, ten thousand of whom are white nonimmunes. Yet the sanitary measures taken by the United States during the period of the introduction of this unprecedented force have been such that yellow fever has disappeared, malaria been held in check, and the total sick rate in this force during the month of March, 1907, was only 23 per 1,000.

I think that there can be no reasonable doubt that there is a direct relation of cause and effect between the sanitary measures taken by our Government and the present health conditions on the Isthmus.

Ancon, C. Z.

A NEW TYPE OF ATAXIA.

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Ataxia is usually a symptom of either locomotor ataxia, or of cerebellar disease, or of disease of the tracts leading to and from the cerebellum as they pass through the medulla, pons, and cruri cerebri. It occasionally develops as a secondary symptom in ophthalmoplegia, when double vision misleads the patient as to the position of objects he is about to step on, and it occasionally appears as a temporary symptom under certain toxic conditions, as in alcoholic mulitple neuritis.

In the following patient the ataxia cannot be placed in either of these categories. The patient, a man of sixty-six years of age, whose family history is good, and who has been a healthy, strong, and active lawyer all his life, began to suffer about eight months ago from deafness, which has gradually increased and is shown by appropriate tests to be a nerve deafness, probably due to a progressive atrophy of the auditory nerve. Along with this symptom there has gradually developed a condition of static ataxia. He feels unsteady on his feet, he finds it difficult to balance himself when standing or walking, and he staggers greatly unless supported by the aid of an attendant and the use of a cane. This staggering has gradually increased little by

little as his deafness has increased, so that at present he is unable to walk without the assistance either of a cane or of an attendant. On rising from a chair he sways and would fall if not supported. In walking, his feet are placed irregularly, the steps being of uneven length and the body swaying without any special tendency to fall in any one direction. His gait is that of cerebellar disease rather than of locomotor ataxia, as there is none of the stamping of the feet or throwing of the legs in irregular directions. When seated there is absolutely no indication of any incoordination either in the movement of the legs or of the arms. His writing is perfectly good, and there is no trace of ataxia excepting in the act of standing and walking. It is impossible to stand with his eyes closed, but while this lack of balance is very marked, it is not attended by any vertigo, and it appears to be the only symptom that is present. His ocular muscles are normal and there is nothing abnormal in the action of his pupils. His vision is good and optic discs normal. He has never suffered from vertigo, vomiting or any evidence of primary cerebellar disease. His knee jerks are normal and he has never had any lightning pains or difficulty with the action of his bladder. There is no paralysis or disturbance of sensation in any part of the body.

Under these circumstances, it seems probable that along with the atrophy of the cochlear division of the auditory nerve, which has produced his deafness, there has been a progressive atrophy of the vestibular division of the auditory nerve, cutting off from his brain those impulses from the labyrinth which are necessary for the preservation of balance. It is well known that in labyrinthine disease of sudden onset, as described by Méniere, there is very great dizziness and consequent ataxia of movement and inability to walk. It seems possible, therefore, that in a progressive atrophy of the nerve the disturbance of equilibrium may appear as a symptom.

In the absence, then, of other evidences of disease, it seems warrantable to ascribe the ataxia to a progressive atrophy of the vertibular division of the auditory nerve.

Rossi[1] has recently described a primary parenchymatous atrophy of the cortex of the cerebellum present in old persons between fifty and seventy years of age and advancing progressively. The symptom in this condition is a gradually developing ataxia of movement without other symptoms. He cites three cases in support of his statements, with one autopsy.

A. Thomas[2] has described an atrophy of the inferior cerebellar peduncles and of the olivary bodies as a result of chronic arterial sclerosis, producing a gradually increasing ataxia. But in this case there were other symptoms of bulbar disease. Dejerine[3] and Thomas have also described an atrophy of the olivary bodies and pons with cerebellar tracts, causing ataxia, but there were also other symptoms indicative of bulbar disease. In our patient, however, there were no signs of any bulbar affection, which enables us to exclude such a lesion in his case, and although his age was such as to warrant the supposition of some beginning arterial sclerosis, yet the absence of cerebral symptoms, the unusual activity of his mind, his quiet sleep, and the absence of high-tension pulse, all make it unlikely that any serious atrophy of the brain from arterial disease can be in progress. The case is presented as an interesting instance of ataxia of auditory origin.

REFERENCES.

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2. A. Thomas: Le Cervelet, These Doctorat, 1897, Obs., v., p. 215.

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THE DIAGNOSTIC VALUE OF THE CYSTOSCOPIC EXAMINATION IN CARCINOMA CERVICIS UTERI.*

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In this paper I have attempted to determine what constitutes the complete cystoscopic examination in carcinoma cervicis uteri; to classify the various findings in order of their importance, and to indicate in these cases the diagnostic value of such an examination. Fifteen cases have been methodically examined. In each of these cases operation had been refused because of the extent of the growth.

The reasons why I have chosen inoperable cases are: (1) In carcinoma confined to the cervix, and manifestly operable, there is no question of bladder involvement. Only in those cases where the growth invades the vaginal wall and extends toward the bladder does the question of bladder involvement arise. (2) In such cases pronounced inoperable I had hoped to find some cases on the borderland between operable and inoperable. In reality such was the case, four of the fifteen being borderland cases. (3) Finding such borderland cases, I had hoped to determine the transitional steps between operable and inoperable cases, as shown by the cystoscopic examination.

The various modes of extension of the carcinoma into the broad ligaments, into the vagina, into the uterosacral folds, and into the rectum, may all be fairly accurately determined by palpation with one exception, namely, where the carcinoma extends anteriorally toward the bladder. When this occurs the extent of the bladder involvement and the condition of the vesicovaginal septum cannot be estimated by palpation. Winter (Lehrbuch der Gynäkologische Diagnostik) says: "These alterations [*i.e.* those of the bladder] appear to me to have value in judging the condition of the vesicovaginal septum. That portion of the parametrium cannot be accurately palpated, and even with examination by means of a catheter introduced into the bladder only the thickness of the remaining tissue layer may be accurately judged, but not the condition of the septum.

As to the necessity for the cystoscopic examination, Kelly says (Operative Gynecology, Vol. II., page 318): "In the early stages, when the cervix is not much enlarged and the uterus is probably movable, and a rectal examination shows that the broad ligaments are probably clear, the operation may be undertaken without any further investigation. Later, when the cervix is more extensively diseased, the minutest possible examination should be made before proceeding to operation."

In a recent article, Sampson says ("The Relation Between Carcinoma Cervicis Uteri and the Bladder," *Johns Hopkins Hosp. Bulletin*, May, 1904): "The nineteen instances of accidental injury to the bladder in 157 hysterectomies for carcinoma cervicis uteri emphasize the close anatomical relation between the two organs, and that the extension of the disease soon involves the bladder."

The literature on this subject is not extensive. I shall only mention the results of the work of Winter

*Read before the Eastern Medical Society, Gynecological Section.

(quoted by Caspar, Cystoskopie, 1905, page 318). He arrives at the following conclusions as the result of the examination of 43 cases of uterine carcinoma, 9 of which were recurring: "When the carcinoma approaches the bladder wall, the nearest portion is simply pushed forward, and we may have marked displacement of the bladder wall; then the mucous membrane over the affected place gradually begins to swell and to lie in thick folds which run parallel or appear with deep valleys. Sometimes the folds are bullous edematous. One often finds the larger vessels deeply injected, sometimes ecchymoses." In this series he has seen only two cases of carcinoma of the bladder wall. The bladder alterations develop only when the carcinoma approaches the bladder wall from the anterior and lateral portions of the cervix and vagina. With entirely free parametrium, and with (from general appearances) operable carcinoma, he never found bladder alterations, but in these cases the carcinoma was never limited to the anterior cervical wall. The bladder alterations occur very late, and, as a rule, only with inoperable carcinoma. Winter continues: "When one compares the alterations appearing with carcinoma to those which appear with paravesical inflammatory processes, it

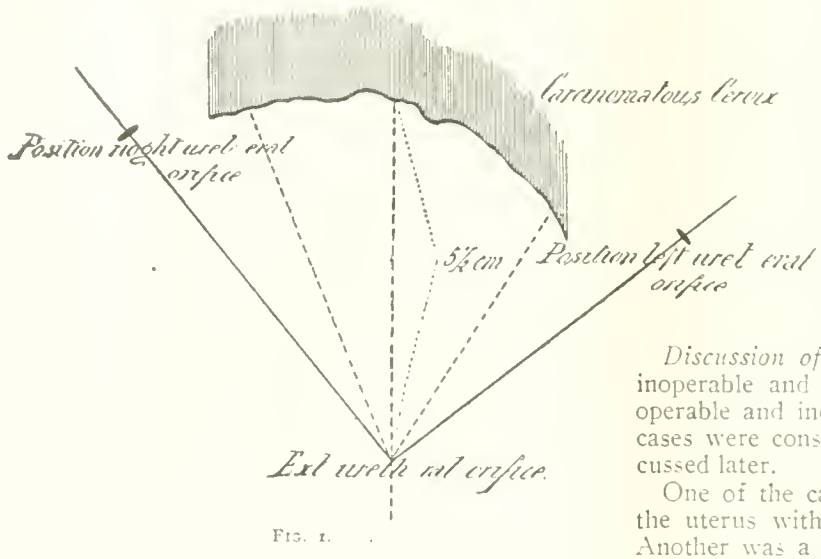

Fig. 1.

is found that, except in the rare cases of carcinomatous nodes of the bladder wall, they are similar; they depend in both cases upon the swelling of the mucous membrane caused by circulatory disturbances."

Kustner (Lehrbuch der Gynäkologie, page 230) quotes Winter and Zangemeister, and says that W. Hirts, after the examination of a large number of cases from his [Kustner's] clinic, confirms the results of Winter and Zangemeister, and adds that the conditions found with carcinoma and those of inflammatory processes are identical, and are only to be used in diagnosis when their etiology has been established.

In the cystoscopic examination of the fifteen cases the following routine has been carried out:

1. In the vaginal examination have been observed: (*a*) The portion of the cervix involved, and any encroachment on the vaginal wall. (*b*) The condition of the parametrium.

2. When the anterior vaginal wall has been involved, it has been attempted to find the relation between this involvement and the bladder. The trigone and its posterior boundaries, the ureteral openings, are the most constantly fixed portions of the bladder; also because of their anatomical position, the trigone and the vesical portion of the ureters are almost always the first parts of the bladder to be involved in the growth. Any distortion of the trigone and of the ureters, aside from simple elevation or depression, may be very accurately estimated by measuring the distance from the meatus urinarius externus to either ureteral orifice.* Using the same common point to measure from, the meatus urinarius externus, we may measure the distance in the vagina to where the growth involves the vaginal wall. These measurements give us roughly two triangles, both having their apex at the meatus urinarius, the base of one formed by the posterior limit of the trigone, and the base of the other limited by the growth. The relation between the bases of these triangles indicates fairly accurately the proximity of the carcinoma to the bladder trigone and the vesical portion of the ureters (Fig. 1).

3. Any limitation of the up and down mobility of the cystoscope in the urethra, and in conjunction with this the position of the trigone, whether normally placed or elevated. Normally, the up and down mobility of the cystoscope in the female urethra is about 90°, and the general trend of the urethra very slightly upward (Fig. 2). With encroachment of the carcinoma this mobility becomes much restricted, and may not be more than perhaps 35°, and with this restriction the general direction of the urethra always tends upward (Fig. 3). The elevation of the trigone varies directly with this restriction and upward trend of the urethra.

4. Any conditions within the bladder itself indicating involvement of the bladder by the growth.

Discussion of Cases.—In the 15 cases, 11 were inoperable and 4 were on the borderline between operable and inoperable. The reason why these 4 cases were considered borderline cases will be discussed later.

One of the cases was carcinoma of the body of the uterus with slight enlargement of the cervix. Another was a carcinoma extending to the cervix, but probably primary in the vagina. The remaining 13 were carcinoma of the cervix.

In these 13 cases the vaginal examination was as follows: (*a*) In one of the cases the anterior vaginal wall was not invaded. In the remaining 12 the anterior or lateral vaginal walls were invaded, the carcinoma extending along the vaginal wall in 2 of the cases to within 2½ cm. of the meatus urinarius externus; 3 within 4 cm.; 5 within 5 cm., and the remaining, distances varying from 5 cm. to 10 cm. The vaginal carcinoma extended to within ½ cm. of the meatus urinarius externus. (*b*) In all of the borderline cases the parametrium was not markedly involved. In each of the remaining cases the para-

*These measurements were made by means of an indirect cystoscope. When the ureteral orifice was directly in the center of field and in focus, the length of the portion of the cystoscope within the urethra and bladder was taken. This measurement is fairly accurate, as I have proved by experiment upon a clay phantom, the maximum variation from the true measurement being but three millimeters. The methods of Kelly and Sampson in ascertaining these measurements by means of the Kelly cystoscope would perhaps be applicable to these cases and would be perhaps more exact with normal or fairly normal bladders, but with the extreme distortion of the trigone in some of the cases I imagine that it would have been impossible to have found the ureteral orifices at all with the Kelly instrument.

metrium was involved, and, as a rule, markedly involved.

Relation Between the Involvement of the Anterior Vaginal Wall and the Trigone and Ureteral Orifices.—I soon found that the position of the ureteral orifices and their relation to the meatus urinarius externus was but little affected by the carcinomatous encroachment, even when this was extensive. The comparison of Figs. 1 and 4 demonstrates this. In Fig. 4 the carcinoma is but 3½ cm. from the meatus urinarius externus, while in Fig. 1 it is 5½ cm. distant. The only ureteral opening that could be found in the case which Fig. 4 represents is more normally placed than either of the ureteral openings in Fig. 1.

In the majority of the cases, therefore, these measurements were not taken, being of no value.

Direction of Urethra and Elevation of Trigone.—In the 4 borderline cases there was practically no limitation of the up and down mobility of the cystoscope in the urethra; the general direction of the urethra was normal, and the trigone not elevated.

In none of these cases was the parametrium of both sides extensively involved, although in 2 of the cases the parametrium of one side was considerably thickened.

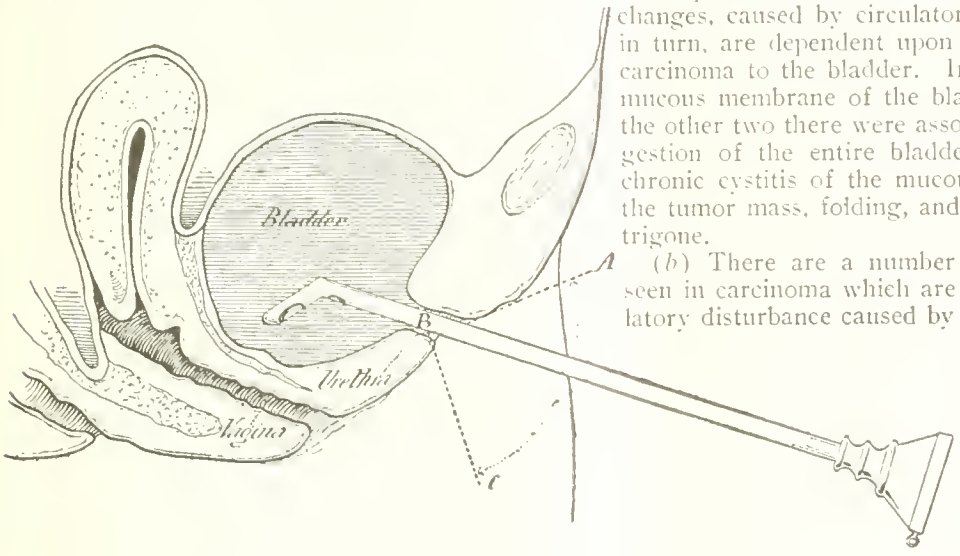

Fig. 2.—Cystoscopy: A B C, angle of cystoscopic mobility.

In the remaining eleven inoperable cases, excluding those of corporeal carcinoma and vaginal carcinoma, the limitation of cystoscopic mobility in the urethra was marked; there was a decided upward trend to the urethra, and the trigone was decidedly elevated. There was one exception to this, where the trigone and urethra were normal and the parametrium of one side only was considerably involved.

In the vaginal carcinoma, although the entire vault of the vagina was involved, the carcinoma extending to within ½ cm. of the meatus urinarius externus, the trigone was normally placed and the urethra normal, neither the cervix nor the parametrium being involved.

In these 9 cases the carcinoma was situated at varying distances—from 2½ cm. to 6 cm.—from the meatus urinarius externus.

These three conditions, *i.e.* the limitation of mobility of the cystoscope in the urethra, the upward trend of the urethra, and the elevation of the trigone, seem to be caused by, and are present with marked enlargement of the cervix, more or less extensive involvement of the anterior vaginal wall and the parametrium of both sides, and unquestionably involvement of the vesicovaginal septum. So far as I have observed, these occur only in inoperable cases. The cystoscopic examination, however, adds nothing to the knowledge that may be gained by palpation.

Changes in the Bladder.—(*a*) Tumor masses encroaching upon the bladder or retractions of the bladder caused by the adherent tumor. In one of the borderline cases in which the left parametrium was much infiltrated and the right hardly at all, just behind the left ureteral orifice there was a marked depression or pit which could not be brought into focus. This was taken to be a retraction of the bladder caused by adherence of the growth to the bladder. The bladder was otherwise normal. Operation in this case would be undertaken much more intelligently with the cystoscopic examination in mind. The surgeon would know where to expect trouble in freeing the growth from the bladder.

In three of the inoperable cases there were tumor masses encroaching upon the bladder wall, indicating adherence of the carcinoma to the bladder; in these three cases the cystoscopic findings simply emphasized the futility of operation.

These encroachments or retractions of the bladder still further indicate involvement of the vesicovaginal septum, when associated with other bladder changes, caused by circulatory disturbances which, in turn, are dependent upon the attachment of the carcinoma to the bladder. In two of the cases the mucous membrane of the bladder was normal. In the other two there were associated in one case congestion of the entire bladder, and in the other chronic cystitis of the mucous membrane covering the tumor mass, folding, and chronic cystitis of the trigone.

(*b*) There are a number of bladder conditions seen in carcinoma which are dependent upon circulatory disturbance caused by attachment of the carcinoma to the bladder, and which are entirely similar to those seen in different vesical and paravesical inflammations. These are: (1) folding and swelling of the bladder mucous membrane, giving the appearance of ridges and valleys; (2) varicosities of the bladder vessels; (3) submucous hemorrhages; (4) congestion of the bladder; (5) cystitis; (6) bullous edema.

These conditions appeared in the series with the following frequency, either alone or combined: Congestion, 3 times; cystitis, 3; hemorrhages, 2; folding of the mucous membrane, 2; varicosities, once; bullous edema, none.

Congestion or cystitis unassociated with other bladder changes does not mean, as far as I have been able to observe, involvement of the vesicovaginal septum.

A condition resembling cystitis is not infrequently seen. That is, the urine is clear; the bladder washings contain no flakes; the portion of the bladder nearest the growth gives a cystoscopic picture fairly typical of cystitis, *i.e.* swelling, folding of the mucous membrane, no vessels seen. This is probably always caused by chronic congestion dependent upon involvement of the vesicovaginal septum.

Aside from the cause, the importance of recognizing the presence of a cystitis is extremely important. Sampson says in the article above quoted: "The frequency of cystitis following these more radical operations [hysterectomy for carcinoma cervicis

uteri] is another indication of the close relation between carcinoma cervicis uteri and the bladder, and indicates that as a result of the operation the bladder is left in a condition of lowered local resistance, and that this condition is responsible for the cystitis

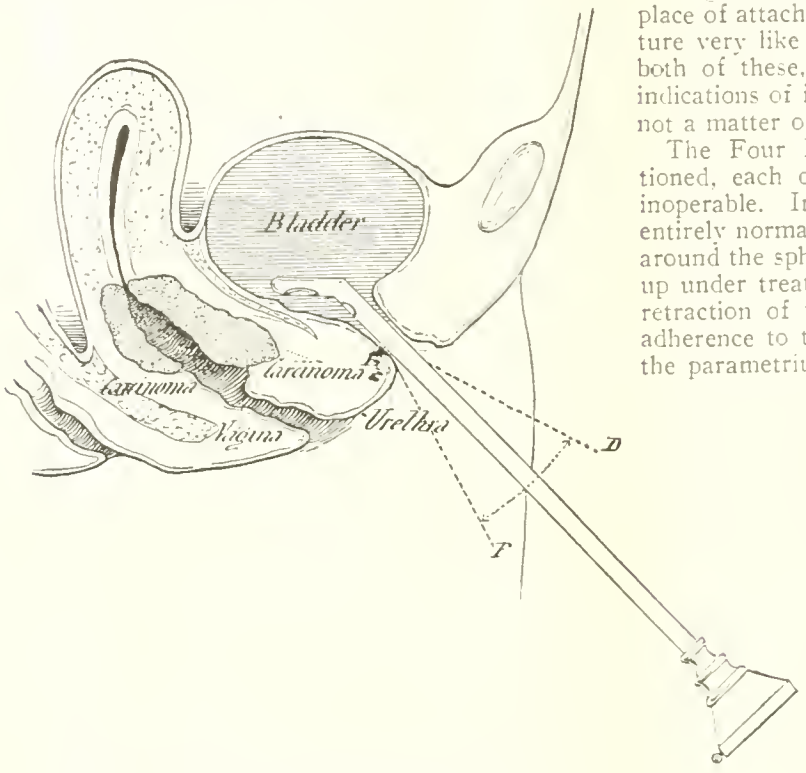

Fig. 3.—Cystoscopy; D E F, angle of cystoscopic motility.

which may later develop, as maintained by Wertheim in the report of his second series of 30 cases."

In 16 cases observed by Sampson in which the radical operation for uterine carcinoma was performed, cystitis (acute) occurred in 12, resulting in renal infection and death in 2 cases. How much more likely is it to occur if an old chronic cystitis be present. And yet how many radical operations are performed when the only means of estimating the bladder condition is through the laboratory examination of an uncatheterized specimen of urine.

As to the varicosities, in the one case in which these were observed there could be no question as to their indicating adherence of the carcinoma to the bladder and resultant venous engorgement. The vessels were large, often occupying half of the cystoscopic field, appearing around the circumference of the sphincter and radiating posteriorly. If these occur in a less marked degree, perhaps only one or two small varicosities around the sphincter, they mean nothing.

In summing up, tumor masses encroaching upon the bladder, swelling and folding of the mucous membrane, marked varicosities may all mean involvement of the vesicovaginal septum. When these appear in conjunction with one another, as they frequently do, the diagnosis is more certain.

(*c*) In 4 of the cases the bladder was carcinomatous. In these cases the carcinoma appeared as irregular tumor masses of the base of the bladder, reddish-yellow, perhaps hemorrhagic, easily bleeding, no vessels perceptible, or as grape-like masses. A description of this latter appearance, from my notes on one of the cases, is as follows: "At the base of the bladder covering an area of perhaps 9 cm. by 2½ cm., was a condition which resembled exaggerated 'bullous edema.' Large blebs, each covering one-half or three-fourths of the cystoscopic field; yellowish-red in color, translucent, no vessels. Directly next to the tumor mass normal mucous membrane appeared." Any combination of the above may occur. There are cases where the folding and swelling of the mucous membrane at the place of attachment of the carcinoma presents a picture very like carcinoma of the bladder itself. As both of these, however, usually occur in and are indications of inoperable cases, the differentiation is not a matter of importance.

The Four Borderland Cases.—As before mentioned, each of these cases had been pronounced inoperable. In two of these cases the bladder was entirely normal. In one there was a chronic cystitis around the sphincter, which could have been cleared up under treatment, and in the fourth there was a retraction of the bladder wall caused probably by adherence to the carcinoma. In three of the cases the parametrium was but slightly involved, and in the third the parametrium on one side was decidedly thickened.

In two of the cases the carcinoma extended along the anterior vaginal wall to within 6½ cm. of meatus urinarius externus. In the other two the anterior vaginal wall was not involved.

Operation upon these cases would have involved perhaps extensive dissection of the parametrium; sacrificing a considerable part of the vagina, and perhaps a portion of one or the other ureter and transplantation into the bladder, or nephrostomy; but the bladders were practically normal, as far as could be determined, not adherent to the growth, so decreasing the dangers of infection. If a more careful examination had been made the cases would probably have been operated upon. They should at least have had the chance of operation.

Conclusions.—1. In the early stages of carcinoma

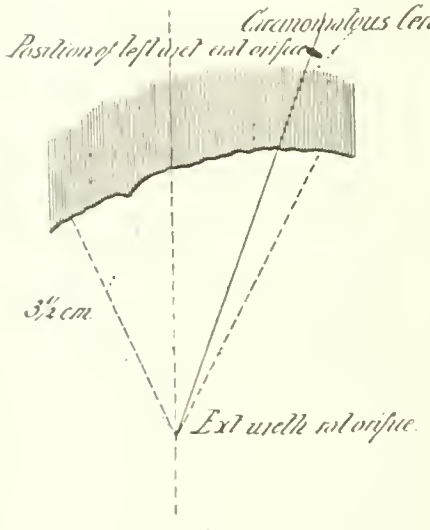

Fig. 4.

cervicis uteri, where the carcinoma is probably confined to the cervix, the cystoscopic examination is of little use other than to determine the presence or absence of a cystitis.

2. In all cases of carcinoma cervicis uteri involving at all the anterior or lateral vaginal walls, the most accurate means of ascertaining the condition

of the vesicovaginal septum is by means of the cystoscopic examination.

3. The cystoscopic examination includes (*A*) Estimation of the direction of the urethra and the position of the trigone, marked elevation of the trigone meaning practically always inoperable carcinoma; (*B*) Conditions within the bladder; [1] Tumor masses encroaching upon or causing retraction of the bladder; [2] The alterations of the bladder which are similar to those occurring with vesical or paravesical inflammations. These are (*a*) folding and swelling of the bladder mucous membrane, (*b*) varicosities of the bladder vessels, (*c*) submucous hemorrhages, (*d*) congestion of the bladder, (*e*) cystitis, (*f*) bullous edema. The most important among these conditions within the bladder which indicate involvement of the vesicovaginal septum are: Tumor masses encroaching upon or causing retraction of the bladder; folding and swelling of the bladder mucous membrane; marked varicosities.

3. Those alterations which are unquestionably caused by the carcinoma. Alone under this head stands carcinoma of the bladder.

4. Aside from ascertaining the condition of the vescovaginal septum, the cystoscopic examination is important in revealing any inflammatory conditions of the bladder, as cystitis, etc., which if unrecognized and untreated before operation might be the determining factor in causing the failure of the operation.

5. Finally, this examination becomes progressively more important as the growth extends, and the nearer it approaches the borderland between operative and nonoperative.

I am indebted to Dr. E. J. Gallagher and to the Superintendent of the House of Calvary for many courtesies extended and for the use of many valuable cases.

THE INTERNAL AND EXTERNAL REMEDIES IN URINARY DISEASES AND THEIR COMPARATIVE VALUE.*

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WITHIN the past decade the medical therapeutics of urinary diseases has progressed so rapidly and has suffered so many fluctuations that it has been my object in preparing this paper to bring to your notice the comparative value of the drugs more commonly used in urology, especially contrasting the old and the new. My conclusions have been drawn largely from the use of the various preparations both in my office work and in the clinic. Included in this paper will be the consideration of the drugs used and found of value by competent observers in treating diseases of the urinary tract, while such therapeutic agents as rest, diet, baths, electricity, etc., will not be considered in order to avoid a too lengthy paper.

Diluents.—To begin with the internal remedies, we might speak first of the diluents, and water, no matter whether in an admixture or alone, is a true diluent. It is therefore useful in nearly all the urinary diseases, as a good diuretic and solvent, and, when taken hot, has a diaphoretic action.

Of the many mineral waters used it is doubtful whether the results claimed are due to the drinking of the water at the spring or to other agencies such as travel, change of mode of life and of habits and of doctors, although the strong saline-aperient waters, as Carlsbad, Friedrichshall and Hunyadi and some of the lithiated spring waters have quite a reputation in the treatment of the uric acid diathesis and vesical calculous affections.

The acids which are used to counteract the morbid alkalinity of the urine are few in number. Very dilute nitrohydrochloric acid, in doses of five to twenty drops, is of service in the treatment of phosphaturia. Benzoic acid and its salts occupy a prominent position, particularly in genitourinary diseases. They are used to render the urine acid, especially when there are alkaline concretions in the bladder, as phosphatic calculi. In acute, subacute, and chronic cystitis they undoubtedly prevent and moderate alkaline fermentation of urine in the bladder; sodium benzoate being our choice of the group. Lithium benzoate is intended for use solely in the uric acid diathesis. Salicylic acid is used very little, having a tendency to irritate the kidneys and is apt sometimes to produce hematuria and albuminuria. Phenyl salicylate, or salol, obtained from salicylic acid, will be spoken of under the more appropriate heading of antiseptics.

The alkalies or neutralizers are employed to lessen the acidity of the urine. A point worth remembering about the giving of potassium bicarbonate is that, if given on an empty stomach, it enters the blood unchanged, meets the neutral phosphate of sodium, and is decomposed and forms acid phosphate of sodium, thus rendering the urine more acid. On the other hand, given on a full stomach, the acids of the gastric juices decompose it, increasing the alkalinity of the blood and rendering the urine less acid. The salts of potassium with vegetable acids (acetate, citrate, tartrate, etc.) enter the blood as such, are decomposed there, forming free carbonic-acid gas, form alkaline carbonates, and are eliminated as such, alkalinizing both blood and urine. They are diuretics also, increasing the urinary water and solids, and by causing increased oxidation, decrease the amount of uric acid. Of the mineral salts potassium nitrate is a most active diuretic. Potassium acetate is the most certain diuretic, but for long-continued use it is best to employ the citrate, especially when aiming to alkalinize the urine. The untoward effects of the citrate are very slight even when used for a long time.

The sodium salts are much weaker in their action than the salts of potassium, being diffused more slowly. They are not absorbed or excreted so readily, and possess a much diminished diuretic action. The lithium salts, particularly the citrate, are of value sometimes in the treatment of stone and the uric acid diathesis.

Antiseptics.—Of the urinary antiseptics, hexamethylene-tetramine is by far the best, and is invaluable in acute and chronic inflammatory diseases of the urinary tract, in acute, subacute, and chronic cystitis, in pyelitis and pyelonephritis. In bacteriuria it has no equal. Especially good results have been obtained from its use in the uric acid diathesis as it diminishes the uric acid excretion and develops urisolvent properties in the urine. Casper found that the drug caused complete cessation of all visible phosphatic excretion in a case of phosphaturia.

The salicylic ether of phenol, called salol, is another useful remedy and is an efficient disinfectant in subacute cystitis, its component parts being ex-

*Read before the New York Reno-Vesical Society, January 30, 1907.

creted with the urine, hence coming in contact with the vesical mucous membrane for a considerable length of time. Salol should not be given when there is any disease of the kidneys, because of the carbolic acid of its constitution.

Sodium benzoate, already mentioned above as an antacid, may be justly styled a urinary antiseptic, being very mild in its action and has the advantage that it can be used for a considerable length of time with little or no untoward manifestations. Cystitis is its best field of employment. Methylene blue has been classed as an antiseptic and used successfully in chronic cystitis.

Sedatives and Astringents. — The urinary and vesical sedatives and astringents when taken internally act through the medium of the urine in a sedative manner upon the whole extent of the urinary tract. They alleviate pain, decrease the bladder irritability, and lessen the desire to micturate. The antispasmodics may also be grouped under this heading.

Opium and its alkaloids are unequaled in the symptomatic treatment of renal colic, retention of urine, and pain due to vesical calculi. Belladonna is the best antispasmodic we have, and invaluable in the trigonitis of cystitis. The bromides, hyoscyamus, cannabis indica, are good in lessening the irritability of the nerves.

The mucilaginous drinks, such as barley-water or linseed tea, and the astringents like buchu, uva-ursi, and pareira, lessen the irritation due to chronic cystitis, and such antiseptics as copaiba and cubebs act in the same manner, being carried by the urine to the bladder. Pichi, an unofficial preparation, has done good service in the hematuria and pain of renal calculus.

Antihemorrhagics.—The internal administration of antihemorrhagics is of little value. The extract of suprarenal glands, ergot and iron are the ones most commonly used. Gelatin is employed subcutaneously, but as it is almost impossible to obtain sterile gelatin, and as the tetanus bacillus and other pathogenic germs grow readily in commercial gelatin, the method is not very popular. Calcium chloride has been used internally in hemophilia, being given for a few days prior to an operation on the urinary tract. The injection of fresh human serum subcutaneously has been tried very recently by Weil of Paris for preventing bleeding in hemophilic patients. These methods may be of importance in operating upon "bleeders" with urinary diseases.

Tonics and Alteratives.—The tonics and alteratives are brought into use very frequently in urinary diseases, particularly in the chronic and complicated cases. In tuberculosis of any portion of the urinary tract, such drugs as guaiacol carbonate, cod liver oil, iron, quinine, and strychnine are indicated. In fact, most of the tonics in general use. In chronic cystitis and incontinence of urine due to want of muscular tone buchu has proven of great value.

Diuretics.—Although many of the foregoing remedies have a more or less diuretic action, I think it would not be amiss to speak of a few direct diuretics. Digitalis, though frequently used in Bright's disease, is an unsuitable diuretic. In the acute form, when used alone, it aggravates the condition, while in chronic nephritis it is still more injurious, owing to the increased arterial tension set up in the renal circulation. In such cases it is better to use a diuretic pill made up of digitalis leaves in powder, calomel, and squill, a grain of each made into pill with extract of hyoscyamus. Digitalis is one of the most efficient diuretics we have, but it must be used with much discrimination. Digitalis, in small repeated doses, acts as a diuretic, not in virtue of its effect on the kidney itself, which is practically nil, but because of the increased arterial pressure it produces. In dropsy, in which it is principally used, there is a stasis in the renal circulation. The drug, by increasing blood pressure, causes an excess of urine to be secreted and thus relieves the dropsy. We must remember, however, that an overdose may cause a spasm of the renal vessels and thus produce suppression and cumulative effects of poisoning. For these reasons the infusion, which contains a small dose of the drug, is preferred by many as a diuretic preparation, though the tincture, given in small amounts, is preferable, being more staple. When there is disease of the renal tissue, as shown by casts, albumin, etc., digitalis should be combined with more active diuretics as caffeine or squill. In giving digitalis it is important to watch the pulse and the heart's action as well as the quantity of urine. Thus we can detect at once suppression or exaggerated tension. We must remember that digitalis is contraindicated in arteriosclerosis and fatty hearts.

Sodiotheobromine salicylate is supposed to be a very good diuretic and is practically a theobromine rendered soluble by sodium salicylate. The theobromine compound is really inferior to caffeine in its diuretic powers and is not a stimulant as caffeine is. It should not be given in acute nephritis, as it has a stimulating effect upon the renal secreting structures. In very chronic cases, in which the tissue of the kidney is largely destroyed, it is, of course, useless, as it acts directly upon renal tissue.

Caffeine, an alkaloid from coffee, is a heart stimulant and diuretic, especially valuable in dropsy, but should not be used in acute nephritis because it is also a stimulant to the kidney. It dilates the renal vessels also and increases both solids and liquids in the urine.

Antiblenorrhagics.—Our treatment of urethritis has been greatly enhanced since we have found a specific microorganism as the most common etiological factor. Copaiba was first given internally by Markgraf and Pison (1648) and introduced into the treatment of urinary diseases by Daniel Turner (1729) and J. Thorn (1827). Ricord (1849) and Roquelle (1854) showed that it merely acts locally, by passing into the urine. The urine, saturated with the balsam or its disassimilative products, passes through the urethra and thus produces its action. Both of these writers treated specific urethritis patients who were suffering from urethral fistula with copaiba internally. That portion of the urethra situated behind the fistula, and which was constantly being washed by the urine, recovered; the portion in front of the fistula remained blenorrhagic and did not heal until injections of the patient's urine were made into it. Ricord then administered copaiba to a patient in his clinic who was not suffering from blenorrhea, and injected a few urethritis patients with his urine. This virus proved effective, a distinct evidence of the topical action of the balsam. Sandal wood oil was first brought into use in urinary diseases by Henderson (1865) and Panas (1865).

The antiblenorrhagics, also known as the balsamics, have gained great prestige in recent years, particularly in treating genitourinary diseases. The balsamics are given to relieve the subjective symptoms in acute urethritis, and tend to lessen the pain and tenesmus and diminish the discharge and make the urine thinner. They inhibit the growth of gono-

cocci by rendering the soil less favorable and prevent complications, as Finger has shown. The remedies most commonly used in this class are sandal-wood oil, balsam of copaiba, cubebs, extract of kava-kava, oil of cedar, oil of turpentine, oil of juniper, buchu, matico, and pichi. Of these, sandal-wood oil and copaiba are the best, although the unpleasant irritating symptoms often produced, particularly by copaiba, such as pain in the kidneys, nausea, and skin eruptions, restrict its use for any length of time in a great many cases. Vieth (*Medizinische Klinik*, 1905) found that these irritating symptoms, on the part of the kidney and stomach, depended largely upon the proportions of terpenes in these balsams. To a lesser extent they depended upon the proportion of terpene alcohols, and to a still lesser degree upon the resin acids. It is interesting, therefore, to know that, according to chemical analysis of the various balsamics, one can ascertain in advance the amount of unpleasant symptoms they are apt to produce. Thus the most irritating substance of this group is turpentine. East Indian sandal-wood oil, or that ordinarily employed, contains 6 per cent. of terpene and 94 per cent. terpene alcohol. Copaiba balsam, the best variety of which comes from Maracaibo, contains 55 per cent. of terpene and 40 per cent. of resin acids. Extract of cubebs has 05 per cent. of terpene and 10 per cent. of resin acids. It will be seen from this that the last-mentioned drug is the most irritating to the stomach and kidneys; copaiba is next, and least of all sandal-wood oil. Unfortunately, the skin eruptions sometimes occurring in patients taking these drugs do not seem to depend upon the chemical constitutions of these balsamics, but to the idiosyncrasy of the skin. When we speak of copaiba we mean the balsam. The oil of copaiba is a decided renal irritant. The balsam also has a cathartic effect upon the bowels. In prescribing sandal-wood oil one should be sure it is the product of the East Indies one is using and beware of the kind sometimes substituted by unscrupulous dealers, because the latter contains from 30 to 35 per cent. of terpene. Even the best sandal-wood oil is not an ideal remedy, as it often disturbs the appetite and may cause renal pain.

In order to eliminate or decrease to a minimum the unpleasant symptoms occurring in patients taking the balsamics, various pharmaceutical manufacturers have tried to extract the active principle of sandal-wood oil and endeavor to increase its therapeutic value by the addition of some synergistic remedy, such as salol, the active principle of kava-kava, etc.

It is a question whether the admixture of any drug improves the action of sandal-wood oil, and it has been my experience that when sandal-wood oil is given judiciously and its action carefully watched in every individual case, there will be very little complaint on the part of the patient.

The indications for the use of the balsamics are not altogether definite in spite of the many years these remedies have been employed. Many of the older authors and a few of the recent ones (Leedham-Green, Treatment of Gonorrhea in the Male, 1900) recommend the balsamics in the acute stage at the very onset of the disease, when no local treatment is to be used. Others, as Taylor, say that they should be used in the subacute stage, and not before, and are contraindicated in the acute form of a urethritis. At the New York Post-Graduate Clinic we have been in the habit of prescribing our antiblenorrhagic mixture upon the first visit of the patient with an acute discharge, and for the most part with gratifying results. After the discharge has become scanty and the process is beginning to become chronic these remedies should be discontinued, as they are of no further value.

Specifics.—Among the local remedies used in urology the most prominent are the newer silver compounds regarded as specific in the treatment of urethritis. There are quite a number of these now upon the market, and the manufacturers of each are anxious to impress us with the superiority of their particular product. One point seems certain, however, that the bactericidal powers of these remedies have little to do with their clinical value in specific urethritis. The various synthetic compounds of silver which have come to our notice in the past decade, if used early enough in acute urethritis and in sufficient strength, in many instances will abort the attack or shorten its course, without causing the urethral irritation produced by silver nitrate. One of the chief characteristics claimed for the various organic silver salts is the fact that solutions of these salts do not coagulate in albuminoid solutions, with which the urethral mucous membrane is covered, and many observers point to the fact that there is a greater penetration of these solutions into the urethral submucosa, and thus exert a direct bactericidal effect upon the gonococci lodged there.

The extensive study of clinical cases rather disproves this theory, and a recent report of the comparison of the various silver compounds as bactericidal agents, sent to the Therapeutic Committee of the British Medical Association (August 18, 1900) embodies the fact that the amount of silver which a compound may contain is no criterion of its bactericidal power, and that a few of these salts which possessed practically no bactericidal action whatever had given the best results, and it seems impossible to attribute the good effects which many clinicians have obtained with them to their bactericidal action.

The non-irritating effect of these salts is the most favorable feature about them, and some of them can be used in very high strengths without producing any unpleasant symptoms. They seem to diminish the urethral discharge in a vast majority of cases to a marked degree, and the actual course of the disease is shorter than by any other local treatment. Solutions should always be made up freshly, and used as soon as possible after the appearance of the discharge, and the treatment kept up as long as any flow containing gonococci is visible, at which time we are to change to one of the astringent solutions. Solutions of these silver salts can be given in deep instillations two or three times a week in chronic posterior urethritis, or they can be employed as irrigations to both urethra and bladder.

Drugs Used for Irrigating.—A warm saturated solution of boracic acid is used to irrigate the urethra and bladder for cleansing purposes prior to an operative procedure for the recovery of shreds. Solutions should always be made with sterile distilled water. Formalin solutions in strengths of 1-10000 to 1-8000 make an excellent medium for irrigating and filling the bladder in preparing patients for cystoscopy. Potassium permanganate in solutions 1-8000 to 1-2000 is still used by some in the treatment of acute and chronic urethritis. At the clinic we never use it for irrigating purposes, as we have found it produces complications. Acute cases should not be irrigated anyway, as treatment with either salts gives much better results. Permanganate is useful in treating non-specific or septic urethritis in which the silver salts do not seem to do much good.

Silver nitrate is resorted to by some in obtaining

an abortive or quick curative treatment in acute anterior urethritis of gonorrheal origin. The surface of the anterior urethra is endoscoped for a distance of about three inches and an application of an aqueous solution of nitrate of silver, fifteen grains to the ounce, is made from within outward as the instrument is withdrawn. This procedure is attended with such intense pain and ardor urinæ, and for the most part with unwarranted results, that it has practically fallen into disuse. In chronic urethritis and cystitis, however, silver nitrate solutions in strengths from 1-16000 up to 1-2000, given by the Janet method, have proven of great value. Instillations, by means of an Ultzman syringe, of silver nitrate solutions 1-500 to 1-250 are excellent in treating posterior urethritis. Ayres has had excellent results in treating catarrhal pyelitis, by renal lavage, with mild solutions of silver nitrate in a boric acid medium (*New York Medical Journal*, August 11, 1906).

Astringents.—In addition to the office treatment in the chronic stage of gonorrhea we give astringent injections which, of course, act upon the anterior urethra alone, but seem to aid in curing the disease. The astringents are only indicated when the discharge has stopped and there are no gonococci present. Zinc, either the sulphate or the sulphocarbolate, is the best urethral astringent. It is better to combine it with alum, hydrastis, or liquor plumbi subacetatis, when prescribing for urethral injections.

Anesthetics.—Cocaine is used in the bladder in one-tenth of one per cent. strength. On account of such a large area as the bladder walls, absorption is apt to take place rapidly, and for this reason cocaine is used very little in the bladder. Instillations of a two to four per cent. solution are sometimes given to the posterior urethra when we experience difficulty in passing instruments into the bladder. This method is very useful in cystoscopy. Solutions in five to ten per cent. strengths can be safely used in the meatus prior to a meatotomy. Always have the solutions freshly prepared with sterile salt solution with the addition of a few drops of adrenalin. Several substitutes, as eucaine, beta-eucaine, etc., are available, but a cautious use of cocaine will answer our purpose.

An ethereal oil, made from a plant growing in New Caledonia, and containing a camphor-like menthol substance which gives it a cooling taste and odor, is said to be antiseptic and anesthetic and is used in twenty to fifty per cent. strength. In urology, it is chiefly used as an aid in passing different instruments as filiforms, etc., through difficult strictures and acts as a lubricant. It is also used in injections and instillations into the bladder in various forms of painful cystitis, particularly in tuberculous cystitis with ulcerations. It not only relieves pain, but also creates a pleasant cooling sensation in the bladder and diminishes the frequency of urination. It is, of course, a palliative remedy, but a useful one.

I have tried in the above lines to confine myself to the practical side of urinary therapeutics, and wish only to add a plea for a more thorough appreciation of the value of some of the old as well as the new remedies useful in this branch of medicine, for a deeper study of their action and the indications for their use, and for a due conservatism in accepting the statements of manufacturers or enthusiasts whose motto seems to be "*de novis nil nisi bonum.*" A thorough trial by competent and impartial observers should be the basis for the acceptance of a new remedy into our list of drugs.

12 Lombardy Street

TWENTY-FIVE YEARS' EXPERIENCE IN THE TREATMENT OF MALIGNANT NEW GROWTHS WITH ESCHAROTICS.*

WITH PRESENTATION OF CASES.

By WALLACE E. BROWN, M.D.,

North Adams, Mass.

At this my first available opportunity, it is my purpose to place before you and the medical profession throughout the world, a method of treatment that in my hands has effected permanent results in all forms of cancer and other malignant as well as benign new growths that are situated outside of the thoracic and abdominal cavities. This may to you seem presumptuous, particularly so in view of the current literature on the subject, much of which has been based upon ideas that could not possibly have been gleaned from clinical observations. Many of you know the circumstances that led my father to this special field of practice, so I will not relate them at length. Escharotics have been used with varying success for ages, but I believe my father was the first to employ them with a view solely to their mechanico-chemical, rather than elective qualities. Up to the time that he began his experiments various escharotics had been used, and applications were confined strictly to the new growths, the adjacent infiltrated area not being attacked, consequently cures were more or less of an accidental nature, rather than based upon a logical calculation. Early in the year 1878 I entered my father's office as a student. He was a dentist, having selected that profession in 1862 so that he might better equip himself, if possible, to cope with a very troublesome tumor that had been in the roof of his mouth from the thirteenth year of his age, and had been cut and otherwise unsuccessfully treated many times. These facts are well known to all of the older physicians of this city. This tumor we successfully removed in 1884 by the use of escharotics, and we had before this removed many other new growths in various situations, and they had not reappeared. Encouraged by our results, we entered this special field of practice.

There is no disease or class of diseases that presents more diagnostic features than does cancer, all views that may be expressed to the contrary notwithstanding, and a clinician can readily differentiate between a malignant and a benign new growth by macroscopic and digital observations. With the utmost respect for that most valuable of all instruments, the microscope, as yet its use in this particular disease does not imply science, nor will it until the microscopist combines with it his personal clinical observations. This point affects neither the utility of the instrument nor the eyes of practical observers. As a rule, cancer attacks persons that are otherwise in perfect health. In its incipiency it never presents premonitory symptoms, nor even a slight sensation, nor a rise in temperature either local or general. In short, it is a disease of health, something of a misnomer but nevertheless true, consequently there can never be a successful precancerous treatment.

It is conceded by all that cancer is primarily a local disease, and curable if the last vestige can be removed. Its incipient stage of invasion is microscopical. When it first attracts our attention we find a grouping of cells very diverse in size, shape,

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and color, so much so that our nomenclature fails to describe them. In these heterogeneous masses which are distinctly palpable, and discernible to the naked eye, we have what is designated as true malignant disease, or cancer, a word without histological meaning. This is a permanent change, and undoubtedly due to a perversion of cellular activity or dynamics of the cells. In my opinion this structural change will never be logicaly explained, so in justice to sufferers from cancer I feel that they should have the full benefit of the means at hand. We have to-day but two methods by which such growths can be removed—the knife and escharotics. I can in no better way explain the effect of the former than by quoting the exact language of that distinguished surgeon and teacher, Prof. Maurice H. Richardson. In an article on cancer read before the Obstetrical Society of Boston, he says: "The prognosis as to recurrence in even the most radical operation upon a cancerous cervix is bad; for, under the most favorable circumstances, the margin of healthy tissue seems utterly inadequate. A small cancerous nodule in the center of a large breast demands excision of the whole organ, and even then recurrence is the rule. An infiltrating epithelioma of the lip requires in its proper removal the broadest possible margin of healthy tissue, and if that margin is a close one we look upon recurrence as almost certain." These views as expressed by Dr. Richardson concur with those of many other distinguished surgeons in this and other countries.

In attempts to increase my armamentarium therapeuticum, many escharotics have been tried, but experience has taught me that those agents which are the most actively hygroscopic produce the most perfect granulating surfaces, and to-day I use in combination those most active of all escharotics, potassium hydrate and zinc chloride (granular). These are equally applicable both to skin and to mucous surfaces. In the mouth and throat I use a combination of chromic and carbolic acids which I will explain later. Potassium hydrate, the most destructive and least painful of all escharotics of which I have knowledge, is prepared by me as follows: Take one or more pounds, place it in a mortar, add just sufficient water to dissolve it thoroughly; this is best accomplished by keeping it agitated with the pestle. When dissolved add a sufficient quantity of ground hydrastis canadensis to make it assume the consistency of a paste that will not gravitate readily, when placed upon a perpendicular surface. The advantage of the hydrastis lies in the fact that it does not cake or dry up, making a perfectly stable mixture, one that will keep for years and not lose its destructive properties.

The zinc chloride is prepared separately in the same manner, with a view at all times of making them as near saturate as is possible, a quality which produces a degree of anesthesia in the tissues attacked rather than pain, the difference being analogous to that between the red-hot iron and one heated to a white heat when applied to flesh. The one notable point upon which I wish to center your attention is the fact that these escharotics when applied to any given area of tissue cut off all circulation and completely occlude all lymph vessels, which in my opinion are the main channels for the dissemination of cancer. This is a point that demands more thought on the part of the medical profession than has heretofore been accorded it, and which is an element that contributes largely to the success of the escharotic treatment. Of this there can be no doubt.

I cannot dwell at length upon any particular point, as time will not admit of it, but I wish to refer in a general way to the diagnosis of new growths, and can best do this by quoting the following from a clinical lecture by Prof. John C. Minor, M.D., of New York City: "Educate yourselves and your patients to a proper detestation of tumors, and, although you may be unable to prove that the case which you suspect to be one of cancer is so without doubt, yet I am confident that among a number of tumors removed in their early stages of development never to reappear there will be a large proportion of genuine cases of cancer."

The technique of my work in all cases is to outline the growth by palpation, seeking its most distant ramifications. This done, I make an application of the potassium hydrate, completely covering the entire growth, and extend the application in all directions as far beyond its most remote infiltrations as the situation of the growth will admit of doing, never with a view to conservatism. The application should be graded in thickness according to the depth and consistency of the growth, gradually lessening the thickness at the outer edges, using great care and design to have as much symmetry as possible, leaving a clean-cut edge. After this is applied, cut a piece of lint the exact size of the area you have covered. Just beyond your lint on the healthy tissue apply a heavy petroleum product. Then surround the application with a quantity of absorbent material sufficient to catch and hold the watery elements that will be attracted by the hygroscopic qualities of your escharotic, and which, if not prevented, will cause the escharotic to gravitate and destroy tissue wherever it reaches. This application will do its full work in from fifteen minutes to five hours, varying according to the nature and size of the growth and resistance of the skin of different patients. During the time that this application is in place the patient should be kept very quiet, particularly so in extensive growths, such as those of the breast.

The application should be removed, as above stated, in from fifteen minutes to five hours, and after removal the parts destroyed will be found in a perfectly soft pulpy gelatinous mass. The pain, which is very slight—but emphasized differently by each individual—immediately subsides, and there has not been produced the slightest soreness, swelling, or inflammation. In extensive cases of cancer of the breast this is absolutely true, and the patient sleeps that first night and is perfectly comfortable without the use of opiates.

The following day I make an application of the zinc chloride in exactly the same manner that I applied the potassium, except that I do not extend the zinc to a point of contact with the healthy or undestroyed skin. If the application is thus made with care there will be absolutely no pain resulting from it, the patient remaining perfectly comfortable. This application of zinc chloride penetrates the first completely, also hardens and contracts the eschar made by the potassium, causing more or less tension on the edges according to the extent of the growth; this traction causes inconvenience, not pain, and is probably the condition that has characterized escharotic treatments as drawing plasters. The eschar thus produced exfoliates in time ranging from four to twenty-one days, varying in each individual case.

After the eschar has exfoliated you have left a smooth and perfectly healthy granulating surface, absolutely bloodless, and perfectly free from any obscuring elements. It is not sensitive to the touch, all sensory nerves having been destroyed. Before the eschar is exfoliated the edges show marked signs of healing, and these edges are so far wide of

the diseased area that should you have failed to reach all of the disease in the deeper tissues it will be discernible to the eye, and easily felt by a slight touch of the fingers, the cancerous cells having a decidedly hard and shot-like feel, the same as metastatic growths that appear in the skin surrounding advanced cases of carcinoma. To all such cells repeated applications of the zinc can be made, the applications causing no pain, nor do they retard the healing process. The care of these wounds is very simple, but demands the attention of the operator daily, so that any evidences of disease that may remain can be recognized at once. I use a dressing of wood wool, which is a perfect absorbent. First wipe the wound lightly with absorbent cotton, then cover freely with a petroleum product which is of such high melting point as not to be absorbed. This is used for the dual purpose of excluding air and protecting the delicate granulations. Should giant granulations appear, treat them as you would the stray cell of malignant disease; continue these dressings daily until the wound is perfectly healed. The time necessary for this treatment varies according to the extent of the disease and amount of tissue necessary to be removed, ranging from two to sixteen weeks in early discovered cases. In the more advanced cases the larger the area circumscribed, and the longer the time required for healing, the greater safeguard does the patient have.

The combination of chromic and carbolic acids above referred to I use in cases of malignant and benign growths in the mouth and throat and on the tongue, and small benign growths and granulations that appear upon the cervix uteri. The remedies should be used in saturated solutions only. First making an application of the carbolic acid completely covering the growth and adjacent healthy tissue, then at once apply the chromic acid with the utmost care, keeping well within the area circumscribed by the carbolic acid. When the remedies come in contact destruction of that portion of the growth reached is immediate and the patient suffers no pain. Should you fail to destroy all of the growth by your first applications, make repeated applications in the manner described.

In cancerous growths of the womb I use the combination of potassium and zinc chloride; little or no pain is experienced by the patient if care is observed in protecting the vaginal walls, and the results of this method of treatment in that situation are successful.

In my experience no patient has ever been confined to his or her bed or room a single day from the effects of the escharotic treatment. With an early diagnosis and prompt treatment, there should be as large a percentage of recoveries by this method as are recorded in any class of the more serious diseases that afflict the human family, such as eruptive and continued fevers. Taken in its incipiency (and by this I mean the earliest stage at which the new growth may be discovered and observed macroscopically), there should be absolutely no failures to cure, except such as come through complications or causes extraneous to the cancer itself. With this method we can operate in many places where the knife cannot go, and in all places where it can be used, and with a more certain isolation and separation of all cancerous elements. As in all modern surgery, this is a line of work which gives best results under institutional rather than home treatment, and the necessary qualifications are the same as required to become a successful surgeon, namely, a thorough knowledge of anatomy, a delicacy of touch, a constitutional steadiness of nerve, and mechanical order of mind. In selecting cases for clinical demonstration, I have taken those that best demonstrate the size of the growths that can be successfully removed and those that show the work in its various stages from the making of a first application to the completion of the healing, and which demonstrate that we have no disfiguring cicatrices left as unpleasant reminders.

Case I.—Tumor first discovered in upper border of the right breast about seven years ago. When I first saw the patient the growth extended from the center of the breast (which was extremely large) to the lower border of the clavicle, and from the inner border of the left breast to, and involving the right axilla. The mass in that situation was fully four inches in diameter. The entire growth was nodular, presenting two high points at the upper extremity, near the clavicle, that were necrotic. From a surgical point of view the case was inoperable. Ten physicians of this city examined the patient before treatment was commenced. In making the first application of potassium hydrate, I covered 127 square inches of surface; the following day the same surface was covered with an application of zinc chloride. The eschar that resulted from these two applications weighed four pounds and nine ounces, and represented about one-half of the entire growth. The patient has not been confined to her room a single day from the effects of treatment, nor has she failed to sleep nights. No opiates or other remedies have been administered. As seen to-night she is in perfect general health, and as there are no glandular involvements or other evidences of cancer remaining, I believe the treatment will be permanently successful. I shall give the case daily attention until circulation is fully established in the new tissue. This case plainly shows that the treatment leaves little evidence of the work accomplished. The surface treated shows no cicatricial tissue, and the patient has perfect use of her arm, and has not been reduced in flesh.

Case II.—Tumor in right breast, first discovered about two and one-half years ago. Examinations were made by three physicians at her home in the West, all agreed as to the nature of the growth, and pronounced it to be cancer of scirrhus type. She arrived here on December 14, 1906. The following day I called three local physicians, who examined the patient, and concurred in the opinion given by her home physicians. The case presented many characteristics that were diagnostic, including marked drawing of the surrounding tissues toward the tumor, atrophy of the breast, complete retraction of the nipple, etc. On December 16 I made an application of potassium hydrate covering an area of fully thirty square inches of surface; this was followed on the next day by an application of zinc chloride. As seen to-night the entire breast seems to have been destroyed. The patient has not lost a night's rest from the effects of treatment, and she shows no signs of physical disability. No opiates or other remedies have been administered. The eschar is fast exfoliating, and there is no inflammation or swelling in the surrounding tissues.

Case III.—This case shows involvement of the glands in the left axillary space, and metastatic growths along the line of incision following a previous surgical operation for cancer of the breast. The application of potassium hydrate was made December 10, 1906, followed by an application of zinc chloride on the 20th. The eschar exfoliated completely on the 25th. To-night, eight days after the first application, we have twenty-one square inches of open area. This case illustrates many

points mentioned in my paper. It shows a bloodless surface, is not sensitive to the touch of the fingers, as all can plainly see, and the evidences of remaining disease within the circumscribed area are perfectly visible to the eye and touch; the edges are flat and show marked signs of healing. This case also shows the rapidity with which some eschars exfoliate as compared with others with the same treatment and under similar conditions.

Case IV.—This patient came under treatment on October 23, 1906, afflicted with a very extensive cancer of the right cheek. With its infiltrations, it covered an area extending two and one-half inches from the nose across the cheek, and from the upper lip to, and involving the lower eyelid. This growth was examined by two of the physicians here to-night, and the applications were made in their presence on October 24 and 25. There is evidence of disease remaining, but it would not be recognized by a casual observer. This will necessitate another application, and when the disease is all removed, and the wound healed, I believe there will be no cicatricial tissue or drawing of the eyelid or lip. This patient has an additional growth on her forehead, which is of the same character as was the growth on her cheek. She has given me permission to make the first application to this growth to-night. I have covered the growth and the infiltrated area surrounding it, a space three-quarters of an inch in diameter. The potassium hydrate was applied, and after fifteen minutes the remaining escharotic and dressings were removed and the growth found to be completely destroyed. The patient declared that no pain or inconvenience was experienced, and the surrounding tissue showed no evidence of swelling.

Case V.—This patient came under treatment June 19, 1906. Four of the physicians present saw the case before I commenced treatment. The breast was completely necrotic, the axillary glands were involved, and the tissues surrounding the breast were also extensively involved. To cover the diseased area, and reach healthy tissue on all sides of it, required an application twenty-nine inches in circumference. The case was inoperable from a surgical standpoint and had been treated by the *x*-ray before coming to me. I show the case to-night simply as evidence of what may be accomplished by this method in very extensive cases of cancer without depleting the patient's general health and preserving perfect mobility of the arm following invasion by escharotics of the entire axillary space.

Case VI.—This patient came under treatment November 1, 1906. I introduce him to show what can be accomplished in cancer of the lip. This was a typical case, and had been treated at his home with the *x*-ray, over one hundred exposures. That treatment disseminated the disease. I found the free border of the lip extensively involved. As you see him at this time the wound is perfectly healed, the lip is not shortened, and its contour is perfectly preserved.

Case VII.—I have invited this patient here to-night to show those present the delicate character of the work that can be accomplished with escharotics and its permanency. He was treated here ten years ago. The case was cancer of the penis; he had been unsuccessfully treated for several months by his family physician and others. When I first saw him about one-third of the organ was involved, and the disease was infiltrating rapidly. To go wide of the disease I found it necessary to make my application at the root close to the pubes. I made an application of potassium hydrate completely encircling the organ, and followed this the next day with an application of zinc chloride. During the time of exfoliation of the eschar, the patient did not experience the slightest difficulty in urinating, nor has he since. I have seen the patient but once, before this evening, in ten years. There has been no treatment of any kind since he was discharged in 1897.

Case VIII.—The history of this patient's case may be of interest. At this time, twenty years after treatment for sarcoma of most malignant type, we find her in perfect general health, and but little evidence to be seen that would show what had been accomplished. The growth completely covered the right popliteal space. She was first examined by a prominent surgeon in the eastern part of this State, who advised an immediate operation. When I saw the case a degenerate change had taken place; the greater portion of the center of the tumor had assumed an osseous condition. Its gross appearance resembled honeycomb and its consistency that of a very thin egg shell. The outer edges of the tumor had so involved the muscles as to make it most difficult to place the heel upon the floor when walking. The same remedies I employ to-day were used in this case, but not in saturated strengths, consequently there was more pain and inconvenience attending the treatment; however, she was not confined to her room from its effects. The tumor was removed and the wound healed in thirteen weeks. There was no hemorrhage during treatment. There is no muscular contraction and she has perfect use of the limb.

The first patient treated for cancer of the breast by this method is alive and in perfect health after a period of thirty years. No subsequent treatment has been necessary. She resides in Springfield, Mass., and would have been here to-night but for a misunderstanding as to the date of this meeting.

PREOPERATIVE RADIATION AND SURGICAL TREATMENT OF CANCER.*

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Based upon the conclusion that cancer is at first a focal and consequently a local disease, surgery has rightly demanded the very earliest possible extermination of the small offending tumor. But surgery seldom has an opportunity to operate as soon as it would desire. The patient fails to notice the tumor early or fails to appreciate its deadly significance. Likewise, the conservative attending physician is loath to arrive at a prompt decision. Hence, by the time that what is apparently an early operation is decided upon, the tissue in the immediate neighborhood of the small tumor is already infected and quite possibly, by the way of the lymphatic vessels and the blood circulatory system, fairly distant tissue is also infected. Hence, if by the older practice, the small tumor alone is now removed, there is almost inevitably a recurrence in the neighboring tissues due either to the "soiling of the wound" or to actual nonremoval of diseased areas.

This state of affairs led to the adoption of the sweeping plans of general removal, as in carcinoma of the breast, of the entire breast, and underlying muscles and glandular contents of the axilla. By this plan a far higher percentage of ultimate cures was secured, thanks to the teachings of Heidenhain

* Read at the seventh annual meeting of the American Therapeutic Society, New York City, May 4, 1906.

of Berlin, Halsted of Philadelphia, and Willy Meyer of New York. It is claimed by Redman of Philadelphia that out of a total of 629 individuals operated upon by American surgeons 44.16 per cent. survived the three-year limit. Certainly, the complete operation and the recognition of the importance of early operation have very largely augmented the number of ultimate survivals. Such was the thesis of cancer up to the time of the appearance of the *x*-ray upon the scene.

A new problem was now presented. The *x*-ray showed a hitherto unknown but indubitable action upon cancer growth. It seemed at first, judging from its effects upon comparatively superficial growths, that all cancer might be cured by it, especially if applied in an early stage, and indeed many cases have been cured by it, for the neoplasm cell is more vulnerable to radiation than its neighbors.

But with experience and time it was found there were limits to the depth at which an absorption of the curative portion of the total output of the Crookes tube would take place. These limits surely could not be a limit of penetration, for the fluoroscope reveals penetration through the densest bodily tissues. It would appear rather that a given intervening mass of tissue can screen out that class of rays which destroys cancer cells. But at what depth *x*-radiation ceases to act no one can as yet say. I have seen nodules one inch beneath the skin disappear and large tumors of the abdomen become greatly reduced in size. I maintain, therefore, that *x*-radiation is indicated in such growths—not to the exclusion of operative procedure, but preparatory to it.

I contend, as I have long contended most strongly, that radiation should precede every operation for cancer. In epithelioma of the face, in carcinoma of the breast, or in sarcoma of the skin, the case may go on to a complete cure without any surgical interference. If after six weeks to two months operation is necessary, it may then, in my opinion, be performed with a greatly diminished prospect of recurrence, or what is equally of importance, the area of operation may be reasonably limited.

Preoperative radiation would undoubtedly improve the statistics relating to the ultimate success of surgical intervention.

Against this plan of preoperative radiation it has been urged:

1. That the patient "loses valuable time." *Per contra* many an inoperable case of cancer of the breast is rendered operable by reason of the great reduction of the area of the disease, and many a so-called operable case, by reason of the same reduction, may undergo a safer operation, so far as ultimate recovery goes, or may undergo with safety a limited operation. The wandering cancer particle, as in carcinoma of the breast, is deprived of at least some of its virulence by reason of the radiation. In operable deep-seated tumor it is no doubt better to operate at once.

2. That radiation itself produces cancer or aids its growth. In support of this contention, examples are cited of intense *x*-ray burns in the case of several zealous *x*-ray workers, who have burned themselves to the point of, or almost to the point of, necrosis. Epithelioma has then developed. The authors of this contention are to be congratulated upon having discovered the causation of cancer; the discovery of its radical cure should surely follow. Perhaps a more rational view would be that one generally received that a constant source of severe irritation frequently offers a favorable site to the development of cancer.

Certainly no radiotherapeutist to-day ever repeats upon his patient the mutilations which those martyrs of science in the early days of experimentation unwittingly produced in their own persons. Such instances have been accidents of experimental physics, and have never occurred as a result of skilled radiation therapeutics.

3. That Roentgen toxins are produced and thus the patient's vitality is reduced. The objection has been raised that the breaking down of the neoplasm sets free a toxic débris causing nausea and rise of temperature, with general reduction of the patient's vitality. I have never seen such a case due to the action of the *x*-ray. On the contrary, I have frequently observed the entire disappearance of the patient's cachexia and return to good general health, due without question to the influence of radiation.

4. That metastases are established. Metastases, sooner or later, are the inevitable accompaniment of cancer. They may occur early, but not manifest themselves for a long time. Radiation, for instance, may be initiated at any time during the latent (to our senses) period of metastasis. How unjust, therefore, to refer the metastatic developments, when at last obvious, to a coincident radiation. The charge rests upon mere conjecture and is contrary to the views of the majority of the best authorities on *x*-ray therapeutics. As a rule, in the case of many of the patients referred to me, undoubted, but possibly not very obvious, metastatic conditions have been overlooked. In self-defense the *x*-ray operator should examine every case as to this point with great care.

5. That gangrene may develop in the wound after operation upon a case which has been previously *x*-rayed. This may be true, if the patient has been *x*-rayed prior to operation up to the point of necrosis—a very improbable supposition. But I have referred many cases to surgeons for operation after a preliminary course of *x*-ray, and I have yet to see the first case of gangrene as a result of radiation. Nor have I observed delay in the healing of the wound. It would seem in many cases that the process of cicatrization was accelerated. I quote a case to substantiate this view, and could quote many more.

Mrs. W. R., age 40, wife of a physician. Primary carcinoma of the breast. Tumor size of a large walnut. Peremptorily and continuously refused operation; *x*-rayed beginning September 6, 1905, 40 times in 1905, and 27 times in 1906, up to the very day of limited operation, which she at last consented to. Operation by Dr. J. N. West in September, 1906. Dr. West reports that the wound healed promptly by first intention, that there had been no discharge, that the stitches were removed on the fifth day, and that he had never known a wound to heal more kindly or more promptly. The remaining cicatrix is excellent.

Dr. West, who has performed probably a dozen operations for me, after the extensive use of the *x*-ray on my part, authorizes me to say that in all cases he has had union by primary intention and without the slightest trouble, with the exception of one in which failure to unite promptly was due to other causes. He also states that these cases heal as quickly, if not more quickly, than the average case, and that he has seen more instances of failure to unite in cases which never had had the *x*-ray than in the above series of cases which have had it.

Concerning one such case, however, which has been often quoted to sustain the allegation that gangrene of the wound may result from preoperative radiation, I will say a word. The case was one of my

own, and the surgeon to whom I referred it for operation is the one who cites it. The patient, a woman, had developed in less than six months an enormous tumor of the breast. It was of the encephaloid, or rapid-growing, type. When she began *x*-ray treatment with me the case was already inoperable. A distinguished surgeon of this city gave it as his opinion that operation would be followed by immediate and extensive recurrence. The center of the tumor was extensively broken down into a foul smelling and deep gangrenous mass. After four months of the use of the *x*-ray the tumor shrunk fully one-half in size, two large purplish foci on the point of breaking down disappeared. I then thought that if the remaining and still large bulk of the tumor could be removed, including the huge gangrenous area, the chances for continued treatment by the *x*-ray would be better. The operation was decided upon and was performed. I was present. The gangrenous contents of the large ulcer were squeezed out by the necessary handling of the operator and his assistant, and hands soiled with this material delved into the clean tissues of the axilla and elsewhere during the dissection. I should add, in all fairness, that an attempt was made to obviate this untoward result by covering over the gangrenous ulcer with cotton and superficially-applied collodion. But this flimsy barrier quickly broke loose, and was of no avail to pen in the gangrenous fluids. It naturally followed that the virulent microorganisms of the preexisting gangrene were planted in the new soil, and as the surgeon naively says in his report, "the patient almost lost her life in consequence." To say the least, it seems to me that a better case than this should be cited by the operator to prove the allegation that the gangrene was due to the prior use of the *x*-ray.

The patient's welfare certainly is not promoted by extreme views, and it is against such views that I would protest in this paper, while claiming at the same time the patient's right to the advantages of preoperative radiation. But there prevails, fortunately to a limited extent, in this country, an ultra surgery which, as regards cancer, will listen to no claims for the benefits of radiation, if possibly we may except a grudging acknowledgment of the benefits of postoperative radiation. To what extent this spirit of intolerance may go is illustrated in the following quotation. "In advising such treatment [*x*-ray] after operation, the patient * * * * should not be kept ignorant of the fact that in a number of cases the prolonged exposure to the *x*-rays had caused cancer in a previously healthy individual."

Testimony from all over the civilized world has demonstrated that recurrent cancer has been, in a great number of cases, benefited by *x*-radiation. If cancer may be about to occur, does not the same rule hold good, and is not the hope of prophylaxis well founded?

This class of surgeons is contented to ask of radiation, what cases have you cured? May not radiation equally ask what cases have *you* cured? Can either claim an overwhelming mass of cures? It is exactly this uncompromising position which I would protest against. I claim that radiation and surgery should not be arraigned against each other as mutually opposite methods, but rather that each should mutually sustain the other, that each should harmoniously walk hand in hand to the attainment of as successful an ultimate result of cure of cancer as modern science, up to the present moment, offers. The *x*-ray should be as much of an adjunct to surgery as the knife—the ultimate result of safety to the patient is in neither case a positive one—but the two agencies conjoined will prove to be the patient's greatest present advantage.

Cytodiagnosis of the Cerebrospinal Fluid.—Gioacchino Maiella has made clinical and experimental observations as to the cytological changes in the cerebrospinal fluid in cerebral abscess and meningitis produced by the injection of streptococcus. There is always in any form of acute meningitis a regular series of cytological changes in the fluid, beginning with polynucleosis, and going through the regular stages of mononuclear leucocytosis and lymphocytosis to return to the normal later. This series of changes is most marked in pyogenic meningitis. In cerebral abscess as long as the abscess is confined to the white substance there are no cytological changes, but as it approaches the cortex and reaches the meninges the regular series of changes begins. Lymphocytosis is the most delicate indication of meningeal reaction. In chronic meningitis there is lymphocytosis, especially in the presence of syphilis. In neuroses, cerebral tumors, and peripheral neuritis, as well as in cerebral focal lesions, there is no meningeal reaction and no lymphocytosis. In tuberculous meningitis lymphocytes are present. In tabes and paralysis there are numerous lymphocytes and some mononucleated leucocytes.—*Giornale Internazionale delle Scienze Mediche.*

Periodic Vomiting with Acetonuria in Children.—Vincent Dickinson describes the abrupt onset, the absence of previous gastrointestinal disturbance, the absence of anorexia, the absence of gastric pain, and the slight elevation of temperature, which, together with the character of the vomiting, are the most important signs to be considered in this affection which he has so carefully observed. The vomiting is produced by regurgitation, and is generally watery. The vomited matter is at first abundant, but diminishes by degrees. The attacks occur several times a day, either spontaneously or excited by movement. During the attack the breath has a distinct smell of acetone. The urine is scanty, and analysis shows a definite amount of acetone, and also often of indican. These attacks occur in the midst of perfect health in a child who is usually of a nervous or arthritic diathesis. The prognosis is almost always favorable. Different authorities advocate different methods of treatment, the only specific one founded on a conception of the pathology of the condition being that of Edsall. He considers it due to an acid intoxication, and gives a diffusible alkali, such as bicarbonate of sodium, in large doses.—*The British Journal of Children's Diseases.*

The Causation of Renal Dropsy.—F. A. Bainbridge concludes that the causation of renal dropsy is still very obscure, but he sums up the factors concerned in its production as follows: (1) A scanty output of urine which has been observed by Dickinson, and the fact that in chronic nephritis the onset of cardiac hypertrophy and increased urinary flow are often accompanied by diminution of the dropsy. (2) The retention in the body of sodium chloride and possibly other salts, owing to deficient excretory power on the part of the kidneys, as a result of osmotic changes, retention of salts necessitates the retention of water as well. (3) Increased katabolism in the muscles in consequence of a partial or complete loss of control over muscular metabolism by the kidneys; this excessive katabolism brings about the accumulation in the muscles and tissue-spaces of waste products. These waste products by a process of osmosis attract water from the blood into the tissue-spaces; when the amount of the latter in the tissue-spaces cannot be carried off by the lymphatics, oedema appears. As a rule, none of these factors is in itself a sufficient cause of dropsy, but at least two of them are always involved.—*The Practitioner.*

MEDICAL RECORD.

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TYPHOID BACILLI CARRIERS.

THE general acceptance of the dogma of the water-borne character of typhoid fever, so eloquently preached by the late Mr. Ernest Hart, did much to open the eyes of sanitarians to what must still be regarded as one of the chief sources of typhoid infection, nevertheless a too great insistence upon this as practically the only mode of extension of the disease has worked harm in a way, by retarding the recognition of other sources of infection. The great epidemics of typhoid fever, excluding those instances of camp infection occurring through the agency of insects, are usually no doubt traceable to contamination of the water supply, but we are beginning to appreciate the fact that there are also other sources of infection which must be recognized and guarded against if we are finally to succeed in exterminating this disease.

It has long been known that convalescents from typhoid fever may harbor for a time the specific bacilli, and that consequently the excretions from these persons may be a source of danger, but it is only recently that it has been discovered that the intestinal canal or the gall-bladder of a perfectly healthy person, who may have had the disease at some remote period or who has merely been in intimate relation with typhoid patients, may afford a more or less permanent culture place for the Eberth bacillus. Such persons, all unconsciously to themselves and to others, are constantly excreting typhoid bacilli which may find their way into the food prepared in the houses where they dwell or which may be carried into the water supply of a community and so initiate an epidemic the origin of which appears inexplicable. Kayser of Strassburg reported last year an instance of this sort in the person of the proprietress of a bakery. She had had typhoid fever two years ago, but had recovered and was in apparently perfect health. It was noticed, however, that almost all of the employees of the bakery suffered from intestinal troubles soon after beginning their work, and several died of typhoid fever. Suspicion was at last directed against her, and an examination of her fecal discharges revealed the fact that they were loaded with typhoid bacilli. The employees took their meals in the bakery, and these were usually prepared by the proprietress.

At a recent meeting of the Biological Society of Washington a similar case was reported by Dr. George A. Soper of this city. The account which he gave was one of a household epidemic of typhoid fever occurring in Oyster Bay, N. Y., during the summer of 1906. Of 11 persons 6 developed positive cases of typhoid fever between August 27 and September 3. Several suspected sources—water, milk, vegetables and fruit, and soft clams—were excluded by careful study and examination. Repeated sanitary analysis of the water supply and failure to detect subsoil pollution by fluorescein tests of the drainage showed the infection was not water-borne. Typhoid fever was unusual in Oyster Bay, and there were no cases immediately preceding or following those under consideration. The milk and food supply of the infected household was common to others of the village without the occurrence of other cases. None of the patients had been absent for several weeks prior to the outbreak, and they therefore must have acquired the disease at home. The house and surroundings were in an entirely hygienic condition. The investigator inferred the occurrence of some unusual event prior to August 20, and found it in a change of cooks August 4. The new cook's term of service with this family covered a period of three weeks prior to and three weeks subsequent to the outbreak. She refused to give any information tending to connect her with the cases, but an independent investigation of her previous service disclosed a startling and significant history of typhoid fever. Despite the fact that her record for nearly two of the past five years is yet unknown, 26 cases of typhoid fever, including one death, are known to have been associated with her service in seven families during this time. The cases were almost entirely among the servants, and the initial case frequently occurred soon after the arrival of the cook. She did not admit to Dr. Soper that she had herself suffered from typhoid, but to three persons she is said to have previously testified to a mild attack. The evidence indicating the cook to be a competent cause of typhoid, she was taken into custody by the New York City Department of Health, March 11, 1907, and at the detention hospital a bacteriological examination was made. She was a large, healthy Irishwoman, 40 years of age. The urine was free of typhoid bacilli, but the stools showed great numbers nearly every day for the several weeks of observation. The blood gave a positive Widal reaction. Thus a healthy and vigorous subject was shown to be a chronic typhoid fever producer. It is probable that the gall-bladder harbored the offending organisms, but as the gall-bladder could be reached without operation this remains a conjecture.

The discovery of the existence of these bacilli carriers raises the question of what is to be done with them to protect the community from the infection which they carry. It is evident that they cannot all be segregated and kept prisoners until they consent to the removal of the gall-bladder, which is assumed to be the chief, though very possibly not the only, culture place of the typhoid organism. It would be difficult to obtain popular sanction to such interference with the liberty of apparently healthy individuals, and even if the measure were recognized as justifiable the number of the bacilli carriers would render it difficult of execution. An examination in Germany of 1,700 persons who had at some more or less remote period suffered from typhoid showed the persistence of the specific organism in the discharges of 3 per cent. If that proportion holds

throughout the community, the number of infection distributors must be very large, and it is probable that they play no inconsiderable part in preventing the reduction of the typhoid morbidity, despite careful inspection of the water supply and other usual sources of infection.

ACUTE DILATATION OF THE STOMACH.

This is a condition to which apparently little attention has been extended in this country, although numerous references to it are to be found in foreign literature. The condition is one of considerable clinical interest and importance, for it may be met with during normal convalescence from operations or from severe illness, and may be of such acute onset as to change the whole aspect of a given case. In most of the cases which have been reported the disease has progressed rapidly to a fatal termination, but with accumulated experience it is found that life may be saved by timely recognition and suitable treatment. The most recent study of the subject from the cases known in the literature has been made by L. A. Conner (*American Journal of the Medical Sciences*, March, 1907), whose analysis includes these to the number of one hundred and two. In a case observed by the author, the symptoms were of remarkably short duration, and vomiting was entirely absent. No immediate cause for the dilatation could be discovered, the only other pathological condition being an acute general miliary tuberculosis. Conner thinks that the dorsal position in which the patient was constantly kept, and the almost complete abstention from food favored the production of mesenteric obstruction of the duodenum, and that this may have been a causative factor in the production of the acute dilatation of the stomach.

A study of the collected cases shows that acute gastric dilatation is especially frequent after operations under general anesthesia. In a majority of the cases there was an associated dilatation of the duodenum. The most common cause of such duodenal obstruction is apparently a constriction of the lower end of the duodenum between the root of the mesentery, which crosses in front of it, and the vertebral column. This can occur only when the mesenteric root, with the superior mesenteric artery which runs in it, is stretched tightly across the duodenum. Such a state of affairs is apparently possible only when traction is exerted by the small intestine hanging over the brim of the pelvis. The development of mesenteric constriction is favored, therefore, by whatever facilitates the entrance of the small intestine into the true pelvis. Such conditions are the dorsal position, a mesentery of suitable length, and an empty and collapsed state of the gut. In addition to these, we have those factors which render the duodenum more liable to compression, such as increased lordosis of the lumbar vertebræ and a low position of the duodenum. It is uncertain whether the dilatation of the stomach or the mesenteric obstruction of the duodenum constitutes the first step in the vicious cycle by which both conditions are made worse, but there seems to be little doubt that in some cases at least the duodenal obstruction is primary.

The physical signs and symptoms of acute gastric dilatation are usually so distinct that the diagnosis should not be difficult if the possibility of such an occurrence be kept in mind. The mortality is high, 72 per cent., but there is evidence at hand that the condition can be controlled and cured if the diagnosis is made and suitable treatment instituted before complete collapse of the patient has occurred. The effectiveness of such measures will depend to a large extent on the time at which they were applied. The first thing to do is thoroughly to empty the stomach, and this should be repeated at regular intervals. Nutrition should be maintained by rectal feeding. As duodenal obstruction has been found to be present in 36 per cent. of the fatal cases, it is well to assume that it may be present in more, and postural treatment should always be tried. This consists in allowing the patient to rest on the abdomen instead of on the back. The results of operative treatment have not been satisfactory as a general thing.

THE SUBCUTANEOUS INJECTION OF SALT SOLUTION IN CHILDREN.

In no department of medicine should therapeutic simplicity be so assiduously cultivated as in pediatrics. The infantile organism is particularly susceptible to infection and intoxication and the manifestations of both of these conditions are more sudden and violent, cause greater febrile disturbance and marasmus, and are also more frequently accompanied by grave adynamic conditions in the child than in the adult. The heart, although its resisting power does not appear to be inferior, is apparently more apt to be attacked by toxic action, whether of exogenous or endogenous origin. This fact is especially evident in those forms of disease which are characterized by excessive drain of fluid from the body, in which we have to deal not only with the intrinsic action of the toxic substance on the heart, but also with the difficulty of maintaining the normal circulation of the blood under the abnormal conditions present.

The free use of stimulants was formerly the common mode of combating these conditions, although now we have come to recognize the value of diluents to restore the normal density and physiological condition of the blood, and thus to ease the strain on the heart muscle. The introduction of physiological salt solution into the blood stream by direct infusion or hypodermic injection seems the method *par excellence* for accomplishing this purpose. Baginsky (*Folia Therapeutica*, January, 1907) again calls attention to the particular value of saline infusions in preventing damage to the heart in a variety of conditions, and also in replacing fluid lost through diarrheal or other diseases. He reports a number of cases in which the method was employed with signal success. The most effective manner of application, according to this author, is with a large hypodermic syringe, by means of which from 100 to 200 c.c. may be injected at a time. Even in the case of very young infants of only a few weeks, conditions of extreme prostration and marasmus were successfully treated by this method.

The Effect of German University Life on the Heart.

A dissertation of peculiarly Teutonic flavor appears in the *Münchener medizinische Wochenschrift* of January 8, 1907. Its author, Dr. Bingel, has made it his task to investigate the condition of the heart and blood-vessels of a large number of university students, particularly with a view to determining whether or not the conventional overindulgence in beer and the unduly violent exercise embodied in the student duels was followed by any immediate and demonstrable bad results. It appears that a very considerable proportion of the students during the first months of the university career suffer from mild symptoms of circulatory disorder, such as uncomfortable sensations in the cardiac region, palpitation, sensations of thoracic compression, gastric disturbances, bodily fatigue, etc. The occurrence of these symptoms the author explains by the complete change in the manner of life that takes place when the young man leaves his home and begins his university course. As three potent factors he recognizes the consumption of large quantities of alcoholic beverages, principally beer, the unwonted physical exercise attending the customary pursuits of fencing and horsemanship, and finally, the active social intercourse that is so important a part of German student life. As the result of his examinations of a considerable number of students made at varying intervals, and also in conjunction with fencing contests, he arrives at the consoling conclusion that the conditions above mentioned, while sufficient to give rise in some cases to a certain degree of subjective disturbance, are not likely to have any actually damaging effects on a previously healthy heart. On the other hand, if this organ has already been subjected to severe strain or actual injury as the result of infectious diseases or other factors in early life, there is a distinct danger that a condition of cardiac insufficiency may arise. The question of the effect of violent exercise on the circulatory system has already been made the subject of extensive study in the cases of our own college athletes, with results that in general are in accord with those of Bingel; but it must always be remembered that overexertion or abuse of any sort consistently persisted in in early manhood, even if it gives rise to no immediate lesions that can be demonstrated, may, and undoubtedly often does, predispose to a breakdown later in life.

The Public Control of Tuberculosis.

The committee on the prevention of tuberculosis of the Charity Organization Society of the City of New York, in a recent bulletin, calls attention to the widespread public interest in the subject of tuberculosis and notes how systematically and energetically the work of organization is being pushed forward throughout the whole country. At the meeting of the National Association for the Study and Prevention of Tuberculosis, held last week in Washington, it was reported that 15 States are now actively working along State lines to prevent tuberculosis, while in 8 other States definite steps have been taken which it is expected will lead to similar organizations within the year. An equally encouraging outlook is presented in the secretary's report of city organizations. Nine of these local committees have been formed among cities of over 100,000 population in the past year, and definite plans are under way in Toledo, St. Paul, Los Angeles, and Fall River, so that of the 38 cities of this class only San Francisco, Kansas City, Omaha, St. Joseph, and Memphis remain without local organization at the present time, and of these only Omaha and Memphis are without plans for the early formation of such organizations. While carrying on this work communities of lesser population have not been neglected, definite organizations having been formed during the year in 42 cities and towns, Massachusetts and New Jersey heading the list in this respect, each with 10 local societies. The movement for organization is also well advanced in 20 other cities, and there are now 23 States and nearly 100 cities and towns in which there are active societies or definite plans for forming such.

Dr. Knopf Misquoted.

In a report of the recent meeting of the Tuberculosis Association in Washington, the Philadelphia *North American* quoted Dr. Knopf of this city as favoring the use of morphine in the last stages of tuberculosis in order to hasten the inevitable end. The remarks of Dr. Knopf were misinterpreted by the reporter of the lay journal. He advocated the use of morphine in doses sufficient to relieve the patient's sufferings, but that, as every medical man knows, would prolong life instead of shortening it. It is unfortunate that representatives of the lay press can publish reports of medical meetings without having these previously submitted to some one competent to revise them when necessary, and it is strange that the editors of these journals do not see that such revision would be to their own advantage in insuring the accuracy of the reports. What the accounts would thereby lose in sensationalism they would gain in truthfulness, and physicians would be spared the pain of misrepresentation. The instance here noted is a familiarly flagrant one, as Dr. Knopf was reported to be in favor of shortening life when he really advocated measures for prolonging life to its utmost limit.

News of the Week.

The New Medical Examination Law.—Governor Hughes of this State has signed the bill abolishing the three existing State board of medical examiners and providing for a single board of examiners to be representative of the various schools. The new board is to be composed of nine members. Under this act the osteopaths for the first time secure recognition in this State. The bill recognizes as "practising" osteopaths the three hundred now exercising their calling in this State, but in future all persons desiring to practise osteopathy must pass an examination before the State Board of Examiners.

Child Labor Bill Signed.—Governor Hughes has signed the Page child labor bill, which provides that no minor under sixteen years of age shall be employed or permitted to work in any factory in this State before 8 A.M. or after 5 P.M., or more than eight hours in any one day. At present the permitted hours are 6 A.M. to 7 P.M. The act will not take effect until January 1, 1908.

Hospital Transfer Bill Vetoed.—Mayor McClellan has vetoed the bill recently passed by the Legislature prohibiting the transfer, under certain conditions, of patients from the different hospitals of the city to Bellevue Hospital.

Defeat of the Osteopathic Bill in Illinois.—A bill to place an osteopath on the Illinois State Board of Health failed of passage in the House, May 2. Another bill introduced was designed to establish

a standard for medical and osteopathic schools, to license osteopaths without examination, and to confer on them all the rights and privileges which physicians in the State now have. This bill, like many other osteopathic bills introduced in the Illinois General Assembly since 1897, was killed.

A Temperance Movement.—Under the auspices of the American Medical Society for the Study of Alcohol and Other Narcotics it is proposed to hold at the Atlantic City meeting of the American Medical Association a so-called temperance lunch, at which the alcohol question is to be discussed in a more or less informal way. The lunch will be given at the Hotel Marlborough-Blenheim on June 5 at one P.M., and all members of the American Medical Association and their families are to be invited to be present. A number of prominent physicians and ex-presidents of the American Medical Association will make brief addresses. The president of the American Medical Society for the Study of Alcohol and Other Narcotics is Dr. Henry O. Marcy, and the secretary is Dr. T. D. Crothers.

For an International Language.—The Delegation for the choice of an International Auxiliary Language, an organization having its headquarters in France, has issued an appeal requesting learned societies, professional associations, chambers of commerce, and other kindred organizations, to record their approval of the project of encouraging the adoption of a universal auxiliary language, and to name a delegate to act in the matter. The organization is prepared to send to the offices of societies a supply of circulars giving all useful details of its organization, and to send blanks for the signatures of individual University professors. The Secretary for the United States is J. F. Twombly, 34 Green street, Brookline, Mass.

The Bicentenary of Linne.—The two hundredth anniversary of the birth of Linnæus will be celebrated by the University of Upsala and also by the Academy of Sciences in Stockholm, beginning May 23. The name of Linnæus is closely connected with the Stockholm Academy. Before he was appointed to a professorship in Upsala he lived in Stockholm as a practising physician, and together with five other men founded the Swedish Academy of Sciences, of which organization he was the first president. In connection with this celebration the Academy will issue a number of publications, among which are important writings of Linnæus now out of print, and also a series of discussions of Linnæus's work in different branches of natural science, notably botany and zoölogy, geology, mineralogy, and medicine. In addition the Academy is having a set of Linnæus medallions struck in gold, to be given as special prizes for noteworthy work in the natural sciences. The botanical seminary of the University of Nebraska is also to celebrate the anniversary.

Vegetarian Recruits in Germany.—Some curious statistics are reported as having been gleaned in southern Baden during the recent enrollment of recruits. In the Lindau and Allgau districts out of 604 young men liable to service only 20 were found to be up to the physical standard of the military authorities. Two hundred and seventeen were placed on the doubtful list, and the unusual number of 367 were put aside as wholly unfit for active service. It is stated that the peasantry of those districts were at one time among the most robust in the empire, but owing, in the first place, to the dearness of meat and the fact that milk, which once was a staple article of food, is now carefully collected for the cheese factories, their physique has sunk to a dangerously low level. Their principal food for years has been potatoes and skimmed milk.

Genius and Hydrocephabus—Professor von Hanseman of the Berlin University, who has recently examined the brain of Theodore Mommsen, the historian, states that he, like Hermann von Helmholtz the physiologist, and Adolph Menzel the painter, was the subject of hydrocephalus. He suggests that on this basis an explanation may be offered of Mommsen's eccentricity, Menzel's extreme irritability and occasional fainting fits, and the spasmodic seizures from which Helmholtz suffered.

Health Statistics in New Jersey.—According to the monthly report of the New Jersey State Bureau of Statistics, the total number of deaths in that State during April was 3,053, an increase of 512 over the previous month and 812 more than the monthly average for the past nine months. In explanation of this increase it is suggested by the Bureau that the unusual weather conditions of the month may have played a part in the high mortality.

Vacancies in the Naval Medical Service.—Owing to the lack of applicants for positions there are now sixty-four vacancies in the naval medical service, and Congress is to be asked to take measures to make the positions more attractive. Surgeon General Rixey of the Navy has undertaken to give temporary appointments as acting assistant surgeons" to candidates who will pass a satisfactory preliminary examination and come to Washington for instruction. They will receive six months' special training at the Naval Medical School and Hospital, recently established there, or at the Mare Island Naval Hospital. At the end of that course they will receive appointments as assistant surgeons, with an annual salary of $1,700, supplemented by allowances for mileage, and other inducements.

Syphilis in Monkeys.—Geheimrat D. Neisser, who has been conducting a series of experiments on the syphilization of monkeys in Batavia, has been granted a further leave of absence until October. He will then return to Breslau, where he will continue his investigations.

To Study the Tsetse-Fly Disease.—Dr. Schilling, the chief of the Department of Tropical Disease in the Berlin Institut für Infektionskrankheiten, and his assistant, Dr. Jaffé, have been sent to Togo, where they will conduct a series of experiments on immunization against the tsetse-fly disease.

Famine Relief in Russia.—The Czar has signed a bill appropriating $3,000,000 for the relief of famine sufferers. Most of the amount is to be used for medical assistance in the scurvy stricken provinces.

Chinese Lepers in Canada.—The entire leper colony on D'Arcy Island, near Victoria, consisting of eighteen Chinese, has been sent to Canton, China. This comes as a result of an agreement between the Chinese and the Dominion Government. The Dominion held it was unfair for it to treat foreigners for a disease contracted in a foreign country.

A Suit for Slander.—The *Pacific Medical Journal* states that the College of Physicians and Surgeons of San Francisco has entered suit for $75,000 damages against Dr. Dudley Tait, former President of the Board of Medical Examiners, and Dr. Philip Mills Jones, editor of the *California State Journal of Medicine*, for slander and libel.

Filth in Cheap Lodgings.—Violations of all the laws in the city code or State statutes on the subject of health and comfort in the lodging houses of

Chicago were discovered by Inspector James T. Sullivan, of the Sanitary Bureau, during a recent inspection of West Side houses. Mr. Sullivan acted under orders of Health Commissioner Evans. Houses where eighty men slept in stifling rooms, with no ventilation, no fire escapes, but a narrow wooden stairway leading down from the front, walls caked with dirt, and floors covered with filth of every description were some of the things found. Commissioner Evans will endeavor to have these conditions corrected.

Clinic For Mothers.—It is believed that Chicago is to be the first city in the United States to have a regularly established system of mothers' clinics for the free instruction of parents in the care of children. Plans have been prepared for a building in which this novel scheme is to be inaugurated, and building operations will soon begin. The plan of establishing such a clinic is a direct outgrowth of a kirmess held last fall by the Children's Memorial Hospital. With the $25,000 raised by the Cribside Committee, a pavilion is to be erected as a part of the hospital's projected new equipment. In a specially equipped room of this building the first of the clinics will be held.

Antitoxin for Gratuitous Distribution.—The Illinois State Board of Health has been allowed $15,000 annually for free distribution of antidiphtheritic serum outside of Chicago. The appropriations of the State Board of Health have been materially increased by the Legislature, the sum of $119,200 having been appropriated for the work of the board. This is very gratifying, when the General Assembly, in 1905, only appropriated the sum of $83,320.

New Prize Fund in Laryngology.—At the recent meeting of the American Laryngological Association in Washington, announcement was made of the establishment of a prize fund of five hundred dollars by gift of the retiring President, Dr. A. W. de Roaldes of New Orleans. Further announcement as to time and conditions of the award of the prize will be made when such details shall have been considered by the Council of the Association. The fund will be known as the de Roaldes Prize Fund.

To Combat the Plague.—The Japanese Government has announced its intention of accepting President Roosevelt's proposal for the holding of an international conference at Tokio to consider measures for stamping out the plague.

Changes in the Columbia University Faculty.—At the last meeting of the Trustees of Columbia University Dr. Frederick R. Bailey, Adjunct Professor of Histology and Embryology, was assigned a seat in the Faculty. The resignation of Dr. George H. Fox, Professor of Dermatology, was accepted. Dr. Francis Huber was appointed Professor of Clinical Medicine, Dr. Frederick Peterson, Professor of Psychiatry, Dr. Andrew J. McCosh, Professor of Clinical Surgery, and Dr. Pearce Bailey, Adjunct Professor of Neurology.

Medical Department for Louisiana State University.—According to *Science*, it is said that the Louisiana State University will establish this year a medical department in New Orleans.

Board of Surgeons for Fire Department.—Fire Commissioner Lantry has formed the surgeons of the Fire Department into a board resembling that of the Police Department. The following are the officers of the board: *President*, Dr. E. B. Ramsdell; *Vice-President*, Dr. Joseph E. Smith; *Secretary*, Dr. Herman L. Reis. Newly appointed surgeons are Dr. Robert W. Hall and Dr. John J. White.

Dr. A. Rose of this city has been elected a corresponding member of the Medical Society of Athens. The honor was conferred in recognition of his efforts in behalf of reform in medical nomenclature.

Dr. O. H. Pinney, class of 1903, Medical College of Ohio, now of Madisonville, has been appointed by the Presbyterian Board of Foreign Missions as Medical Missionary to Benito, a port on the west coast of Africa.

Dr. E. S. McKee of Cincinnati has been elected a member of the New York Medico-Legal Society and appointed one of the editors of the *New York Medico-Legal Journal*.

Dr. William L. Richardson, Dean of the Harvard Medical School, has handed in his resignation, to take effect on September 1, 1907. Dr. Richardson has been professor of obstetrics since 1886, and dean since 1893.

Dr. L. Blake Baldwin of Chicago has been appointed City Physician by Mayor Busse.

International Congress of Physiologists.—The seventh International Congress of Physiologists will be held this year at Heidelberg, August 13 to 16, under the presidency of Professor A. Kossel. The previous congresses were held at Basle, in 1889; Liége, in 1892; Berne, in 1895; Cambridge, in 1898; Turin, in 1901, and Brussels, in 1904.

Polish Men of Science and Physicians.—The tenth congress of this organization will be held this year at Lemberg some time between June 16 and July 24. There will be a scientific and medico-hygienic exposition in connection with the congress.

Norfolk South (Mass.) District Medical Society.—At the annual meeting of this society, held in Boston on May 2, the following officers were elected for the ensuing year: *President*, Dr. N. S. Hunting of Quincy; *Vice-President*, Dr. O. H. Howe of Cohasset; *Secretary, Treasurer*, and *Librarian*, Dr. Charles S. Adams of Wollaston.

Essex North (Mass.) Medical Society.—At the meeting of this society held in Lawrence on May 1 officers were elected as follows: *President*, Dr. W. J. Sullivan, Lawrence; *Vice-President*, Dr. C. E. Durant, Haverhill; *Secretary* and *Treasurer*, Dr. M. D. Clarke, Haverhill; *Corresponding Secretary*, Dr. R. D. Hamilton, Newburyport.

Southeastern Michigan Homeopathic Medical Society.—Officers were elected as follows at the meeting of this society held in Detroit on April 26: *President*, Dr. E. J. Kendall; *First Vice-President*, Dr. Hale of Memphis, Mich.; *Second Vice-President*, Dr. E. L. Orneman; *Secretary*, Dr. F. E. Thompson; *Treasurer*, Dr. James I. Murray.

Taylor County (W. Va.) Medical Association.—At the meeting of this association held in Grafton on April 30 officers as follows were elected: *President*, Dr. C. A. Sinsel; *Vice-President*, Dr. D. C. Peck; *Secretary*, Dr. J. H. Doyle; *Treasurer*, Dr. A. H. Thayer.

Cuming County (Neb.) Medical Association.—At the meeting of this society recently held at West Point officers were elected as follows: *President*, Dr. W. H. Francis, Bancroft; *Vice-President*, Dr. C. S. Grabin, Beemer; *Secretary-Treasurer*, Dr. H. L. Wells, West Point.

Missouri Institute of Homeopathy.—This organization, at the meeting held in Kansas City on April 25, elected the following as officers: *Presi-*

dent, Dr. F. M. Martin of Maryville; *Vice-Presidents*, Dr. Edward Andruss of Holden and Dr. J. H. Gilkerson of Warrensburg; *Secretary*, Dr. MacLay Lyon of Kansas City; *Treasurer*, Dr. D. M. Gibson of St. Louis.

Jackson County (Ark.) Medical Association.—At the recent meeting of this organization held at Newport, the following officers were elected: *President*, Dr. H. O. Walker; *Vice-President*, Dr. O. A. Jamison; *Secretary*, Dr. G. K. Stephens; *Treasurer*, Dr. O. E. Jones.

Maine Medical Association.—By a vote of the censors of this society the date of the annual meeting has been changed so as not to conflict with the meeting of the American Medical Association. The new dates are for Wednesday, Thursday, and Friday, June 12, 13, and 14, 1907, at Lewiston.

"The Diagnostician" is the title of a new monthly medical journal which has made its appearance in Cincinnati.

Hospital Bequests.—By the will of the late James Henry Smith, who died suddenly in Japan a few weeks ago, St. Luke's Hospital and the Orthopedic Hospital, of both of which the testator was a trustee, are to receive the sum of $100,000 each.

The Late Dr. Otis.—The following resolution was passed at the recent meeting of the Society of Genitourinary Surgeons:

Resolved, That in the death of our President, Dr. William K. Otis, we have lost an honored associate, active, talented, and devoted to the interests of his profession. More still, we have lost a sincere and true friend who had endeared himself to us all and whom we shall greatly miss.

Voted, That this Resolution be sent to Dr. Otis' family with assurances of our sincere sympathy and regard.

Obituary Notes.—Dr. MARVIN S. BUTTLES of this city died on May 9 after a long illness. Dr. Buttles was born in Otis, Berkshire County, Mass., in 1833, and was graduated from the medical department of the University of the City of New York in 1864. He was for some years president of the East River Medical Association, and was also professor of obstetrics in the medical department of the University. From 1865 to 1872 he was surgeon of the 71st regiment, New York State National Guard, and was the founder of the Olivet Female Infirmary. He had been for many years president of the Hotel Savoy Company, and president of the Hamilton Fire Insurance Company.

Dr. GEORGE NICHOLS of Northfield, Vt., died on April 27 of nephritis. He was born in Northfield in 1827, and in 1851 was graduated from the Vermont Medical College at Woodstock. He served as surgeon in the 13th regiment Vermont Volunteers, and in 1865 was appointed Secretary of the State of Vermont. He had also held numerous other official positions. He retired from active life about ten years ago.

Dr. WILLIAM H. LEONARD of Minneapolis, Minn., died on April 28 at the age of eighty-five years. He was the oldest practising physician in the city and came to St. Anthony Falls in 1855. He served in the Civil War as surgeon, and was the first health officer of the city after the union of Minneapolis and St. Anthony. For twenty-five years he was a member of the State Board of Health, and was prominent in the establishment of the State Board of Charities and of the State Lunacy Commission. He was three times president of the Minnesota State Homeopathic Institute. He was a graduate of Yale University, and of the University of the City of New York.

Dr. JOHN T. MAIN of Jackson, Mich., died on May 1 at the age of seventy-six years. He was born in Albion, Me., and was graduated from Harvard University in 1857. He had practised in Michigan for nearly fifty years, and had served as president of the State Medical Association. He served as a member of the Jackson Board of Health and in other official positions.

Dr. THOMAS M. MARCELLUS of Charlottesville, Va., died on May 7 of cancer of the stomach, at the age of fifty-six years. He was born in Canada, and after spending his boyhood in Minnesota was graduated in medicine in the University of Michigan. For seventeen years he practised in Sleepy Eye, Minn., but about twelve years ago removed to Charlottesville on account of failing health.

Dr. JOHN MACMILLAN of Pictou, N. S., died on May 2 at an advanced age. He was a native of London, but came to Nova Scotia about fifty years ago, and had practised in Pictou for over thirty years.

Dr. J. N. MEDBERRY of Webster City, Ia., died on May 1 at an advanced age. He was the oldest practising physician in that part of the State, but two years ago was obliged to give up active work on account of a paralytic stroke. He had been a resident of Webster City for thirty-two years.

Dr. S. G. MILNER of Detroit, Mich., died on May 2 at the age of sixty-one years. He was graduated from the University of Michigan in 1872. After practising in Grand Rapids he removed to Detroit in 1900.

Dr. JOHN W. BRENNAN of this city died at the age of seventy-eight years on May 10, after a long illness. He went to California in 1849, but later studied medicine, and in 1862 was graduated from the College of Physicians and Surgeons of this city. During the Civil War he was surgeon to General H. Berdan's regiment of sharpshooters, and was wounded at Gettysburg.

Correspondence.

THE TRUE "MORRIS APPENDIX"

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Notwithstanding the detailed description of harmful involution of the appendix, in the MEDICAL RECORD for April 6, 1907, a physician recently explained to another in my presence that "the true Morris appendix was one in which scar tissue following inflammation entrapped nerve filaments." An extract from one of the journals also gets the thing wrong, although the MEDICAL RECORD was probably in the hands of the writer of the note. It seemed to me that the description which I gave was clear enough to avoid the possibility of misquotation.

If physicians are bound to call a certain type of appendix by my name, it puts me in a responsible position. The appendix that I am trying to bring to the front is not one in which scar tissue following inflammation entraps nerve filaments. The scar tissue is hyperplastic connective tissue, representing a process of evolution, and resulting in involution of the appendix. Not only does the involution change not follow inflammation (according to my observations), but it is an actual safeguard against infection, because it removes the structures which are involved in the infections. The hyperplastic connective tissue irritates nerve filaments which persist, and it sends patients to the doctor with "intestinal dyspepsia" and a question about the appendix, but it does not put patients in bed. The part which this type of appendix plays in some chronic digestive disturbances was noted rather accidentally. In going over some specimens of normal looking appendices which had given chronic symptoms, I noticed under the microscope that persisting nerve filaments were surrounded by such groups of new cells that a high degree of irritation must have been present, and the subject was worked out backward from this observation

A "scar appendix" following an inflective process is another affair altogether. Such appendices often do cause digestive disturbances, but chiefly, I think, because of mucous inclusions and adhesions, rather than from irritation of entrapped nerve filaments, as in the appendix which is undergoing harmful involution. The "scar appendix" causes occasional digestive disturbance. The appendix which I describe causes persistent discomfort, and so-called intestinal dyspepsia, and is probably the most common factor in obscure cases of this sort of dyspepsia. Almost any physician engaged in general practice can find from one to ten of the appendices which I describe among the patients at present under his care.

ROBERT T. MORRIS, M.D.
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OUR LONDON LETTER.

(From Our Special Correspondent.)

GLASGOW UNIVERSITY AND INFIRMARY—SILVER FILIGREES IN HERNIA—ABSCESS IN MUSCULAR TISSUES—SERUM FOR APPENDIX CASES—UTERINE HEMORRHAGE—STYPTOL-MERCURY—HYGIENIC AND TEMPERANCE CONFERENCE.

LONDON, April 20, 1907.

THE Prince and Princess of Wales, who are visiting near Glasgow, drove into that city on Tuesday to open the new buildings of the University and fulfill some other public engagements. The additions will be devoted to the accommodation of the departments of physiology, materia medica, forensic medicine, natural philosophy, and public health, and have cost £100,000. The Prince made an effective speech, mentioning that the money had been found by the ever generous west of Scotland, and saying that if in years to come further extensions should be required he was confident they would be carried out in the same generous spirit which had characterized the undertaking of which the completion was that day celebrated. The Prince and Princess had the degree of Doctor of Laws conferred upon them, and there was great enthusiasm as they ascended the dais in their academic robes to be capped by the Chancellor, Lord Kelvin. Other distinguished persons also received honorary degrees. Their Royal Highnesses had previously received the freedom of the city with all the ancient ceremonial and the enthusiasm of all present, the Prince thus becoming a burgess and the Princess a burgess and Guild Sister of the City and Royal Burgh of Glasgow. Their Royal Highnesses signed the roll, and the Prince returned thanks to the city and corporation for the cordial welcome they had received, and expressed pleasure that one of their first duties as the youngest burgesses was to lay the foundation stone of what would be a complete reconstruction of their Royal Infirmary, a work which testified to the liberality of the richer members of their community in providing the best means of alleviating the sufferings of the sick poor.

On Wednesday the Prince and Princess again went to Glasgow from Blythswood House, and were again received with the utmost enthusiasm. The first ceremony that day was the laying of the foundation stone of the reconstruction buildings of the Royal Infirmary. On both days the weather was proverbially royal, and the lavish decorations of the route were therefore unspoiled and the gaiety of the proceedings throughout a satisfaction to the enormous crowds. The foundation stone of the existing Royal Infirmary was laid in May, 1792, and the silver trowel presented to the Prince recorded the fact. The new buildings will cost about half a million sterling and will provide for 600 patients. The Prince, having "truly laid" the foundation stone, replied to an address presented in another speech, in which he referred happily to the value of such institutions, the necessity of keeping pace with discoveries like those of Lord Lister, whose eightieth birthday we have lately celebrated, and of whose work at this hospital you are so justly proud. He congratulated Glasgow on making the reconstruction a memorial to Queen Victoria, as nothing would have more appealed to her heart, and said every year's experience impressed him with the importance of guaranteeing to the public, through whose liberality these institutions are maintained, a wise, sound, and businesslike administration. He concluded by commending this "splendid work to all who can afford assistance toward its completion." A review at Govan and other public engagements were duly carried out amid the greatest enthusiasm, but as they have not the claim on your space of the medical and university schemes, I must pass them by.

Mr. Lawrie McGavin has introduced to the Clinical Society a modified method of applying prepared filigrees of silver wire for the cure of very large or recurrent inguinal hernia in males. The success of Bartlett's method of dealing with abdominal hernia had led him to modify that method of implantation to meet the requirements in inguinal hernia, the object being to establish an operation which would justify the term a "radical cure," and do away with the use of a truss. This object had been effected in cases beyond the scope of ordinary operation, and no complication had arisen in any instance. Pain and discomfort had been entirely absent. Mr. Spencer said he thought the plan an important advance in surgical technique. He was supported by Mr. Drew. Mr. Barker thought the plan might be valuable in bad cases, though he had no experience with filigrees.

Mr. W. G. Spencer described a case of solitary acute suppuration in the psoas and iliacus muscles in a healthy boy of thirteen, who died four days after the onset without being relieved by incision. There had been no strain. The pus yielded a pure cultivation of *Staphylococcus pyogenes aureus*. At the postmortem no other lesions were found and no distant septic focus, such as has been discovered in other cases. There are a number such on record, but there seems no explanation of them, and it may be supposed to be a distinct affection.

Mr. Symonds had seen two cases, and attributed them to a general infection with a local strain. One had occurred in the pectoral muscle after a very slight injury. Mr. Drew had seen three cases, which followed impetigo in children. Dr. Wynter described a case which ran a typhoid course, and was found after death to have been infective suppurative psoasitis. Dr. Gordon Watson compared the cases with osteomyelitis, and described two occurring during the puerperium. Both recovered after incision of the abscess.

Messrs. Makins and Sargent presented a tabular statement of twenty-five cases of acute appendical peritonitis treated by injections of a multivalent serum from different strains of *Bacillus coli communis*. The cases were all severe, and six of them apparently such that no good could be expected. Of the twenty-five, recovery occurred in nine. In all the others improvement followed, toxic symptoms were relieved, localization of the infecting area was effected, and in the fatal cases death was delayed beyond the usual period. The improvement in the patients' comfort, the quietude and sleep that ensued, with a fall of temperature and pulse, justified extensive trials. Relief from vomiting in many cases was also obtained. The treatment appeared to be curative and was in no way dangerous. A successful case of treatment by this serum of an acute infection of the urinary tracts with *Bacillus coli communis*, under the care of Dr. H. G. Turney, was attended to, also report on the treatment of three cases of puerperal sepsis by Dr. Gordon of Manchester. Dr. L. Dudgeon thought the serum of great value if used early enough, but that it was no use in chronic cases without constitutional symptoms.

The use of drugs to restrain hemorrhage maintains its interest for every practitioner, and in estimating their value the majority will probably be influenced by their effect in menorrhagia. It is easy to say that in every case the cause of the bleeding should be determined before attempting treatment, which should be placed on a pathological basis. There are, however, a number of cases in which the most experienced physicians and expert gynecologists are unable to arrive at a positive diagnosis. Some enlargement of the uterus may be present, but it often is without producing hemorrhage. Want of tone in the uterine muscle is only a conjecture. The most careful bimanual examination finds no sufficient cause. Surgery being excluded, what are the remedies? The whole list of so-called astringents has been freely administered with more or less success in various cases. Sir A. E. Wright's researches have brought about a change in practice by showing that the coagulability of the blood may be increased by chloride of calcium. In the course of some operations surgeons have found that the blood has a watery appearance and its coagulability was below normal. The administration of calcium chloride is therefore being given with a view of inducing a more normal condition, and so lessening the tendency to hemorrhage. Gynecologists report that the calcium treatment is of great use in menorrhagia. Handfield-Jones combines with it gelatine phthalate with the best results where the excessive uterine hemorrhage cannot be shown to depend entirely on the condition of the mucous membrane, or to be to some degree due to morbid state of the blood. If permanent good is expected, he says it must be continued for a long time. Dr. Jervois Aarons of the Hospital for Women has also used the remedy with good results in a variety of cases, and has scarcely ever found it to fail to arrest bleeding—in climacteric cases never. Abel has used this drug locally in inoperable cancer, and thinks it is analgesic as well as astringent.

Speaking of drugs reminds me of the rehabilitation of mercury which has been going on for some years; not that we are likely to return to the excesses at one time practised, but that it is common enough now to hear "altera-

tive action" ascribed to the drug, though a few years ago such expressions were mostly regarded as behind the age. It is not unusual to see small doses given as "correctives of the liver," and, again, repeated small doses or inunctions as absorbent. A person in my room spoke of the use of ¼-grain of calomel as an excellent "hepatic," and that elicited the remark of another that he had for many years given in doses of 1/5 gr. for that purpose.

Professor William Carter lately stated at the Liverpool Medical Institute that he thought mercury too much neglected as apart from syphilis. He cited cases of peritonitis, meningitis, and other diseases in which he had seen it of value. Where organic change rendered recovery impossible it might afford relief. He showed specimens of bile alone, and others to which calomel had been added, the former very offensive, the latter not so. Both had been kept about ten days. To a third specimen calomel had been added after decomposition, and had deodorized it. He remarked that its insolubility allowed the drug to reach the duodenum unaltered, and there it came into contact with the bile, and might render absorbable toxins harmless. Dr. Carter's views were indorsed by several members, one remarking that it was difficult to overestimate the alterative action of mercury, another commending it in chronic valvular disease of the heart when compensation seems about to fail, a third saying it was the best intestinal antiseptic, but considering this effect as indirect, being caused by the increased flow of bile produced. One gentleman mentioned the occasional salivation set up by small doses, especially in old patients with septic mouths. How different this discussion seems to what some of us heard when mercury was said to be discrowned and podophyllum about to take its place!

A conference on the teaching of hygiene and temperance in all the universities and schools of the British Empire was held here on Tuesday. It was attended by many doctors, some of the Colonial premiers and ministers now in London, and some enthusiasts about education. Among the latter, some who think themselves experts did not do justice to their assumption, but, on the whole, the conference will be useful, for it showed us what the colonies had done in the matter. Lord Strathcona, presiding at the morning sitting, said that the teaching of these subjects in Ontario had been productive of great good. Mr. Deakin, premier of the commonwealth of Australia, said that there, too, the importance of such teaching was not only recognized but acted upon as a matter of administration. Sir Philip Jones, Sir William Collins, and Sir J. Cockburn all spoke in the same sense. In the afternoon session papers were read showing what had been done in France and Scandinavia. Sir Victor Horsley urged the need of reform in the Board of Education. He held there ought to be an anthropometric survey and medical inspection of all the children, all available facts to be collected for the benefit of the education minister. As to temperance, he said 72 per cent. of the secondary schools might be truthfully described as total abstinence schools. They owed thanks and appreciation to those masters who had quite quickly trained the nation in temperance by their precepts and example. It was amazing what senseless habits were persisted in by some old established schools, where custom froze up intellect and boys were given alcohol. They could not conceive how this could be, but it was simply continuing an ancient custom. The whole system of education needed revision from a medico-scientific point of view. After some discussion a resolution was adopted to the effect that to meet the responsibility of the State, it is essential that a medical department be instituted in the Board of Education.

OUR PARIS LETTER.

(From Our Special Correspondent.)

THE TREATMENT OF SLEEPING SICKNESS—HEMOSTASIS IN HEMOPHILIA—DIET IN DIABETES—NECROLOGY.

PARIS, April 15, 1907.

AT the Académie de Médecine Prof. Laveran made an interesting report on the treatment of sleeping sickness. He recommended the use of atoxyl as indicated by Wolferstan Thomas of Liverpool. Under the action of this drug the febrile attacks disappear, the swollen glands diminish in size, the nervous symptoms improve, the patients increase in weight, and the trypanosomes disappear from the body, except from the cerebrospinal fluid; but relapses occur if the treatment is withheld too long. For the administration of the atoxyl the hypodermic injection seems to be the best method, using a 1 to 100 solution. For serious cases intraspinal injections are made.

At the meeting of the Société de Chirurgie, Broca read an interesting paper on Dr. Paul Emile Weil's work on hemostasis in cases of hemophilia. Although hemophilia is somewhat rare, it is not so much so but that surgeons sometimes find themselves confronted by an uncontrollable hemorrhage or find it necessary to perform emergency operations on patients suffering from hemophilia.

The principal blood change in hemophilia consists in the great slowness of coagulation, which does not take place in less than from one to nine hours. The important fact demonstrated by Dr. Emile Weil is that in cases of hemophilia the serum of man or of animals used when fresh favors coagulation to a marked degree, so that it takes place regularly within five or ten minutes. To check a hemorrhage in an adult, 10 to 20 c.c. of serum from fresh blood injected into the veins, or 20 to 30 c.c. injected subcutaneously is ordinarily sufficient. Sera from the blood of man, rabbits, horses, and cows are equally good so long as they are fresh. Following the report of Broca, Tuffier spoke of the well-known action of artificial serum on coagulation. As artificial serum consists of a solution of sea salt in the proportion of 8 to 100, and this solution can easily be prepared at all times, he thought that even if its effect was not quite so good as that of other sera, still that its use should be advised and it should be considered as a useful agent.

Dr. Marcel Labbé presented an interesting communication to the Société Médicale des Hôpitaux de Paris on the comparative value of the different foods prescribed in the dietaries for diabetics. According to Mossé the potato seems to be one of the best articles of diet and superior to the other carbohydrates. It proves more acceptable even in large amounts, it can be used instead of bread, and lends itself to various preparations in which a large amount of fat can be used. Oatmeal is also easily taken by diabetics, but has several drawbacks. Patients tire of it quickly, and it can be taken only in small quantities, and, moreover, it often causes diarrhea or indigestion. Dry vegetables are extremely good and may be prescribed in the dietary. They contain a large proportion of albuminous material as well as mineral salts and so are very good articles of diet. Cakes of rice are also pleasing to the diabetic patient, and on account of their digestibility can be used as a substitute for bread. Milk is not to be recommended, and bread also has always been found an unsatisfactory article of food for diabetics' dietary.

Berthelot, the world-renowned and illustrious chemist, has just died at the age of eighty years, thus bringing to a close his marvelous and fruitful scientific career. The work which he has done is well known, but for two things he is especially famous. The first is thermochemistry, which, entirely built up by Berthelot, permits one to see *a priori* the results of chemical reactions. The second is his research work on synthetic chemistry. He was the creator of organic synthesis and on account of that he deserves to be called the founder of organic chemistry. With his extraordinary ability to work and his unusual memory Berthelot was able to do an almost inconceivable amount of investigation upon explosives, the formation of alkaloids, on the persulphates, on electricity, and on the chemical reactions caused by radium, etc. He received many honors and distinctions; he was President of the School of Pharmacy, Member of the Académie de Médecine, Professor of the Collège de France, Member and Life Secretary of the Institute. As Minister he fulfilled the various and diverse duties of his position. His entire life was a splendid lesson of work, of perseverance, and of disinterestedness, for he made no financial profit from his discoveries. He has been given the honor of burial in the Pantheon.

Professor Hergott of Nancy has also died and with him there is lost one of the great figures of the old French School of Strassburg. He taught obstetrics and put and will be remembered on account of his work on the treatment of fractures and the invention of the plaster splints which bear his name.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

SEGREGATION OF LEPERS—ROENTGEN-RAY TREATMENT OF LEPROSY—MEASLES AMONG SOLDIERS—ARTESIAN WELLS—CHOLERA—PERSONALS.

MANILA, P. I., April 1, 1907.

THE work of concentrating the lepers of the Philippine Islands at the Culion Leper Colony is being steadily pushed forward by the Bureau of Health as rapidly as the necessary appropriations for this purpose become available. It is proposed, during the early part of April, to send out a vessel to gather in the remaining cases from those islands from which lepers were removed heretofore. If the plan

followed by the Bureau of Health for freeing the islands of leprosy results as contemplated, there should not be many more cases of leprosy occurring in such islands in the future. In addition to the foregoing, it is proposed to remove all the lepers from the islands of Samar, Leyte, and Marinduque, to Culion. With the clearance of these islands fully one-third of the territory of the Philippine Islands will then be free of this disease.

The treatment of leprosy by the *x*-ray is still being continued at the San Lazaro hospitals in Manila. Of the seventeen lepers who have been under treatment during the past few months, all show signs of considerable improvement. In two cases it has not been possible to find leprosy bacilli for the past two weeks in the skin scrapings taken from places in which they had been abundant heretofore. It is stated that as soon as this work is further advanced a complete detailed report will be published.

The transport *Logan*, which arrived here during the early part of March, had on board two cases of measles among soldiers, and upon their being transferred to Fort McKinley several additional cases occurred. Owing to the prompt measures taken by the military authorities, no further spread of the disease took place. Measles is a disease that is rarely encountered in the Philippines, and there is no record of authentic cases occurring, except by direct importation, so that, whether this disease does not flourish in a tropical climate, or whether it has simply been due to good fortune that measles does not gain a foothold here, is an open question. There are several instances on record during the past few years in which cases were imported, but no special measures looking toward their isolation were observed; yet the disease did not seem to spread among the native population. The records of the San Lazaro contagious disease hospitals, however, show that a few cases occurring in Filipinos have been admitted.

The drilling of artesian wells in the provinces is going on continually, and several more artesian well-drilling outfits have been ordered from the United States. The value of this great hygienic boon is gradually being appreciated by the Filipino people themselves, and from many towns applications are received requesting to have wells installed. The geographical formation of some sections of the Philippines is such that they are well adapted to this form of water supply. Experience in the past has demonstrated that in the Philippines particularly, where so many forms of intestinal parasites occur in such profusion, great improvement takes place in public health in almost all places in which they are exclusively used.

The committee which was appointed by the Governor-General for the purpose of making an investigation into, and fixing the blame for the inoculations which were made by Dr. R. P. Strong upon some prisoners in Bilibid prison last November, has rendered its report. The Coroner has also submitted his report to the Governor-General, but the contents of neither of these documents has yet become public property. It is generally understood, however, that the Coroner exonerated Dr. Strong from all blame, but that the general committee appointed by the Governor-General did not make its report quite so favorable. It is announced that the reports will soon be made public, and when this is done, more detailed information will be given.

Cholera in the Philippine Islands has practically disappeared, a few sporadic cases being reported from remote districts in the provinces of Occidental Negros and Capiz. Repeated efforts have been made to have these diagnoses confirmed by bacteriological examination, but, owing to the remoteness of the places in which they occur and the lack of facilities on the ground, these efforts have so far not met with success.

Major William F. Purviance, Surgeon, U. S. Army, who has been on duty as visiting physician in the city of Manila, has completed his tour of service in the Philippine Islands, and returned to the United States on the transport *Logan*, which sailed from here March 15.

Dr. J. R. McDill, the surgeon of the St. Paul's Hospital, who has been in the Orient for the past seven years, left on the steamship *China* for a vacation to be spent in Chicago.

Appendiectomy. Duval has operated with success on three cases of appendicitis, using the transverse incision which has been proposed by Chaput. In the region of this incision the muscular fibers of the internal oblique and the tranversalis are parallel; no muscular fascia is cut and there is less chance of eventration. There is a better opening from this incision than from that of McBurney. Besides, in case of need the incision can be easily prolonged to the median line. No nerve filament of the rectus is sacrificed and the integrity of the abdominal wall is best preserved by this method. Finally this incision allows drainage in all directions.—*Gazette des Hôpitaux Civils et Militaires.*

Progress of Medical Science.

New York Medical Journal, May 4, 1907.

Raynaud's Disease.—J. V. Shoemaker reports one case, his patient being a woman of thirty-four years, seen in the second or congestive stage of the disease, her fingers being swollen, red, and cold to the sense of touch. The author states that the affection may be mistaken for diabetic or for hysterical gangrene. In diabetic gangrene the onset is rather sudden; there are signs of weakness and malaria, emaciation is marked, sugar is found in the urine, and the gangrene is rarely symmetrical. In Raynaud's disease, on the other hand, the onset is insidious, general health remains good, there is no emaciation and no sugar, while the gangrene is always symmetrical. In hysterical gangrene, there is the history of hysterical attacks, pain is constant, and gangrene is symmetrical. There is periodic pain in Raynaud's disease and no hysterical history. In the author's case the etiology may be referred to a long-standing diarrhea disturbing the vascular and hematopoietic systems. The blood was pale scarlet in color with normal coagulability, erythrocytes 3,240,000, leucocytes 7,400, hemoglobin 70 per cent. The treatment of such cases should be hygienic, dietetic, electrical, and medicinal.

Mental Responsibility and Crime.—A. Gordon sums up his ideas on this subject in the following propositions: (1) The legal conception of responsibility is not in accordance with the principles of science, and does not satisfy the practical exigencies of life. (2) The dogmatic principles of law should be replaced by more real and vital, viz., by biological principles. (3) A special psychiatric service should be established in prisons for study of all criminals, or else an alienist be attached to prisons, reformatory schools, houses of refuge. (4) The function of the law should be not only to find criminality, but also to correct the criminals themselves. (5) Legal instruction should consist of study of crime as a special phenomenon, and of criminals as individuals. (6) Administration of justice in such cases should be confided to a jurist and to an alienist. (7) Administration of houses of correction should be placed in the hands of alienists and pedagogues, because the majority of criminals bear stigmata of degeneracy which require special attention. (8) Youthful criminals should be isolated and placed in special institutions in which proper medical and pedagogic measures will prove to be most beneficial.

Mucous, Mucomembranous, and Membranous Colitis.—J. P. Tuttle presents an elaborate discussion of the various features of this malady and says that the treatment is usually medical and along the following lines: Diet: Meat or fish twice daily, animal broths, a limited amount of dry toast or crusts of bread, rice, hominy, green vegetables, milk, butter, and salads. No sweets, potatoes, peas, shelled beans, or alcoholic drinks are allowed. Regular catharsis, preferably by castor oil and glycerin, every three days. Colon flushing with normal saline, sodium bicarbonate, or weak silver nitrate solutions. Intestinal antiseptics such as phenyl salicylate, boric acid, or zinc sulphocarbolate. Regular hours for business, exercise, and rest, and sometimes, if need be, change of climate. Some of these cases, however, especially those due to latent or remittent amebic dysentery, do not yield to this treatment. When such is the case we are forced to employ surgical measures such as Gibson's cecostomy or appendicostomy. The author prefers the latter.

Journal of the American Medical Association, May 11, 1907.

Recent Studies in Heredity.—E. B. Wilson gives an account of some of the more recently developed facts in regard to heredity and of the methods of research employed. The studies have thus far followed three principal lines; the statistics or biometric, the experimental method from which the Mendelian principle or law of the persistence of the parental dominant and recessive characters in the germ cells of the hybrid by which the results of crossing may be predicted with approximate accuracy has been deduced, and, lastly, the method attempting to study in detail the physical basis of heredity in the germ cells. It is to this last method that he particularly addresses himself, and as a preliminary he reviews the more striking facts of Mendelian inheritance in some detail, as shown by color inheritance in mice. In Mendelian inheritance the so-called unit characters behave almost as if they were material substances that can be combined in definite proportions. This, he says, would be intelligible if the material bases of the characters in the germ cells were also separable and capable of combination. These are sought for in the chromosomes, and Wilson gives the facts that point to the connection of these bodies with the transmission

of the unit characters and the general close relationship of the Mendelian principle to chromosome characteristics. Thus it seems to be pretty definitely proven that a certain chromosome in some of the insects has to do with the inheritance of sexual characters, thus affording a definite basis for the assumption, amply warranted by other facts, that the other chromosomes are concerned with the transmission and development of still other characters. The double series of chromosomes in the nucleus, their maternal and parental origins, respectively, which have been practically proven, and their behavior in synapsis also shows the closed parallelism to the behavior of the unit characters in Mendelian heredity and afford a rational basis for a working hypothesis, if not quite sufficient for a fully demonstrated theory.

Bacteriology of the Respiratory Tract.—D. J. Davis gives his conclusions as follows: 1. Influenza-like bacilli are commonly found in the upper respiratory tract in various infectious diseases, and especially in whooping cough. Occasionally they occur in normal throats. 2. Various organisms occur in the discharge of otitis media, the streptococci being the most common; occasionally influenza bacilli are found. 3. The *Micrococcus catarrhalis* is a common inhabitant of the respiratory mucosa in infectious conditions and is sometimes found in almost pure culture. It does not seem to produce specific lesions. 4. The influenza-like bacillus of whooping cough is pathogenic for man; its specificity is dubious. Present data permit us to consider these bacilli as secondary invaders wherever they are found. The possibility of a primary invasion should, however, be considered. 5. Influenza-like bacilli are readily taken up in the test tube by unwashed leucocytes and less readily by washed leucocytes. This spontaneous phagocytosis is not affected by varying the concentration of the salt solution between 0.6 per cent. and 1.4 per cent. 6. Injection of these bacilli into animals causes the production of specific agglutinins and probably also an increase of opsonins in the serum. Because of the occurrence of spontaneous phagocytosis and agglutination in such sera the determination of the opsonic index for these bacilli is rendered unreliable.

The Gradual Cure of Hysterical Paralysis.—H. T. Pershing says that the sudden cure by suggestion or otherwise of hysterical paralyses, however practicable and tempting in cases in which one can be sure of the diagnosis and of his power to impress the patient, is not the one to be generally chosen. Failure may compromise future success, and too prompt success may have its disadvantages in depriving the patient of the discipline and enlightenment that are necessary to a permanent cure. The safer way is more gradually to arouse and exercise the dormant kinesthetic centers, overwhelmed by inhibitory impulses from other centers, due to the perverted emotional conditions and ideas, by first raising the emotional tone, encouraging the patients to believe they will recover, and if such cheering is opposed or resented, appealing to their *amour propre* by judicious suggestions. The physical measures—rest, food, tonics, and sedatives—while of great importance, are sometimes overvalued, he thinks, but both mental and physical treatment should be employed in these cases in harmonious combination. While doing this, the dormant kinesthetic centers can be acted on specifically by sensory stimulation. Hysterical anesthesia is not absolute and strong faradic currents, applied to the skin and muscles, followed by vigorous and even rude, passive motion of the affected limb, have a powerful tendency to restore the lacking sensations and ideas of motion. The patient's close attention should be directed to the anesthetic part and every slightest beginning of sensation noted. This will tend to bring the cortical sensory centers again into relation with the other centers in the cortex. After awakening some degree of normal sensibility and overcoming inhibitory fears, the cure can be completed by exercises in voluntary motion. If the paralysis is nearly total it is as well to let the first attempts be favored by gravity, which will assure some motion and encourage the patient to increase it. A beginning once made, the attempts can be gradually increased, every encouragement being given, till at length some normal control is obtained, and the patient is able to practice some assigned exercises in the physician's absence. The length of time taken in accomplishing the cure may be made an advantage by using it to carry on a reeducation in composure and self-reliance, without which permanent recovery is impossible. Two cases of typical hysterical paralysis are briefly described in which this method had been employed with complete success.

Conservative Surgery of the Limbs.—J. E. Cannaday publishes several case histories illustrating the value of conservatism in the surgery of the arms and legs. Whenever the circulation is fair in the limb there is a possibility that it can be saved, and the modern advances in the surgery of the blood-vessels give promise of better results in the future in what were formerly considered hopeless cases. The age of the patient has also much to do with the establishment of collateral circulation, and by grafting very extensive damage to the skin can be repaired. He objects to haste in operation, the use of the tourniquet, and too meddlesome first-aid methods, and states his conclusions substantially as follows: 1. The conservative treatment of severe injuries to the limbs is essentially modern, and primary amputations should be avoided (except when the limb is held only by a few shreds), and we should wait for shock to pass and the patient regains strength. 2. Normal salt solution should be used for irrigation instead of antiseptic solutions. 3. Bones should not be permanently sutured and too much should not be attempted in the beginning. 4. Moist gangrene calls for radical treatment. 5. Drainage is usually necessary and the rubber tube is to be preferred. 6. Good functional results can be obtained in spite of great apparent odds, and a saved limb is better than a stump.

Buttermilk Feeding.—H. C. Carpenter reports twelve cases of babies with infantile atrophy, gastroenteritis, etc., in whom he had generally good results from the use of the following mixture: Buttermilk, 1 quart; wheat flour, 3½ teaspoonfuls; granulated sugar, 15 teaspoonfuls. The ingredients were carefully mixed, heated up to the boiling point but not boiled, and then rapidly cooled and kept till used. Full directions are given for the preparation, precautions against curdling, etc. The cases were not selected as likely to do well, but in every case regular milk mixtures had been tried and failed before the buttermilk was begun. The ages ranged from one to fifteen months; the average gain in weight during the use of buttermilk was eight ounces a week. Carpenter remarks the advantage of cheapness in the buttermilk feeding and believes it a most excellent food for infants suffering from intestinal indigestion, enteritis, and marasmus. He has observed no unpleasant effects from its use; children almost invariably take it well. A few, when first put on the diet, vomited slightly, but, with one exception, this ceased in a day or two. The point he specially emphasizes is that the success is not so much due to the absence of fat as to the great ease with which the proteid of buttermilk is digested. He has observed this in almost every case. Several of the infants who were unable to digest 0.75 per cent. of calcium casein digested perfectly the 2 or 3 per cent. of casein lactate in the buttermilk.

Cardiac Murmurs Developing in Biliary Colic.—D. Riesman reports two cases recently observed by him of systolic murmur originating during attacks of biliary colic, and reviews the literature of the subject. The cases reported by Gangolphe are reproduced in brief abstract, and other observations and the theories proposed to account for the symptoms are referred to. Riesman thinks that the transitory character of the murmur and the absence of signs indicating grave infective lesion renders endocarditis unlikely as a cause, while the symptom usually appears too early in the case to be accounted for by anemia. If jaundice were responsible it ought to be more common, and, moreover, the murmur usually outlasts the jaundice. The bile acids and bile salts may cause changes in the cardiac innervation or in the myocardium, but pain, he thinks, is the principal factor in the production of the murmur. The excruciating pain of hepatic colic, he says, may cause dilatation of the heart with a temporary insufficiency of the mitral valve; perhaps also of the tricuspid. There must, however, be a predisposition, the heart must be potentially dilatable. This does not account, it is true, for the murmur in Gangolphe's cases of emotional jaundice nor for that sometimes observed in catarrhal jaundice and hepatic cancer. With regard to the last he holds that anemia and cachexia constitute an adequate explanation; he can not say what the factors are in the rather dubious emotional jaundice, which he has never seen. The practical importance of the murmur in these cases is the evidence it gives of a somewhat abnormal condition of the cardiac muscle which enforces some caution in the choice of the anesthetic and possibly also in the operative technique. A too prolonged operation might be dangerous. On the other hand, the finding of a murmur might lead to the error of assuming that an old endocarditis existed, a belief that might readily influence a surgeon's advice. The knowledge that such a murmur may arise *de novo* in cases of biliary colic, and that it is an index of a weakened myocardium, a weakness that may not be serious, will be of value in the treatment of a given case.

Torsion of the Great Omentum.—W. W. Richardson reports a case of twisted and acutely strangulated great omentum, partially included in the sac of a postop-

ective hernia, which was successfully operated on. He reviews the subject generally, classifying the cases according to their association with hernia and intraabdominal and extraabdominal location, and also according as one or more points of torsion exist, and describes the mechanism and etiology. The essential condition for the occurrence of an omental torsion is the formation of a matted mass at its free end or the formation of an adhesion of this free end to some other structure. A hernia is the most frequent factor in the production of these torsions, as is shown by the published cases, and it can not always be excluded in those in which it is not mentioned as existing. Symptoms of strangulation only appear when the torsion is sufficient to obstruct the return circulation, and in most of the cases this occurs suddenly. Diagnosis is difficult; in only one published case—that of Rudolf—was it correctly made before operation. It is impossible, therefore, to make positive statements regarding the prognosis, as we do not know how many patients may have recovered without operation. That unaided recoveries may occur is probable from what we know of strangulated epiplocele, in which many such have occurred. As in other cases of strangulation of abdominal organs, the mortality depends on the stage of operative intervention. In all the cases in which early operation was done, without exception, recovery ensued. Several of the cases reported in the literature are briefly reproduced and cuts are given illustrating the varieties of the condition. The desirability of accurate and full reports of future cases is mentioned. If the possibility of omental torsion is borne in mind in every case in which the symptoms point to strangulation of some abdominal organ, there will be more correct diagnosis in the future.

Blocking of Auricular Extrasystoles.—A. W. Hewlett, reports a case of arhythmia due to blocking of the extrasystoles on their passage from the auricles to the ventricles, a type that, so far as he is aware, has not hitherto been described. He is inclined to explain the absence of the ventricular contractions by a failure of impulses to cross the auriculoventricular junction rather than to a lack of contractility on the part of the ventricles. Every extrasystolic first sound was followed by a second sound indicating that the ventricular contractions, when present, were sufficient to send the blood into the aorta or pulmonary artery. The article is illustrated by sphygmographic tracings, which are elaborately explained.

Puncture and Disinfection for Abscesses.—DeWitt Stetten advocates puncture and disinfection for abscess instead of incision and drainage, in order to avoid mutilating scars and slow convalescence. His method is as follows: 1. After careful disinfection, and under infiltration anesthesia, he punctures the most dependent portion with a large trocar or pointed scalpel and gently expresses the pus. This is better than aspiration. 2. The cavity is then thoroughly irrigated through the trocar with a 1-1000 solution of corrosive sublimate. This can be used in large quantities, as the abscess wall does not absorb. He has found this strength most satisfactory. 3. The remnants of the corrosive sublimate solution are carefully squeezed out and the abscess is partly distended with a solution of from 5 to 10 per cent. iodoform glycerin. A moist dressing with a firm pressure bandage is then applied. He uses this method in every form of acute external abscess, following the principle originally laid down by Henle for cold abscess. To date he has treated thirty-seven cases with good results in all except abscesses of caseous tuberculous glands, which generally required a secondary curetting, though they were none the worse for the preliminary conservative treatment.

The Lancet, April 27, 1907.

Suggestion for Treatment in Snake Bite.—W. H. Haw records two cases of snake-bite, one recovering and one proving fatal. With regard to treatment he says that the great difficulty is to keep the venom out of the circulation. If this could be effectually done until such time as the venom might be destroyed, it would be possible to save some cases now lost. The usual method of preventing the venom entering the circulation is the ligature, and one is advised to slacken it occasionally to allow of the poison being worked off in small nonlethal doses. It seems to the author that if the circulation be brought to a standstill at the seat of injection it might be possible, if this be done early enough, to prevent any venom at all entering. The venom would be imprisoned, as it were, and could be dealt with by permanganate of potash and incisions. He suggests, therefore, that in cases seen early enough the part be frozen with ethyl chloride spray during the making of the incisions and the rubbing in of permanganate of potash. Where the subcutaneous cellular tissue is loose the part containing the imprisoned poison might be shut off from the general circulation by ligature should needles and thread be handy. All the operations would be painless. A tube of ethyl chloride would not be a large addition to a snake-bite outfit.

Recent Development in the Therapeutical Applications of Arsenic.—J. St. Aman states that the great value of alteratives in therapeutics is that they often change pathological processes brought about by disease into physiological processes. Their failure frequently arises from the circumstance that they introduce into the body their own toxic pathological processes. This is exceedingly well exemplified by arsenic, which is able to produce a mimicry of several diseases, much to the discomfiture of diagnosticians. In the nervous system we may have peripheral neuritis with rapid muscular atrophy, or definite myelitis. The intestinal canal may present appearances closely resembling cholera, with granular changes proceeding to fatty degeneration in the epithelial lining, the interstitial tissue and Peyer's patches being invaded by large round granulated cells. The liver may be affected in such a manner as to suggest a diagnosis of acute yellow atrophy. The skin may be the site of lesions the number of which is almost legion. Every anatomical manifestation known to dermatology from a slight erythema to a bulla is represented. The most characteristic appearances, however, are pigmentation, herpes zoster, and hyperkeratosis of the palms and soles. Hutchinson maintains that these thickenings may develop into true epitheliomatous growths. The sphere of action of arsenic is obviously very extensive when it is allowed to act on the general healthy organism. Its danger lies in its tendency to cause fatty infiltration and degeneration, and its therapeutical applications are accordingly very much hampered, though practical medicine still indicates a considerable field for its employment. The art of employing arsenic successfully consists in gaining control of its pharmacological action and making it subservient to therapeutic aims.

Goiter Removed Under Cocaine Anesthesia.—J. L. Thomas presents a series of cases. He has operated fifty-five times under local anesthesia (cocaine 1 per cent.), including one case in which no anesthesia was used. All these recovered. He has used a general anesthesia seventeen times, including five Graves' cases. Of this latter series, three died; one from respiratory complications, one from hyperthyroidism (both Graves'), and one from sepsis. Another Graves' case died suddenly just as she was about to be operated on but before any medicament had been used. The cause of death was unknown. The author always uses Kocher's collar whenever possible, as it gives ample room and exposes the blood-vessels at right angles to their courses, and leaves a scarcely perceptible scar. The position of the patient is on an inclined plane, the higher end being under the shoulder while the head rests slightly extended on a cushion. Full operative details are given by the author. Everything being ready, the neck is marked by drawing the edge of the scalpel very lightly round it in the position which later forms the collar incision; by this maneuver no pain is inflicted but sufficient blood exudes to form a thin red line under which from one to two drachms of a 1 per cent. solution of cocaine are injected by means of Kocher's syringe from end to end so as to form a continuous subcutaneous ridge. As soon as the injection of cocaine is completed the collar incision is made at once and the upper flap is first dissected upwards and consists of skin, subcutaneous tissue, platysma myoides, and the fascia covering the anterior surface of the neck muscles. Every blood-vessel exposed is first clamped by two Kocher forceps and divided between them so that the amount of blood lost is a mere trifle. The lower flap is then formed. The author notes that in certain cases it is necessary to divide the sternohycid and sternothyroid muscles in order to facilitate the delivery of the goiter; in order to prevent atrophy of these muscles they must be divided near their upper or lower ends according to the exigencies arising, and by so doing the nerve supply to the muscles will not be interfered with. In order that the condition of the neck should be restored as nearly as possible to its normal appearance, one must endeavor in the first place to restore to their normal conditions every divided muscle by carefully reuniting the ends, and in the next place to sew the skin together by means of a very fine needle to avoid puncture scars, and lastly the drainage-tube must be removed at the expiration of from eighteen to twenty-four hours, together with the skin sutures. Special attention must also be given to accurate apposition of the edges of the aperture left by the removal of the drainage-tube, otherwise slight puckering will take place.

British Medical Journal, April 27, 1907.

Calcium Iodide in Leg Ulcers.—A. G. Peter commends the use of this remedy, stating that in his experience, ulcers which have for years stubbornly resisted all kinds of treatment, and whose owners have without avail been simply saturated with potassium iodide, in a week or two showed clean granulating surfaces, and have in almost all cases healed up. Two or three cases, which are healing more slowly, though immensely improved, are due, the author thinks, not to any deficiency in the drug, but to the ingenuity displayed by their owners in counteracting its effects—to put off the evil day of their discharge from hospital. In all cases the induration around the ulcers greatly diminished or entirely disappeared. He also observed in a few cases of syphilitic necrosis of the nasal bones considerable benefit from its administration, and great relief was obtained in headaches associated with syphilis. The dose given in all cases was two grains in mixture three times a day, and there did not appear to be any increased advantage from augmenting the dose. Any mild external application seemed equally efficacious; in most cases he used a mild mercurial or iodoform ointment.

Muscular Spasm Under Chloroform Anesthesia.—A. C. Stark refers to the case of a primipara of twenty-six years, to whom chloroform was administered from a mask until the corneal reflex was abolished. The moment the fingers touched the vulva the legs were violently extended and became so rigid that the united efforts of the assistant and himself were insufficient to flex them. The anesthetic was pushed, and another attempt made to introduce the finger, only to reproduce the same phenomena. It was only on the establishment of deep anesthesia that delivery was effected with considerable difficulty. The patient made an uneventful recovery. The same specimen of chloroform had been given to other patients without any unusual incident. The author remarks that although muscular rigidity in the early stage of chloroform anesthesia is common enough, such reflex spasm as that described, after the loss of the corneal reflex, seems sufficiently rare to be worth reporting. The spasms appeared to be limited to the legs, and he assumes the cause to be a reflex impulse from the lumbar centers, these centers having failed to reach the general level of depression of the rest of the cord. The reasons for this failure are not easy to find.

Lesions of Spinal and Cranial Nerves Experimentally Produced by Toxins.—D. Orr and R. G. Rows record their experiments on rabbits. Their method consisted in filling a celloidin capsule with a broth culture of a certain organism. The sciatic nerve being exposed, the sealed capsule was placed in apposition with it, after which the gluteal muscles were stitched in their original position and the wound closed. As toxins are known to diffuse through the wall of these capsules, we assumed they would find their way into the ascending lymph stream of the nerve and so to the cord, where their presence would be demonstrated by the ensuing degeneration. The organisms they first employed were *Staphylococcus pyogenes aureus*, *Bacillus pyocyaneus*, Gaertner's bacillus, and the *Bacillus coli*. They present the following findings: (1) Toxins readily travel up spinal and cranial nerves to the central nervous system. (2) While these nerves in their extramedullary portion possess a neurilemma sheath and are protected by its vital action, in their intramedullary part, having lost their neurilemma, they immediately undergo degeneration. (3) The first change is a primary degeneration of the myelin; axis cylinders and nerve cells are evidently affected later.

Oatmeal in the Dietary of Children.—Basing his opinion on the results of feeding of oatmeal to rats with a resultant thyroid overgrowth, C. Watson makes a plea for the liberal use of oatmeal in the dietary of children after the third year. Breakfast is the meal into which it should most largely enter, the best form of administration being porridge and milk, which should be followed by a glass of milk and some bread and butter. It is not, in the author's opinion, advisable to supplement the meal by meat in any form, for two reasons: First, because it is not necessary and may be harmful; and, secondly, because the use of the meat tends to create a distaste for the more wholesome but less appetizing meal of porridge. If a child be given for its breakfast a little porridge, followed by bacon, it is certain that in nine out of ten cases, the chief element in the meal is, in the child's opinion, the bacon. Two facts, however, must be remembered. In the first place, a porridge diet *per se* is not good for children on account of mastication not being essential for this diet. This fault may be counteracted by including in the diet crusted bread, rusks, Vienna rolls, and the like, which should be taken "dry," and not merely washed down with fluid, as is often the case. The inclusion of such articles of diet in the breakfast will ensure that due attention is paid to the development of the muscles of mastication, salivary glands, and jaws, a point of very great importance in the dietary of children. Secondly, clinical experience teaches us that certain children cannot properly digest and assimilate oatmeal. This feature is, in the author's experience most frequently observed in the offspring of typically gouty parents. The parents of such children tell us that they cannot take porridge because of its "heating" properties, the objective indications of disturbed nutrition being found chiefly in a concentrated urine and in various skin eruptions. These symptoms are, however, much less frequently observed if the porridge forms the main article of the meal and is not followed by other highly nitrogenous food, such as bacon and eggs, as is frequently the case. There are, however, some children who cannot properly digest and assimilate porridge, and these are better without it, but if careful attention be paid to the details of the dietary as a whole, it will be found that these cases are much rarer than is commonly supposed.

Maniacal Chorea.—J. M. Faring follows a case history with a general review of the history of this particular variety of chorea in medical literature. His patient was a girl of seventeen years and the most important features of the case were the following: Rheumatic pains in the legs for a fortnight, upon which chorea supervened. A mitral systolic murmur, audible on admission, of varying loudness, and lasting up to the ninth day—the day of her death. The pulse quiet and regular, about 80 each day up to the last three days, when it rose to 110, 130, 140. The temperature normal or subnormal until the day before death, when it touched 103.4°. The choreic movements were slight for about forty-eight hours, and then became so violent that two special nurses were required to watch her and prevent her from falling out of bed and from striking her limbs against parts of the bed. (The idea of treating her by placing her mattress on the floor, with pillows around, was considered, but discarded in favor of the bed with nurses at either side.) The psychical phenomena were prominent, out of all proportion, and at first quite overshadowed the motorial. They differed, however, by the absence of incoherent speech and wild garrulity, from the forms one is accustomed to associate with the acute delirium of fever or acute mania. Another point worth noting was the occasional, though temporary, mental calm, which the physician's visits, once or twice a day up to the last three days of her life, seemed to produce. At these times she would cease shouting, the movements became quieter, she could always understand what was said and occasionally she made intelligent replies. Treatment by medicines totally failed to have any effect on the course of this terrible disease, and the only help it gave was by securing some hours of sleep, and muscular rest during sleep. The drug which seemed most useful for that purpose was chloral. On two days 1-200 grain hyoscine hydrobrom. (once repeated) was successful in calming the violence of the delirium, but it failed to have any effect the last two days of her life; while morphine hypodermically was practically useless. The occurrence of a systolic murmur at the mitral area, which was considered on admission to be probably due to rheumatic endocarditis of some two or three weeks' duration, must now, in the light of the autopsy, be judged to have been dynamic, and due to simple and acute ventricular dilatation. It is not to be explained on the grounds generally accepted—namely, anemia and choreic cardiac excitement. The heart was somewhat atrophic but showed no other changes.

The Value of an Abnormal Rise in the Average Level of the Diaphragm as a Guide to the Volume of the Blood in Active Circulation.—The object of the paper of T. S. Wilson is to bring forward clinical evidence in favor of the following propositions: (1) When, from any cause, the total volume of the blood in circulation is materially diminished, the total bulk of the intrathoracic viscera is correspondingly diminished by the relative emptiness of the thoracic blood-vessels, especially those of the lungs. This diminution in the bulk of the intrathoracic contents shows itself by an elevation of the diaphragm, which has to be maintained at a higher average level than the normal in order to adjust the cubic content of the thorax to the altered volume of its contained viscera. (2) That such a rise of the diaphragm may frequently be detected clinically, and, when present, is of value in diagnosis, and affords important indication for treatment. The position of the diaphragm can be recognized clinically by ascertaining the upper level of the gastric resonance in the left nipple line, or of the upper border of the liver in the

right nipple line. The author prefers the gastric method for the following reasons: (1) There is much variation in the upper level of the liver dullness of healthy individuals, dependent upon the degree to which the lungs have been expanded by exercise or athletics, etc. (2) The respiratory movements of the lower edge of the lung render exact accuracy of record as to its level impossible. (3) The level of the diaphragm on the right side is more apt to be interfered with by ill-defined pathological conditions of the lung than is the case with the level of the central tendon which underlies the heart. An elaborate series of photographs accompanies the paper. The author considers the high diaphragm an important danger signal in some severe typhoid cases. It is a useful guide as to the extent to which rectal feeding may be pushed. It must also be borne in mind because in cases of suspected rupture of a gastric ulcer the absence of a liver dullness cannot, as is now well recognized, be relied on as an indication of free gas in the peritoneal cavity. In heart disease also the level of the diaphragm is a useful guide as to the condition of the circulation. If the weakness of the heart muscle be the prime factor, we shall expect a high diaphragm, unless, as in advanced age, the tissues be too rigid to yield easily; if, on the other hand, some obstruction to the circulation, such as valvular defect, be the chief cause of failure, there will be excess of blood in the veins of the thorax, and a normal or a low diaphragm would be found.

Berliner klinische Wochenschrift, April 22, 1907.

Experimental Researches on Diabetes.—Zuelzer presents the results of his recent investigations with reference to the experimental production of diabetes with suprarenal gland extract. The writer has studied the manner in which this toxic action occurs and the point at which the invasion takes place. The effect of suprarenal extract was first studied on the liver because this organ stands in intimate relation to the production of sugar in the organism. In dogs which had received the suprarenal extract, the blood from the liver showed a marked increase in sugar. Where the pancreas had been extirpated, the increase in sugar was considerably less. The same effect seems to be obtained therefore with the subcutaneous injection of suprarenal gland as with extirpation of the pancreas. The writer thinks that under normal circumstances the secretion from the suprarenals is neutralized by the pancreatic secretion. It would seem therefore that by the simultaneous injection of artificial pancreatic and suprarenal extracts, the appearance of a glycosuria might be prevented. In order to obtain a pancreatic preparation free from marked toxic action, the various all ummoid bodies must be eliminated. The experiment previously indicated was performed in a number of rabbits and it was found that the subcutaneous injection of pancreatic extract prevented a glycosuria in animals which had previously presented this phenomenon after the injection of suprarenal substance.

Münchener medizinische Wochenschrift, April 16, 1907.

Treatment of Bone and Joint Tuberculosis by Hyperemia.—Deutschlander, in an extended article on this subject, considers that the elementary principles involved may be summarized as follows: The hyperemia must be of short duration, not more than one-half hour daily, and should give an appearance similar to an acute inflammation. It must not give rise to pain or to edema. After several weeks of treatment, it is wise to omit the same for several days before resuming. Where fistulæ or abscesses are present, the congestion hyperemia may be favorably combined with that produced by the vacuum cup. In every case treatment should be started as early in the disease as possible and continued for a considerable period after all active symptoms have subsided, in order to provide against recurrences. The ordinary acute abscess should be incised early, but cold abscesses and accumulations of fluid may be punctured while suction is being applied without using iodoform injections. Immobilization is not required where hyperemia is employed; on the contrary, moderate movements of the joints are of value in preserving their functions. Tuberculous joints must always be protected and favored. The writer looks upon the Bier method as a most valuable one and the most conservative we possess at the present time. For it not only produces a cure in cases of joint tuberculosis, but does this with resulting movable joints of good function. Operative interference is by no means eliminated when this method is employed, but when necessary, these will be found to be of a more limited extent and not of the usual mutilating character.

Treatment of Severe Anemias with Transfusion.—Morawitz refers to the loss in popularity which this procedure has sustained in recent years. He thinks that it is especially indicated in those cases of anemia where there is a deficient regenerative action of the bone marrow, which may, however, be stimulated to proper activity. Although arsenic will often produce the required result, there are cases in which no effect is obtained, and in these, Morawitz thinks that the transfusion method is indicated. He employed the procedure in six cases of grave anemia due to various causes and in only one did he fail to obtain a result. Here the patient was too far gone and subsequent autopsy showed that the marrow was in such a condition that regeneration of red cells was impossible. In three of the cases the results were surprising as the patients were steadily declining under other methods of treatment. In all of the cases from 150 to 200 cc. of defibrinated human blood were injected directly into one of the arm veins. Complicating after-effects failed to appear, except in one case where there was some dyspnea, but nothing more.

A Method for Determining the Mobility of the Heart.—Herz describes an ingenious and simple method for determining the mobility of this organ. Usually the apex beat and the area of cardiac dullness are examined with the body in different positions. Changes in the position of the organ may be due to adhesions of the pleura, to emphysema; the sclerosis of the aorta and an abnormal degree of mobility is also noted in certain cases of neurasthenia. Herz proposes that, instead of making use of changes in position, changes in attitude of the body be employed. The patient is examined in a standing position as to the position of the apex beat and the left boundary of absolute cardiac dullness. Unless the patient has been told, he is very apt to assume an attitude of relaxation. He is then asked to stand erect "in a military fashion," and the same signs determined. It will be found that under normal conditions the apex beat and the left border of cardiac dullness will be moved over towards the right, and this usually amounts to 1½ cm.

Deutsche medizinische Wochenschrift, April 18, 1907.

Treatment of the Gouty Diathesis.—Ebstein considers that a common basis underlies gout and adiposity and the treatment of the two conditions is practically the same. As the two are so often associated both are benefited and the plan is one which it is not difficult to enforce. Albuminous material should be given in considerable amounts, it being immaterial whether that of plant or animal origin is employed. Fat should also be administered in sufficient quantity, anywhere from 60-100 gm. daily. The ingestion of carbohydrates must be restricted, for these not only influence the gouty state but also tend to the production of adipose tissue. Thorough intestinal activity must always be provided for. These are all the dietetic precautions considered necessary and a strict vegetarian diet such as has been advocated in certain quarters is entirely unnecessary and useless.

Inoculation of Animals with Lepra.—Jezierski refers to the many unsuccessful attempts which have been made to transmit this disease to animals for experimental purposes. The material was obtained from a boy who was the subject of the tubercular form of the disease. This was introduced into the bodies of rabbits and guinea pigs in various ways, but the results were invariably negative, no matter what method was pursued. This is in accord with the results obtained by most of the other investigators who have made similar experiments.

"A Sure Cure for Asthma."—Alfred Terry Short describes the following curious remedy. The patient was a young woman who had been afflicted with asthma since childhood. She was a native of Luzon, P. I. Large sums of money had been spent for treatment, but the family finally reached the conclusion that the disease was incurable. About this time the patient's sister went to the cemetery and selected some pieces of bone of a skull which were dry and bleached. These she washed and pulverized in a mortar, adding the powder to a quart bottle of water. A teaspoonful of this mixture was given to the patient three times a day. By the time half of it had been taken, her condition was very much improved. This solution had a watery chalk-like appearance. Before the bottle was finished the asthma had almost entirely disappeared and the treatment was discontinued. Since then about two and a half years have elapsed, but there has been no recurrence. The girl has continued in the best of health.—*Journal of the Association of Military Surgeons of the United States.*

Book Reviews.

A Text-book upon the Pathogenic Bacteria. For Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia Hospital and to the Medico-Chirurgical Hospital, Philadelphia; Fellow of the College of Physicians of Philadelphia, etc. With 190 Illustrations, a number of them in Colors. Fifth Edition. Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1906.

In this fifth edition of Dr. McFarland's work on the Pathogenic Bacteria a large amount of new matter has been added, and at the same time much that was out of date has been eliminated. The chapters on Infection and Immunity have been entirely rewritten, and they contain an accurate and up-to-date presentation of these most important subjects. The volume contains a brief but sufficient account of the technical procedures necessary for a proper study of bacteriology, a short account of the life history of all the important pathogenic bacteria, and a description of the pathological lesions caused by the invasion of these bacteria. The book is nearly twice the size of the first edition, issued ten years ago, and while the original plan is still adhered to, the successive editions have indicated the progressive march of this most progressive science. As it now stands, the work fulfils the intention of its author; it contains all the essential facts of the subject; it indicates the literary sources from which the facts, theories, methods, and suggestions are gleaned, and it is written in such a way as to retain the reader's interest. For use in the laboratory and also in the library this volume can be confidently recommended to the medical student and to the practising physician.

Karl Weigert und seine Bedeutung fur die medizinische Wissenschaft unserer Zeit. Von Dr. Robert Rieder. Berlin: Julius Springer, 1906.

This little publication is more than a mere biographical sketch; it is not limited to a description of the life and the works of this distinguished master of pathological anatomy, but it shows how Weigert's numerous contributions to medical literature were developed, and their relation to each other and to the conceptions of pathology which were in vogue when he began to write. The book is divided into chapters dealing with pathological histology, general pathology and biology, bacteriology neurology, and microscopical technique. In the final chapter, entitled "Weigert as Investigator, Teacher, and Man," Rieder appears as the champion of his teacher, who for many years was misunderstood, ridiculed at times, and insufficiently appreciated. Although among the ablest of men, Weigert, by a chain of unfortunate circumstances, was kept from realizing the height of his ambition—a call to a professorship in one of the German universities which would be in accord with his attainments as scientific investigator. Weigert's pupils include the foremost names in histology and pathology, and the publication here noted constitutes an eloquent, though perhaps an incomplete tribute, to one of the masters of modern medical investigation.

A Manual of Pathology. By Guthrie McConnell, M.D., Pathologist to the St. Louis Skin and Cancer Hospital and to St. Luke's Hospital; Bacteriologist to the Missouri State Board of Health; formerly Assistant Pathologist to the Philadelphia City Hospital. Illustrated. Philadelphia and London: W. B. Saunders Company, 1906.

In the preface the author states that the object of the volume is to enable the student to acquire the salient points of the subject. As far as it goes, the work fulfills its purpose admirably. It is well arranged, fairly well written, and the illustrations are very good, especially those on the various tumor formations. The classifications of the animal and vegetable parasites are well selected. The chapter on "Infection and Immunity" barely touches the salient points, and that is all. It will take considerable more reading on the student's part to understand the theories of immunity. While the book is very good in its way there is little real need for such a volume.

How to Suppress a Malpractice Suit, and other Medical Miscellanies. By Thomas Hall Shastid, A.M., M.D., LL.B. Marion, Ill.: Marion Publishing Company, 1906.

The author of this book wants to fight fire with fire. His theory is that most malpractice suits are inspired by some envious rival of the accused physician, and his remedy is to collect all the facts possible reflecting on the character of this rival and use them to discredit him. This is small business. If the defendant in a malpractice suit is not sufficiently sure of his own integrity and honesty of purpose, he will gain little by besmirching the character of witnesses for the prosecution.

Biographic Clinics. Volume V. Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, upon the Health of Patients. By George M. Gould, M.D., Editor of *American Medicine*, Author of "An Illustrated Dictionary of Medicine," "The Practitioner's Medical Dictionary," etc., "Borderland Studies," "The Meaning and the Method of Life," etc. Philadelphia: P. Blakiston's Son and Company, 1907.

In this volume there are no "biographic clinics," strictly speaking, the cases reported being those of actual patients who "had suffered many things of many physicians" because these same physicians did not recognize the fact that the ills from which their patients suffered were not organic diseases, at least not in their origin, but were simply ocular reflexes. Many of these histories are pathetic in the extreme, and they teach one lesson at least, which is that sometimes, if not always or even often, very grave disturbances may arise from eyestrain. An eye examination is not a serious matter, surely, and it seems but fair that patients should be given this chance after other measures, addressed more directly to the organs apparently at fault, have been tried without avail. We cannot doubt the correctness of the narrations in this interesting book, even if we may be tempted to regard them as exceptional. The titles of some of these chapters will serve to indicate the nature of the histories recorded. One is: "A Case of Hyperchlorhydria, Indigestion, Constipation, etc., as Treated by One Gastrologist, Three General Physicians, One 'Mechano-Neuralist,' One Hospital, One Professor of Medicine, and One Refractionist." Another is: "A Case of 'Neurasthenia' as Treated by Two General Physicians, One Homeopath, One Quack, One Osteopath, One Pregnancy, Three Ophthalmic Surgeons, Two Gynecologists, One Diagnostician, One Neurologist, One Resident Sanitarium Physician, and One Refractionist." Still another is: "One Patient's Experience with Two General Physicians, One Neurologist, One Leading Physician, One Gastrologist, Two Ophthalmic Surgeons, One Diagnostician, and One Refractionist." "A Life and Career Blighted by Ignored Eyestrain," "Thirty-five Years of Treatment by Seventeen Physicians for Strabismus, Tinnitus, Headache, Indigestion, Eyestrain, etc," are two other titles. There are twenty-two essays and case histories in the book, all of which are worth reading and digesting. Whether the reader will be converted against his will to the eyestrain theory is doubtful, but he will be interested at all events, as everyone must be by anything this gifted and polemic writer publishes.

Medical Diagnosis. A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of the Theory and Practice of Medicine in the University of Minnesota; Attending Physician, St. Luke's Hospital, the City Hospital, and the St. Paul Free Dispensary; Member of the Association of American Physicians, the American Medical Association, American Association for the Advancement of Science; Author of "The Examination for Life Insurance and Its Associated Clinical Methods." Philadelphia: P. Blakiston's Son and Company, 1907.

This work on diagnosis differs from others of the kind in several particulars. The book itself is of a very handy size, much smaller than most medical books, light in weight, bound in flexible morocco, and with gilt edges. The paper is thin and tough, so that the nearly seven hundred pages make a book no thicker than one of three hundred pages of ordinary paper. The type is small but distinct, and the illustrations, which are also small but numerous, are for the most part excellent in design and execution; there are seven colored plates, and some of the pictures in the text are also colored.

The work itself is of the most practical character, the language is clear and concise, there is nothing superfluous in the description of the symptoms and the diagnostic methods, and of the latter only those are referred to which have been found of value and are retained in daily use. The arrangement of the text with running page heads and marginal notes facilitates ready reference to a remarkable degree, and this is aided further by an analytical table of contents and a very complex index. After introductory sections on the outward signs of disease, the diagnostic significance of age, sex, social status, etc., and the aid to diagnosis afforded by the previous history, the diseases of special organs and parts of the body are considered; then follow the symptoms of diseases associated with changes in the blood and ductless glands, infectious diseases, intoxications, parasitic diseases, the group of rheumatic affections including gout, the nervous system, and the symptoms and treatment of acute poisons; an excellent summary of malingering and the means of detecting it is also included. The chapter on the physical diagnosis of valvular affections is particularly worthy of commendation.

Society Reports.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Third Annual Meeting, Held at Washington, D. C., May 6, 7 and 8, 1907.

(Special Report to the MEDICAL RECORD.)

(*Continued from Page 799.*)

SECTION ON TUBERCULOSIS IN CHILDREN.

DR. THOMAS MORGAN ROTCH OF BOSTON, CHAIRMAN.

Address of the Chairman.—Dr. THOMAS MORGAN ROTCH of Boston made this address, choosing as the subject of his remarks, "The Living Pathology of Tuberculosis of the Bones in Early Life." He said that in order to diagnosticate tuberculous conditions as such, and to enable them to differentiate tuberculous from nontuberculous conditions, it was of the utmost importance that they should recognize the normal living anatomy of the bones at different periods of development, as portrayed by the Röntgen ray. This was especially necessary in the early stages of tuberculous disease where the pathological changes were often slight and obscure, and yet where an early diagnosis was extremely valuable; not only often enabling them to arrest the disease by treatment, but to determine whether the condition was merely a slight anomaly of healthy bone, or some nontuberculous affection. In both these latter conditions they could often decide that the case was not tuberculous and, therefore, not fit to be sent to tuberculosis hospitals or homes for two reasons. First, because they had none too much accommodation for tuberculous cases who had the prior right to be looked after; and second, because they should not ignorantly expose a nontuberculous patient to tuberculous infection. It was also important that the treatment in tuberculosis should be begun very early, so as to protect the ear and other organs from resulting infection. There was no diagnostic means so valuable for the detection of tuberculosis of the bones as the Röntgen ray in the hands of an expert in its technique. Over and over again it became a most important factor in the chain of evidence which might lead, unless refuted by the ray, to stamping an individual as syphilitic, and thus perhaps ruining his social life. He said that one should witness the possible differentiation of the tuberculous bone process from the periosteal lesion of syphilis, and the special lesions represented by dactylitis. Again the importance of differentiating by the ray a nontuberculous from a tuberculous arthritis, and a tuberculous hip from an osteomyelitis, or an acute eczema. The moral to be drawn from what had been said was that in the past, and very often in the present, many groups of clinical symptoms were taken for granted from the very first to be tuberculous in origin when they were by no means really so. The Röntgen ray made it evident that tuberculous conditions should be treated for tuberculosis, and that nontuberculous conditions should not be so treated, but treated according to what was indicated by their special infecting organisms. Dr. Rotch then cited cases, illustrating them with Röntgen ray pictures, showing not only the importance in diagnosis, but made the treatment conspicuously obvious.

Recent Advances in the Knowledge of Tuberculosis of Early Life.—Dr. CHARLES HUNTER DUNN of Boston read this paper. He said that important conclusions, based on the immense number of autopsies, had been drawn as to the frequency of tuberculosis in early life, and the most striking fact brought out in the autopsy statistics was that the frequency of occurrence of tuberculosis increased regularly with the age. It was rare in the first three months of life, and increased steadily throughout childhood, not only from year to year, but also, in the first two years, from month to month. This fact was of great importance in connection with the question of source and mode of infection. The same statistics showed that tuberculosis as the cause of death in those cases in which it was found at autopsy decreased with advancing age. Tuberculosis in infancy and childhood was essentially a disease of the lymphatics. Tuberculous adenitis represented the chronic tuberculosis of childhood, as phthisis represented the chronic tuberculosis of the adult. They knew that in children the bacilli did not usually cause demonstrable primary lesions of the skin or mucous membranes, but localized themselves in the lymph nodes. Here they set up a chronic process which authorities agreed to be a reaction of defense, directed toward the prevention of a further extension of the virus. In proportion to the completeness of this protective reaction, the bacilli were either prevented from multiplying, and thus might remain indefinitely latent, or they multiplied, though prevented from spreading. In the former case, there were no clinical manifestations; in the latter, there was faulty nutrition, loss of weight, and occasionally fever. A metastasis of chronic tuberculosis was not the usual method in which further spreading took place. The usual method was the acute tuberculosis of early life. It was now generally recognized that the only source of tuberculous infection was the tuberculous man or animal. There were four theories that had been held as the source of the infection: First, the congenital theory, that tuberculosis was always intrauterine in origin, due to placental infection; second, that infection took place from the inhalation of dried tuberculous sputum; third, that the source of infection was the fine moist drops expelled in coughing; fourth, that the source of infection was the milk of tuberculous animals. It was now known that the bovine type could produce tuberculosis in man. In Japan, where there were no cattle, and where milk was never used as an infant food, tuberculosis was just as common, in just the same forms, as in milk-drinking countries. The whole history of tuberculosis in early life was against the idea of any one exclusive source of infection. The chief factor in tuberculous infection was the surroundings of the infant. It was probable that in infancy the commonest portals of entry were the lungs, the tonsils and nasopharynx, and the intestine. Corresponding to these three portals of entry, they found primary involvement of the bronchial, cervical, and mesenteric lymph nodes. Dr. Dunn then called attention to some theoretical considerations, and especially those recently advanced by Dr. Theobald Smith. As to the diagnosis of tuberculosis in early life, much work had been done with a view to determining the exact diagnostic value of the tuberculin reaction, and Schick believed that a local reaction was less apt to fail than the general constitutional reaction, and he concluded that no known case where tuberculosis had been excluded with certainty had given a local reaction, and that this reaction was often the only positive sign. As to serum diagnosis, final conclusions as to its value could not yet be drawn. D'Espine believed that he had found a reliable method of diagnosticating enlargement of the bronchial lymph nodes, by auscultating the voice. The most important diagnostic method, however, which they now had at their disposal was due to the recent perfection of radioscopic diagnosis. He said that there had been much discussion recently as to the possibility of recovery from tuberculous meningitis. In the literature of the last twelve years he found only three cases of recovery in which the diagnosis was satisfactorily established. The central problem had been the conferring of artificial immunity; this was so complicated

that, as far as human beings were concerned, but little positive and practical value had been accomplished. The human being was undoubtedly in a fairly good state of general resistance toward tuberculosis, and there was much hope that a method would be devised by which, by the creation of local foci under the control of the observer, general immunity might be attained.

The Present Status of the Transmissibility of Bovine Tuberculosis, as Illustrated by Infants and Young Children.—Dr. HENRY LARNED KIETH SHAW of Albany presented this communication. He said that Koch in 1901 called the attention of the medical profession to the question of the intercommunicability of bovine and human tuberculosis. Koch was the first to authoritatively state that tuberculous cattle were not the source of infection to human beings. Behring took the opposite view and claimed that all tuberculosis was of bovine origin. No attempt was made in Dr. Shaw's paper to review or analyze the vast amount of literature that was accumulating on this subject. Ravenel, in this country, Kossel in Germany, and the Royal Commission in England, had all produced bovine tuberculosis from the human bacillus. It was experimentally shown that the human bacillus was not very virulent to cattle; on the other hand, the bovine bacillus was very virulent to cows and swine. The question of greatest concern was whether the bovine bacillus was transmissible to man, and, if so, to what extent. This was a question that could not be demonstrated experimentally, but must be judged from inferences. Do bovine bacilli occur in milk and, if so, are they pathogenic for children? It was generally believed that the udders must be affected before bacilli were found in the milk. It was difficult to state the exact frequency of tuberculosis in cattle. The statistics showed that tuberculosis in cattle in the United States was far from an uncommon occurrence. If bovine tuberculosis was transmissible to children, it must be through the milk, and if all milk containing tubercle bacilli was capable of producing tuberculosis, very few would escape. In view of the very confusing literature, and wishing to establish a scientific clinical justification for the transmission theory, Dr. Shaw addressed a circular letter with questions bearing on this point to the members of the American Pediatric Society, to teachers of pediatrics not members of the society, and to several prominent pathologists who had contributed to this subject. Seventy-nine letters were sent out, and 67 answers received. The first question was: "Do you believe that bovine tuberculosis is transmissible to man?" Five replied in the negative, 25 would express no opinion, the remaining 37 answering "Yes," but 10 of these qualified their answers. The second question was: "Have you in your personal experience seen cases which you believed to be such?" There were only 9 affirmative answers to this question. The remaining twelve questions pertained to the clinical, pathological, and bacteriological points. Dr. Shaw gave a personal experience to show the importance of making a thorough examination of all the factors entering in the study of a clinical case. There could be little doubt in the mind of an unbiased observer after a careful study of the literature that infection took place both through the air and the food. Statistics from all sources showed that tuberculosis was relatively rare in the first six months of life, and that the greatest number of cases occurred between the second and sixth year. If tuberculous milk was such a great source of danger, the greater number of cases would appear before the second year.

Dr. THEOBALD SMITH of Boston, Dr. MAZYCK P. RAVENEL of Philadelphia, Dr. ALFRED MEYER of New York, and Dr. HESS of New York discussed these papers, and Dr. DUNN and Dr. SHAW closed the discussion.

Are Tuberculous Infants and Children in the First Five Years of Life Liable to be Sources of Infection?—Dr. SAMUEL S. ADAMS of Washington read this paper. He said that the answer to this question must of necessity involve theoretical reasoning rather than practical deductions, because data bearing directly upon this phase of the problem of tuberculosis were not to be found. As to the frequency of tuberculosis in young children, the statistics of the numerous clinicians precluded the possibility of reaching a definite percentage. In the Children's Hospital of the District of Columbia during the past twelve years, 2.2 per cent. of all patients admitted to the baby ward were tuberculous; the percentage of deaths from tuberculosis being 5.4 per cent. of the mortality of all causes. Of the pulmonary type, 0.88 per cent. were admitted, of which 50 per cent. died; of general tuberculosis, 0.66 per cent. were admitted and 83 per cent. died, and of the tuberculous meningitis 0.66 per cent. were admitted, and all died. The statistics of this institution, excluding infants under eighteen months, would show the frequency of tuberculosis approximating the percentage of cases examined by Müller of Munich, in which 40 per cent. were tuberculous. On the other hand, the records of the Washington Hospital for Foundlings gave a percentage less than that of either the New York Infant Asylum (8 per cent.) or the New York Babies' Hospital (14 per cent.). The large number of cases in the first named Washington institution was due to the admission of negroes, in whom it was the exception not to find tuberculosis at necropsy, whatever the immediate cause of death. Its frequency in the Washington Hospitals for Foundlings, when compared with similar institutions in other cities, might be attributed to racial and social influences. Sufficient evidence was at hand to establish the fact that infants and young children were more frequently affected by tuberculosis than was generally supposed, and that the organs involved in the greatest number were the lungs, as in the adults, but this did not prove that they were the sources of infection. It was generally conceded that the respiratory and gastrointestinal tracts were the avenues of entrance for the infection; but it was also admitted that as long as the tubercle bacillus remained with the host it was not dangerous to others. If they admitted that in 90 per cent. of tuberculous children under five years dying of the disease the respiratory tract was the portal of entry, and the lungs, pleura, and bronchial lymph nodes were the seat of disease, could they assert that such subjects did infect others? No one would deny that the youth or adult with pulmonary tuberculosis might infect others by his sputum, which contained the tubercle bacilli; but did the young child do this? In many cases of pulmonary tuberculosis, even in the worst forms, cough was absent and there was no expectoration. That being the general rule, how might such a child become the source of infection? It was true that the young child did not expectorate; but it was equally true that the exudate passed from the lung to the pharynx and was swallowed. Under such conditions tubercle bacilli might be found in the saliva, the vomited matter, and in the stools. If in the saliva, the opportunity for dissemination was offered. Tuberculosis of the mesenteric lymph nodes, the intestines, and peritoneum was next in frequency. So long as the tuberculous process was confined to the peritoneal cavity, there would seem to be little likelihood of the child being a source of infection other than auto. In tuberculosis of the intestines, especially with ulcerations, tubercle bacilli were found in the stools. If, then, the stools of the child having pulmonary, mesenteric, peritoneal, or intestinal tuberculosis did contain tubercle bacilli, they were as liable to spread this disease as were the stools of a patient with typhoid. Dr. Adams closed his paper by saying that we might assume that the young child affected with tuberculosis of the upper air passages, the lungs, or the intestinal tract, from which the tubercle bacillus had egress through the mouth, nose, or anus, was

a source of infection, and, reasoning from analogy, should be subjected to the same restrictions applicable to the adult similarly affected. In those cases, however, in which the tubercle spent its force in the cranial or peritoneal cavities, and in which there was apparently no direct exit for the microorganism, more or less uncertainty confronted them.

A Committee on Bovine Tuberculosis.—Dr. HENRY LARNED KEITH SHAW of Albany said that in view of the practical bearing of this subject from a sanitary, hygienic, and dietetic point of view, and the evident confusion and lack of positive knowledge, he earnestly urged that this Section take up a further and systematic study of bovine tuberculosis and its transmission through milk. A committee, to consist of a pathologist, bacteriologist, veterinarian, and two medical men (clinicians), could be formed to make a report at each meeting of the work being done in different countries, and to urge and see that a differential diagnobacteriological examination be made of all suspected cases. Therefore he offered the following motion:

"That the Chairman of the Section of Tuberculosis in Children, National Association for the Study and Prevention of Tuberculosis, appoint a committee to study this question of the transmissibility of bovine tuberculosis, such committee to report at each meeting of the Society." This was duly seconded and carried.

(*To be continued.*)

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-second Annual Meeting, Held in Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

FRANCIS P. KINNICUTT, M.D., NEW YORK, PRESIDENT, IN THE CHAIR.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 793.*)

Wednesday, May 8—Second Day.

Experimental Fibrinous Pleurisy.—Dr. EUGENE L. OPIE of New York read this paper, giving the results of his experiments on dogs. Serofibrinous pleurisy was produced by a sterile inflammatory irritant, such as turpentine, injected into the pleural cavity of the dog. Accumulation of fluid reached a maximum at the end of three days, and fluid had completely disappeared at the end of six days. Resolution of fibrin began (first stage) while fluid was present, and was completed (second stage) after the disappearance of the fluid. In the first stage the fibrin of the exudate digested itself in the presence of weak alkali, but in the second stage it had completely lost this power, and digested itself only in the presence of weak acid. It was possible that carbon dioxide in the body, acting as an acid, produced resolution of the exudate by the enzyme. By aspiration of fluid and by other means the characters of the exudate might be modified.

On Certain Acoustic Limitations of the Stethoscope and their Clinical Significance.—Dr. LEWIS A. CONNOR of New York City gave, in this communication, a summary of his findings in a series of heart and lung cases subjected to auscultation by means of the ear and of the stethoscope. Certain types of sounds in both lungs and heart could be more clearly heard with the naked ear than through the stethoscope. He cited three cases of aortic insufficiency in which a murmur was distinctly heard with the naked ear, yet neither he nor anyone else could hear it through the stethoscope. He had found again and again in lung cases that no bronchial breathing could be heard with the stethoscope, whereas with the ear a high-pitched, blowing sound could be heard twenty-four hours before audible with the stethoscope. He discussed the theoretic explanation of this peculiarity and its practical bearing, and emphasized the importance of medical students being taught to use the naked ear for purposes of auscultation.

Dr. SOLOMON SOLIS-COHEN of Philadelphia emphasized the point made by Dr. Connor with reference to teaching medical students to use the naked ear. As a teacher of medicine, he came in contact with students at the bedside who have been using the stethoscope only, and he found it very difficult to make them hear what he heard. He considered the sole use of the stethoscope that of localizing sounds previously heard with the naked ear.

Dr. E. G. JANEWAY of New York City said that in pneumonia certain sounds could be heard with the ear which could not be heard with the stethoscope.

Dr. A. JACOBI of New York City suggested that not infrequently over the area covered many sounds could be heard with a large stethoscope which could not be heard with a small one.

Dr. Connor in closing the discussion said that all his cases at the time the diagnosis was made were complicated cases, other signs were uncertain, and the diagnosis rested on the findings of the ear; the diagnosis later, however, became clear, and sounds could be recognized with the stethoscope.

Some Points Regarding Tuberculosis in Infancy.—Dr. L. EMMETT HOLT of New York City gave, in this paper, interesting data relative to the great frequency of pulmonary tuberculosis in children, the sources of infection, and the methods of obtaining sputum for examination from infants. He gave contagion in the home as the most frequent cause, the disease, as a rule, being contracted by infants living in infected households. The early symptoms were usually indefinite. He cited a record of thirty-six cases of tubercular meningitis in which the bacilli were found in the fluid by lumbar puncture. The proportion of cases in which the bacilli were also found in the sputum was large, even though no pulmonary signs or symptoms were present.

Dr. GEORGE M. KOBER of Washington, D. C., asked if any investigation had been made to recover the bacilli in the feces. In over 4 per cent. of the cases he had examined thus far bacilli had been found in the feces.

Dr. RICHARD C. CABOT of Boston, Mass., emphasized the importance of following up the children of tuberculous parents, as had been done at the Massachusetts General Hospital. Twenty-six out of a hundred children whose parents had been admitted to the hospital with a diagnosis of tuberculosis had been found to have the disease in one form or another, though not complaining of the disease, and going regularly to school. Such children were taken to the hospital and put under treatment.

Dr. HOLT, in closing the discussion, said it was surprising how much fluid could be withdrawn in these cases. It varies from one-half to two and even three ounces, the average amount withdrawn being one and a half ounces. He had made no study of the feces. Judging from the large number of bacilli swallowed, they should be present in the feces in large numbers.

A Study of Normal Living Anatomy in the First Twelve Years of Life.—Dr. THOMAS MORGAN ROTCH of Boston, Mass., emphasized the necessity of having a series of Roentgen rays taken which would show the development of the different parts of the body, organs as well as bones, from premature birth up to adolescence. He drew especial attention to the importance of observing the changes which take place in the zone of proliferation and in the development of the epiphyses. By means of this series of Roentgen ray pictures, which he intended to put into book form later, a physician or surgeon could, after having a radiograph taken of the especial disease case, compare the plate with that of a child of the same age and supposedly average anatomical conditions. The radiograph should be taken upon a standard basis, that is, the part being taken should be at a standard distance from the tube, it should be taken at a standard angle, and if the plate used be of natural size it should be

so stated; if enlarged, it should be stated how much enlarged; if reduced, how much reduced. A series of children of the same age should be taken before determining what the normal average picture at that age would be. He then exhibited a series of radiographs taken by Dr. A. W. George, Roentgenologist to the Children's Hospital, Boston. Of especial interest were the radiographs of twin premature babies at seven and a half months. He also showed radiographs of the stomach at various ages, emphasizing the value of such rays in cases of pyloric stenosis, where both diagnosis and treatment were somewhat uncertain. This had been accomplished by the introduction of bismuth into the stomach, and also by dilating the stomach with gas, the idea being that this should be done before resorting to exploratory laparotomy. He also showed how by this means the relations of the pericardium to the heart could be seen, and whether the pericardium should be tapped. The subject was of especial interest as something new and something which would be another instrument of precision in the hands of physicians and surgeons for diagnosis and treatment.

The Life-Saving Value of Diuresis. Dr. S. J. Meltzer of New York City reported a series of experiments on animals instituted for the purpose of determining the value of diuresis as a life saving measure. Experiments were made with subcutaneous injections of magnesium salts, seven different species of animals being employed for the purpose. It was found that one and a half grams per kilo would produce profound anesthesia, with complete relaxation of the entire musculature of the animal, but the animal would recover. If one and three-quarter grams per kilo be injected the animal would die of paralysis within an hour. It was found, however, that if the animal urinated between the anesthetic and the fetal stage recovery would ensue. Magnesium was eliminated through the urine in quantity varying between anesthetic and toxic doses. It was eliminated largely through the kidneys, but this assumption could not be accepted without further proof, as a number of alkali earths were eliminated through the gastrointestinal canal. Alkali earths were eliminated through the gastrointestinal canal and alkali metals through the kidneys. The degree of toxicity of magnesium salts, especially in rabbits, was studied, and it was perfectly evident that nephrectomy increased the toxicity, eight-tenths of a gram producing deep anesthesia in a nephrectomized animal when administered subcutaneously. Experiments with artificially produced nephritis gave similar results.

The Hemorrhagic Diathesis in Bright's Disease.—Dr. David Riesman of Philadelphia reported two cases of uncontrollable bleeding in Bright's disease. He said the hemorrhagic diathesis occurring in the course of Bright's disease might take the form of spontaneous bleeding from the mucous membranes—nose, mouth, uterus, intestine—or there may be bleeding into the skin, a true purpura. The condition was met with in all forms of chronic nephritis, perhaps more often when there was an associated arteriosclerosis; the latter, however, was not a necessary factor. The cause was to be found in toxemia, as well as, in some cases, in an altered state of the vessel walls.

A Case of Secondary Carcinoma with Recurrences in Unusual Sites.—Dr. George L. Peabody of New York City, in this paper, detailed the case of a woman forty-three years old, who, four years after removal of the right breast for carcinoma, developed pains especially marked in the lower extremities, small of the back, and shoulders. There were no joint pains and no swellings, except that the thyroid had always been large. The pains were severe and prostration became intense. The urine was greatly increased in amount, often over 200 ounces. The specific gravity was low and it occasionally showed many patches of pigment. Her chest and abdomen showed many patches of pigment. Electric reactions normal. No treatment relieved her pains; she slept but little, and gradually became mildly delirious. Lumbar puncture gave normal fluid. About a week before death she developed partial ptosis of the right eye, partial paralysis of the muscles of the right side of the face, weakness of the right palate muscles, and partial deafness of the right ear. Diplopia in part of field of vision. Pain in thighs and legs persisted, and pain in lumbosacral region on attempting to sit upright, and on pressure. No alteration in sensation otherwise. Eyegrounds normal. Urine and feces became involuntary. Muscles of deglutition gradually became impaired; water regurgitated through the nose. She died three weeks after coming under observation of edema of the lungs. Autopsy showed metastatic carcinoma of the thyroid, of one suprarenal gland, of one lung, of wall of an old cyst in cerebellum numerous small metastatic growths in pia and medulla, without lesion of pons or medulla. Diffused infiltration of perineural lymph sheaths of one trunk nerve of cauda equina, with carcinoma, and in one place the nerve trunk itself was similarly invaded. Pia covering cord showed small metastatic growths. New growths in lung showed several large vessels completely filled with carcinomatous tissue, and these carcinomatous thrombi suggested an explanation for secondary metastases.

Drs. Peabody, Meltzer, and Solis-Cohen discussed this paper, and the reader closed the discussion.

Experimental Observations Upon the Action of Intestinal Antiseptics.—Dr. J. Dutton Steele of Philadelphia read this paper, which discussed the difficulty of finding an index for the amount and character of bacterial activity in the intestine; the method of estimating the amount of bacteria in the feces by weight (Strasburger); the fact that scientific investigation of intestinal antiseptics has until recently been insufficient, leading to somewhat contradictory results, and the writer's experience with bismuth, salicylate, and beta naphthol, using the total amount of fecal bacteria as an indicator of their efficiency.

Dr. Lewis A. Connor of New York City called attention to the fact that it was as necessary to preserve the bacteria, which are normal and useful, as to destroy those which are harmful. He thought that in giving an intestinal antiseptic one was going blindly, and that by giving attention to diet and other measures one would be working in a much more hopeful direction.

Observations Regarding the Hygiene of Medical Cases, Particularly in Hospital Wards.—Dr. D. L. Edsall of Philadelphia gave a collective review of a number of groups of ward infections of various sorts. Part of these had been previously recorded, and part had not been published. He gave some suggestions as to the influence of superinduced gastrointestinal infections upon the cause of typhoid fever in particular, with recommendations regarding some points in ward hygiene, especially regarding ward nursing.

Dr. Victor C. Vaughan of Ann Arbor, Mich., called attention to the great epidemic of typhoid fever during the Spanish war, when both the laity and the medical profession in the United States got the impression that it was due to the fly, when in reality over 60 per cent. of the cases were due to contact infection.

Dr. George M. Kober of Washington, D. C., called attention to the fact that large numbers of cases of typhoid fever in nurses may be accounted for to some extent by the fact that they are as a rule at a susceptible age. He called attention, also, to the fact that the great epidemics of typhoid fever are reported by England and America, not by Germany, France, and Italy, noting the significant fact that the first two nations are in the habit of taking raw milk. Ten per cent. of the cases in the city had been traced to the milk supply. He emphasized the importance of pasteurization of the milk.

Dr. William H. Park of New York City cited several ward epidemics traceable to careless methods on the part of the nurse.

Dr. E. G. Janeway of New York City thought physicians should take better care of the nurses. As it is, they are

weakened by overwork and are very susceptible. They should be given more rest.

Dr. A. C. Abbott of Philadelphia emphasized the untrustworthiness of isolation, epidemics not infrequently following the release from isolation of a person apparently well. He cited one or two such instances.

Dr. W. P. Northrup of New York City cited the case of two roommates, teachers, who came down with typhoid fever. Investigation revealed the fact that they drank only distilled water, drank no milk, and ate only cooked food. The source of infection was traced to the glass jar in which the distilled water was kept.

Dr. Solomon Solis-Cohen advocated the more complete segregation of infectious cases in hospitals. The present imperfect system leads to many ward epidemics.

Dr. Edsall in closing the discussion agreed with the other speakers concerning the importance of isolation. Satisfactory isolation, however, was impossible with the present hospital facilities. The proper precautions would greatly reduce the number of epidemics.

Antitoxin and Post-Diphtheritic Paralysis.—Drs. M. J. Rosenau and J. F. Anderson of Washington, D. C., had carried on a series of experiments on guinea-pigs which fully justified the drawing of conclusions in respect to man. Dr. Rosenau, who read the paper, said that all the pigs received the same dose of toxin and antitoxin mixture, which was so nicely adjusted that none of them died. Those given 250 units of antitoxin twenty-four hours after infection recovered, whereas those given forty-eight hours after infection developed paralysis and died later. Those receiving one thousand units forty-eight hours after infection rapidly recovered. The pigs that received antitoxin in repeated doses daily told a similar but better story. Those that received 250 units twenty-four hours after infection and in repeated doses rapidly recovered; of those that received it forty-eight hours after infection two lived and one died. If antitoxin is given just before the symptoms begin it has no effect upon the paralysis or in saving life. The experiments emphasized the importance of giving the remedy early, and of giving large doses when the case is seen late.

Effects of Egg-White and Its Split Products Upon Animals; A Study of Susceptibility and Immunity.—Dr. Victor C. Vaughan of Ann Arbor, Mich., read this paper, which outlined the work done by himself and Dr. May Wheeler. For a number of years, he said, they had been studying the products obtained by splitting up various proteid molecules. The proteids with which they worked were bacterial, vegetable, and animal. All of these, they found, may be split up into poisonous and nonpoisonous portions. We have ascertained that the nonpoisonous products obtained by the cleavage of the proteids of the colon bacillus and of the typhoid bacillus induced specific immunity to the microorganisms of these diseases. Some two years ago we split egg-white into poisonous and nonpoisonous portions. The experiments of Drs. Rosenau and Anderson, on the susceptibility of animals to second injections of blood serum, led Drs. Vaughan and Wheeler to try the effect of the nonpoisonous portion of egg-white upon animals. They found that this part of egg-white sensitizes the animal to the unbroken egg-white, and that the sensitization thus induced corresponded in all particulars with that produced by the injection of unbroken egg-white. An attempt would be made to explain the sensitizing effect of the nonpoisonous portion of egg-white, and to show that this was along the same line as the immunity induced to the typhoid and colon bacilli by the nonpoisonous portions obtained from the cellular substance of these organisms. The claim would be made that when egg-white, or the nonpoisonous part of egg-white, is injected into a fresh animal certain cells of the body are so influenced that they elaborate a new ferment, which, in the form of zymogen, remains in the cell until activated by the second injection, when it is set free and splits up the egg-white in a manner similar to that which they had used in the laboratory, and that the effect induced is the same as that caused by the poisonous portion of egg-white, as they had split it up in the retort. Similar phenomena occurred when animals were immunized or sensitized with the nonpoisonous portion of the typhoid or colon bacillus, and subsequently inoculated with the living organism.

A Symposium on the Opsonins in Medicine.—The remainder of the session was devoted to this subject, the following papers being read:

A Review of the Experimental Basis of the Opsonic Phenomena.—Dr. E. L. Opie of New York City opened the symposium with this paper, giving as the experimental basis for the existence of opsonins the following: (1) The normal blood serum so modifies bacteria that they are readily ingested by phagocytes. (2) The power of the blood serum to promote phagocytosis is increased by immunization. (3) Nonvirulent bacteria are more readily prepared for phagocytosis than virulent bacteria. The properties of the opsonins and their relation to other bodies concerned in the processes of immunization are not clearly understood. The opsonic power of normal blood serum is subject to considerable variation, and this variation materially affects estimation of the so-called opsonic index.

The Opsonins in Tuberculosis.—Dr. Edward R. Baldwin of Saranac Lake, New York, reviewed the experiments on immunized animals. The opsonic function was less marked in immunized rabbit serum than in controls after test inoculations though at site of tubercles, phagocytosis was much stronger, and agglutination power of the serum higher. Of this he gave a provisional explanation. He called attention to the difficulties in determining the relation between the agglutinating and the opsonic functions, and the apparent independence of each. "Aggressin" from fatally poisoned guinea-pigs retained opsonic functions; virulent bacilli "opsonified" by immunized cow serum retained virulence. There was an apparent absence of bacteriolysis in test-tube, but a possible connection with it in the animal. Apropos of von Behring's statements application to the vaccine therapy was suggested. The paper closed with some remarks on the technique of the opsonic test and its application in pulmonary tuberculosis.

The Opsonic Index in Certain Acute Infectious Diseases.—Dr. Ludwig Hektoen of Chicago presented this paper, in which he discussed the course of the opsonic index in typhoid fever, pneumonia, diphtheria, and erysipelas. He presented a series of charts illustrating the streptococcoopsonic index in scarlet fever, with and without complications, and called attention to the effect of suppurative scarlatinal otitis on the opsonins for the bacteria concerned.

A Summary of the Studies on Opsonins Carried Out at the Rockefeller Institute.—Dr. E. H. Schorer of New York City read this paper. The opsonic index in cases of erysipelas was constantly neither nigher nor lower than normal. Vaccines were prepared from streptococci isolated from wound infections and from cases of erysipelas. Fifty cases of erysipelas were inoculated with such vaccines, the opsonic index being determined at intervals by use of the same microorganisms. The inoculation of vaccine was not followed by a constant modification of the opsonic index or of the course of the disease.

A Summary of the Work on Opsonins at the Johns Hopkins Hospital.—By Drs. L. F. Barker and Rufus I. Cole of Baltimore, Md. The paper epitomized the work done during the past year in the medical and surgical wards of the Johns Hopkins Hospital, and in the biological division of the Clinical Laboratory. The report included the results of the determination of the opsonic index for diagnostic purposes and as a guide to vaccine therapy. It also dealt with the results of investigations concerning the reliability of the methods now in vogue, the specificity of opsonins, the possibility of the production of sera of high concentration in opsonins, etc.

A Summary of the Studies on Opsonins Carried Out Under the Auspices of the Commission for the Investigation of Respiratory Diseases of the New York Board of Health.—By Drs. HERMANN M. BIGGS, WM. H. PARK, and NATHANIEL B. POTTER of New York City. The results of these studies were presented in two papers, one read by Dr. Park and the other by Dr. Potter, the latter being illustrated with lantern slides. From all the work done it was concluded that the opsonic index must be considered an approximate, and not a real index of the amount of opsonins in the blood in any given test. The errors were inherent in the method, and probably could not be eliminated by any other method. It was found in the treatment of a number of cases by vaccine that, as a rule, the index had not been a sufficient guide to the treatment by the injections. In some of the cases, especially those due to local staphylococcus infections, good results had been obtained by vaccines, while in cases of mixed infection and of inflammation of mucous membranes the results on the whole had been satisfactory. In tuberculosis the results in those treated under the guidance of the opsonic index had not differed from those treated in other ways.

Dr. CHARLES E. NORTH of New York City presented a number of charts showing the variation in the findings of twelve laboratories working simultaneously with the same organism according to the Wright-Douglass method.

Dr. THOMAS MORGAN ROTCH of Boston presented the results of his clinical work in his wards at the Children's Hospital in Boston. He had treated a series of cases of cerebrospinal meningitis in children, and had studied the opsonic index in connection therewith. Some of the cases were acute and some subacute. The dose of the meningococcus vaccine given was one hundred and twenty million. He explained that he had at the head of the bed a chart showing the temperature, pulse, and respiration, and also the opsonic index. In connection with each chart he gave the age, the duration of the disease, the character of the especial case, whether acute, chronic, mild or severe, also the effect on the opsonic index when spinal puncture was made, when inoculation was given, and when antitoxin was given. There seemed to be interesting relations between the use of antitoxin and the meningococcus vaccine. In cases where the meningococcus vaccine did not raise the index antitoxin was found to do so. Two or three years ago he had treated in his wards twenty-five cases of cerebrospinal meningitis in children with antitoxin, with some interesting results, but on the whole they were not satisfactory from a curative sense.

Dr. Ross of Montreal, Canada, who had worked with Wright for three years, spoke very enthusiastically of the work and of the clinical value of the opsonic theory, but said he would welcome some easier method which would enable him to obtain the same results.

Drs. BARKER, WEBB, and others took part in the discussion, which was closed by the readers of the various papers.

(To be continued.)

AMERICAN SURGICAL ASSOCIATION

Twenty-eighth Annual Meeting, Held in Washington D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Special Report to the MEDICAL RECORD.)

(Continued from page 797.)

Wednesday, May 8—Second Day.

Ancient Egyptian Surgical Instruments.—Dr. M. SOLIS COHEN of Philadelphia demonstrated these instruments, which were said to have been found in the tomb of a physician east of the Nile, near Thebes. The instruments, made of bronze, were probably the earliest surgical instruments existing in the world, the date of their manufacture being somewhat more recent than 2,000 years B.C. Their use had been conjectured as possibly for cataract.

End Results Following Operations for Carcinoma of the Breast.—This was the title of all the papers read at the session. Dr. WM. S. HALSTED of Baltimore read the first paper of the series. He said that statistics could be varied by selecting the cases and by classifying the cases according to different standards. All statistics, he thought, should exclude the totally inadequate operations that were recognized by all. Excluding the incomplete operations done at Johns Hopkins Hospital, there had been 89 cases, 43 per cent. of which were free from recurrence at the end of three years. As to the point of recurrence, bone metastases in forearm and lower leg had not been recorded, and subcutaneous recurrences had been limited to an area still slightly nearer the primary growth, extending to mid-thigh and to mid-arm, hence he did not consider blood metastases as probable, but the spread as due to the lymphatics by way of the fascial planes. In support of this were the bone lesions in the femur, most often at the great trochanter, and in the humerus at the insertion of the deltoid. Similar lymphatic spread could account for lesions in brain and liver. Of the cases that at the time of operation had had no glandular involvement there were 64, of which 70 per cent. had remained cured. Of 110 cases with axillary gland involvement 25 per cent. remained cured. Of 101 cases with cervical gland involvement only 7 per cent. remained cured. To confirm the diagnosis of a cure he would insist on a negative autopsy at the expiration of five years. He removed the glands of the neck in most of the cases with the exception of adenocarcinoma. He expected to recognize cancer cysts by their containing blood-stained fluid, their having very thin walls, and the presence of papillomata; but he had failed in this in the first few cases and had had to do an early secondary operation after the pathologists' report. He considered the extension most rapid beneath the skin, and so did an extensive removal of skin and neighboring muscle planes. He presented the following table of results:

Cancer cysts	6 cases,	2 cured,	33.3	per cent
Adenocarcinoma	32 "	24 "	75	"
Medullary carcinoma	25 "	12 "	48	"
Circumscribed scirrhus...	28 "	13 "	46.4	"
Small infiltrating scirrhus.	80 "	30 "	35.5	"
Large infiltrating scirrhus.	39 "	8 "	20.5	"

Dr. J. C. WARREN of Boston read the next paper. He gave the statistics of the Massachusetts General Hospital, which represented the work of numerous surgeons. The work of collaborating the material had been done by Drs. Greenough, Simms, and Barney, who had seen and examined the cases, at their houses if necessary, to determine the late results of the operations. The statistics were for a continuous series of cases operated on at the hospital in the ten years ending three years ago. Of these there had been 376 patients with 416 operations; 64 were alive and well from three to thirteen years after the operation. Seven had died of some other disease after the lapse of three years, making a total of 71 cases, 20.9 per cent., that had been cured without recurrence for three or more years. All but one of these had good use of the arm. There had been a swelling of the arm in some of the cases for a shorter or longer period. Of the unfavorable conditions at the time of operation he mentioned adherence of the tumor to the skin or to the chest wall and involvement of axillary and cervical glands. Of all the cases in which the cervical glands were felt, only two had survived, and in those two the glands that were felt and removed had not been cancerous. In none of the cases, where both breasts were involved, had the patient survived. Of the different types of cancer the medullary seemed to have had the greatest malignancy and the adenocarcinoma to have been relatively benign. The type of cancer and the extent of involvement were the most significant factors to be considered in the prognosis. Of 100 cases where the complete

operation had been done, removing glands in the axilla and neck, 60 had been cured. The removal of a large area of skin had given better results than removal of small areas. In the incomplete operations 25 per cent. were free from recurrence. This apparently better result from the incomplete operation than from the complete operation was due to the extent of the lesion and the character of the tumor chosen for the incomplete operations. Of the cases in which merely palliative operations had been done, not expecting a cure, four were cured. Perhaps these patients had been able to combat successfully with the small amount of tissue that had been left. Recurrences in the scar had occurred in 48 per cent. of the cases. There had been four cases of late recurrence; two in the scar, one at eight years, and one at eight and a half years; there had been a metastasis in the spine at seven years, and another recurrence at six years. Eighty-eight cases that had passed the three-year limit had died later.

Dr. A. T. Cabot of Boston read the next paper. In this he discussed his own private cases. He had made no selection of cases except to exclude one woman who had a bad heart and an adherent cancer. Of these forty-two cases nine were free from recurrence from four to nineteen years. Five others are living, but had had recurrences which were removed more than three years ago. Of the nine cases that were well three had been adenocarcinoma, three small scirrhus, one Paget's disease, one medullary cancer, and in one the diagnosis had been lost. Of these, in six there had been no cancer in the lymph glands removed, and in the other three only slight involvement. He used *x*-ray treatment to check growth in the inoperable cases. Recently he had begun to give *x*-ray treatment in all cases immediately after operation, but none of these cases were included in the report, because they were all too recent.

Dr. J. C. Munro of Boston said that he wished to make merely a preliminary report on 105 cases, 27 per cent. of which had remained free from recurrence for from three to fifteen years. The longest were cases in which he had removed axillary glands and fascia, but not muscle. Of the recurrences four-fifths had been inside of two years.

Dr. Willy Meyer of New York reported eighty-seven personal cases operated on since 1894. Of these thirty per cent. had been well from five to twelve years. He did not consider the neck operation desirable as a routine unless the glands were found involved. During the operation sometimes the subscapular nerves could be sacrificed to advantage, and also the axillary vein removed. Edema of the arm was rare, and usually due to the cicatrix. Neuralgia was present in some of the cases. All had full use of the arm. In cases where the primary tumor involved the upper quadrants involvement of the neck glands were more likely. He did the radical operation on all cases except where metastases were present, taking out breast, axilla, and all tissues en masse.

Dr. L. S. Pilcher of Brooklyn spoke especially of the cases in which the neck had been involved and its glands removed with the breast and axilla. The main opposition was the argument that in such cases the mediastinum was also probably involved. He recognized the fact that all such cases were well advanced, but knew that some could be saved. He had had one case that seven years after operation had died of heart trouble, and two other cases alive and well, one seven and one nine years after operation. Of eleven cases, nine had been free six months or more. In four cases the neck glands had been felt before cutting the skin; in eleven others only after the skin incision. The point of suspicion in the neck is in the subclavian triangle around the jugular vein. He considered no operation complete without exploration of the base of the neck.

Dr. A. Vander Veer of Albany, reporting his personal cases and hospital cases over a period of forty years, spoke of the marked improvement in the results of the operation since his first cases. He had operated on 103 patients, of whom thirteen were well. The longest period after operation in which he had seen recurrence was twelve years. He cleaned out, now, the axilla in all cases, but tried to save the nerves. He had had three cases with lumps in the breast for from six to twenty years, after which they had developed adenocarcinoma of very rapid development. He had had ten cases of traumatic history, and one case of worry and fear that cancer would appear until found a year later. After that the patient had worried about the other breast, and the development of a cancer there had followed a year later, and after that had been promptly removed by death from metastases.

Dr. A. J. Ochsner of Chicago had been able to trace to a final report 101 of his 164 cases. Of these 57 were living, and all but two well. All were operated on more than a year ago, 39 living more than three years after operation; 25 more than five years, and 5 more than ten years. Of the 57 living cases 10 had stiffness of the arm. All of his cases in the past six years had had *x*-ray treatment. One woman operated on in 1801 had a recurrence in the scar within six months. This had disappeared under the *x*-ray, and the woman was still alive and well five years after. One case of recurrence where the *x*-ray had no effect had been cured by a paste. Another case of cancer had been cured by some patent medicine given hypodermically. One case of cancer of the neck and axilla had been cured by the *x*-ray. An isolated node appearing later had been excised and followed by the *x*-ray, and the patient was alive five years later.

Dr. N. Jacobson of Syracuse spoke of the marked variations in virulence even in tumors of the same type. In one case of scirrhus cancer, which is usually so slow in development, a mass the size of a hen's egg, with axillary involvement, had appeared within ten days. There had been recurrences inside of a month, and the patient died of metastases inside of six months. In another case of scirrhus cancer the operation was done with a wide excision two days after the cancer was first noticed. Three months later there were recurrences over all the chest wall and back, and the patient died in a few months. He seemed to think that there was a special predisposition to cancer in some persons with recurrence in various organs. He had had one case with cancer in uterus, breast, and stomach. He had had three cancers of the breast in men, all with recurrences and death.

Dr. J. C. Oliver reported thirty-five personal cases, all operated more than three years ago. He had had two cases with a radical operation done on one breast and a simple operation done later on the other breast; both patients were alive and well, one five and the other seven years after the operation. He had had one case with fatal recurrence after fourteen years. He had had two rapid, malignant cases recurring in tumors that had been in the breast, one for ten years and one for twenty years. He considered supraclavicular recurrence less frequent than involvement of the opposite breast. Tumors in the central portion and lower quadrants gave the most recoveries. He hoped to learn more of the prophylaxis and nature of cancer in the future.

Very Late Recurrences after Operation for Cancer of the Breast.—Dr. J. Ransohoff of Cincinnati read this paper. He said that twenty per cent. of the cases that passed the three years limit for cure died of recurrence, and he would rather put the limit of recurrence at five or seven years. He considered the improved end results after such operations to be due to the increasing intelligence of the people. He had been able to collect reports of cases living 22, 26, and 20 years after operation and that after an incomplete operation. He considered one great danger of the operation from excessive manipulation of the tumor. He said that local recurrence took place in fifty-eight per cent. of the cases. That recurrence appeared during the

first year in sixty-two per cent. of the cases; that recurrence occurred principally in the scar or neighboring skin, but that after three years this local recurrence was less frequent. He had found reports of sixty-two cases with recurrences after six years, the latest at the end of nineteen years. In several cases there had been distant, but no local recurrence. In one case after twenty-one years there had been a recurrence in the scar. The later appearances in these remote organs were probably primary cancers. In some of the cases with the longest interval before the recurrence there had been no axillary involvement at the time of operation. A possible explanation of the long interval would lie in cell deposits that have remained dormant just as retrograde processes were known to follow giant cell action upon some condition. Or again that the scar tissue was especially subject to disease and degenerated anew in the site of the former operation.

The Law of Accelerating Risk Clinically Tested in Breast Cancer; End Results Compared with the Predictions.—Dr. E. W. Andrews of Chicago read a paper explanatory of the theory that cancers follow the law of squares in their rate of development, the cancer growing incessantly with no acquired resistance to combat it and no retrogression. On the contrary, the vigorous people seemed to show more susceptibility to cancer. Cancer seemed to grow at an accelerating rate, so that in a short time the danger from the growth became extreme. He charted the time required for the cancer to double in size, and when the size had doubled the risk had quadrupled. He reported one case in which the mass had doubled in a week, and five months later, in spite of operation, the patient died from cancer of both breasts. This was an exceedingly rapid growth and probably no operation could have saved the patient.

(*To be continued.*)

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twenty-fourth Annual Meeting, Held at Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Special Report to the Medical Record)

The President, Dr. Thomas Darlington of New York, in the Chair.

Tuesday, May 7—First Day.

President's Address.—Dr. Darlington warned against the possible tendency of the Association to focus too large a share of attention upon pulmonary tuberculosis, worthy and important as the subject was, and presented suggestions for future achievement in other lines of work. The results of the Association toward the elimination of tuberculosis were dwelt upon, and attention called to the need of more work along the line of the mode of infection of pulmonary tuberculosis. Particular emphasis was placed upon the question of intestinal infection caused by the ingestion of contaminated food. In referring to the potential possibilities of the Association in research work, attention was called to the increased mortality from heart and kidney diseases. Charts were exhibited showing most graphically this increase in New York City. Figures were given showing the death rates in a number of cities of the United States, the most marked increase being in Boston, where the rate from heart disease was 11.71 in 1880 and 18.17 per 10,000 population in 1905. New Orleans gave the greatest increase in the mortality due to Bright's disease, the rate being 5.21 per 10,000 population in 1881 and 17.30 in 1905. Using the complete tables as a basis, it was shown that the death rate from these diseases in Boston, New York, and Chicago had nearly doubled in the twenty-five-year period, while the general death rate had shown a decided decrease. A study of the causative factors of this alarming increase naturally suggested the part played by the nervous activity of the modern city business man and the equally strenuous social whirl of the city woman. The doctrine of the restful life, of individual self poise and mental and physical well being was advocated. The relation of influenza to the causation of cardiac difficulties was mentioned as an almost untilled field for investigation. Pneumonia among infectious diseases also demanded attention. While the hope of its specific medication seemed to lie in the field of serum therapy, it was suggested that the profession was probably too quiescent in its attitude toward general prophylaxis and the methods tending to eradicate the disease. The question of climate in relation to the prevalence of disease should receive more attention than it has heretofore. Reference was made to the fact that the Esquimaux brought by Commander Peary from the Arctic regions in 1898 practically all succumbed to pneumonia soon after reaching New York, while the disease is unknown in their home climate. An investigation of the causes of the acute respiratory diseases was urged as a subject well worthy the attention of the Association.

The Search for a Suitable Climate.—Dr. Samuel A. Fisk of Brimfield, Mass., read this paper, giving his personal experience as a basis of judgment. As a young man of twenty-four, broken down with consumption, but with a tendency to repair, he had gone to Colorado. He had found it preeminently a place of outdoor life, flooded with sunshine, abounding in a dry, pure air, with ideal temperature and a dry soil. The comparative advantages of Minnesota, Colorado, Nassau, Southern California; the hills of New England, of New York, Arizona, New Mexico, and life on shipboard, were considered, and Colorado was given decided preference as a place of residence for one presenting the conditions manifested by the author in his early life.

Dr. Delancey Rochester of Buffalo would send tuberculous patients to Colorado or North Carolina. His choice as a substitute for these localities would be the Adirondack Mountains, and his last resort the employment of home treatment.

Dr. W. Jarvis Barlow of Los Angeles said that the fogs mentioned by Dr. Fisk as peculiar to Southern California were to be found only near the coast. An advantage of the fogs was their tendency to make the weather cooler. Persons with kidney and heart troubles, he thought, did better in Southern California than did those with pulmonary affections.

Dr. Charles Denison of Denver called attention to the great value of the personality of the author bearing upon the paper forming an authoritative statement from the membership of the Association of the value of the climate of Colorado.

Dr. F. I. Knight of Boston expressed his appreciation of the beautiful manner in which Mrs. Fisk had read the Doctor's paper.

Dr. J. Edward Stubbert of New York City was particularly interested in the paper, in that his own experience in the development of tuberculosis had been somewhat similar to that of Dr. Fisk. In contrast to Dr. Fisk, however, he had taken short trips into various climates, but had not been to Colorado. He had been to sea in the tropics and returned with the disease apparently cured, but it had redeveloped. He had then gone to China and lived in a climate where the sun shone for five minutes in twenty-eight days. He had subsequently entirely recovered. The application of the same rule in the treatment of many of his cases of tuberculosis had given good results. He would send patients south on a sea trip in preference to the North Atlantic, because of their ability to live on deck in the open.

Dr. William C. Rives spoke of the invigorating effect of climates of high altitude upon persons of ordinary health, arguing that tuberculosis, preeminently a disease of malnutrition, therefore should be benefited by the appropriate climate.

Dr. Vincent Y. Bowditch agreed with Dr. Fisk in his opinion of the climate of Colorado for tuberculous cases. For the vast number of patients who cannot possibly go away he advocated the home treatment. Every case should be judged upon its own merits.

Dr. R. H. Babcock of Chicago thought that Dr. Stubbert's recovery was not because, but in spite of the short trips he had taken. Regarding climate, Dr. Babcock believes that patients can recover at home, but that recovery is much more easily accomplished in a proper climate.

Dr. James A. Hart agreed in the opinion of Colorado being a favorable climate for tuberculous cases.

Dr. Fisk, in closing, said that he did not wish to take issue with Dr. Barlow, except to say that when in Southern California in 1902 his clothes, if hung by a window at night, were too damp for wearing the next morning.

Leishman-Donovan Disease or Assam Fever.—Dr. Judson Daland of Philadelphia read this paper, referring to the synonyms commonly employed for this disease and making mention of the geographical distribution of kala azar. The cause and relationship of the Leishman-Donovan body to the disease was established. The author holds the opinion that already sufficient evidence exists to justify the belief that the alternate host is the bedbug. That the disease is a house infection, probably carried by a biting insect, has long been the opinion of Major Leonard Rogers. Captain Patton of Madras had been able to demonstrate the life cycle of the parasite in bedbugs fed upon blood from a case of Assam fever. In the opinion of the author kala azar was transmitted from the sick to the well by the bedbug. Diagnosis, differential diagnosis, and the complications of the disease were discussed, special stress being laid upon the method of securing the blood for the detection of this parasite by splenopuncture. Long-continued, irregular, alternating, intermittent or remittent fever, enlarged painful spleen, enlarged liver, progressive loss of flesh, strength and color, leucopenia with mononuclear increase, and pigmentation of the palms of the hands and soles of the feet were mentioned as being highly diagnostic, especially in the absence of the malarial parasite from the peripheral blood. The only treatment of value was said to be the prophylactic, and but moderate benefit was to be expected from the use of from 60 to 90 grains of quinine each twenty-four hours.

Dr. Frank Fremont-Smith inquired whether the disease occurred in the Southern States.

Dr. Daland said that until within a few years ago the disease was supposedly confined to Assam and the region of Madras, but that recently in Egypt and Arabia the identification of the disease has made it seem not impossible to find it in our Southern States or in the West Indies

(To be continued.)

Treatment of La Grippe in Children.—Laumonier calls attention to the important influence of grippal infection on the functions of the organism of a child during the period of convalescence. At this time the patient is a prey to general asthenia. The tissues offer a good soil for grave infections and the natural forces of the organism should be fortified in order to prevent such dangers. The body cavities, especially the nose, should be cleansed with weak boracic acid solution. The child should be kept in bed in a large, well-aired, and sunny room until convalescence is fully established. A very light diet should be given. Drugs should be suited to the special indications for them. Great care should be taken of children who have been exposed to this infection. The nose, mouth, and throat should be kept clean and all clothing or other objects that have come in contact with the patient should be thoroughly disinfected. Every child suffering with grippe should be isolated from the rest of the household. The convalescent patient should be sent to the country. A month's time will generally be sufficient for restoring the health.—*Française de Médicine et de Chirurgie*

Medical Items.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 10, 1907:

SMALLPOX—UNITED STATES.

		CASES	DEATHS
Florida, Hillsboro County	Apr. 20–27	2	.
Georgia, Augusta	Apr. 23–30	4	.
Illinois, Aurora	May 2	..	Present
Danville	Apr. 23–30	1	.
Plainfield	Apr. 17–May 2	30	.
Springfield	Apr. 25–May 2	1	.
Indiana, Elkhart	Apr. 20–27	1	.
Indianapolis	Apr. 21–28	4	.
Jeffersonville	Apr. 1–30	1	.
La Fayette	Apr. 22–29	1	.
Marion	Apr. 1–30	4	.
Michigan City	Apr. 1–30	1	.
South Bend	Apr. 20–27	1	.
Iowa, Ottumwa	Apr. 6–27	10	.
Kansas, Kansas City	Apr. 27–May 4	2	Imported
Lawrence	Mar. 1–31	6	.
Kentucky, Louisville	Apr. 25–May 2	1	.
Louisiana, New Orleans	Apr. 20–27	10	.
Massachusetts, Chelsea	Apr. 20–27	1	.
Lawrence	Apr. 20–27	16	.
Michigan, Ann Arbor	Apr. 20–27	1	.
Saginaw	Apr. 20–27	1	.
Minnesota, Stillwater	Feb. 1–28	1	.
Winona	Apr. 20–27	3	.
New Jersey, Hoboken	Apr. 27–May 4	1	.
New York, New York	Apr. 20–27	1	1
North Carolina, Greensboro	Apr. 20–27	5	.
Ohio, Cincinnati	Apr. 20–May 5	1	.
Cleveland	Apr. 19–26	1	.
Toledo	Apr. 20–27	4	.
Texas, Bell County	May 3	3	.
Houston	Apr. 20–27	9	.
San Antonio	Mar. 30–Apr. 6	2	.
	Apr. 20–27	2	.
Washington, Spokane	Apr. 20–27	16	2 imported
Tacoma	Apr. 20–27	1	.

SMALLPOX—INSULAR.

Philippine Islands, Manila	Mar. 16–23	7	.

SMALLPOX—FOREIGN.

Brazil, Para	Apr. 6–13	2	1
Canada, Toronto	Apr. 6–13	3	.
	Apr. 20–27	3	.
Chile, Coquimbo	Apr. 6	2	.
Iquique	Apr. 6	..	Present
China, Hongkong	Mar. 9–23	53	34
Nanking	Mar. 23–30	2	.
Shanghai	Mar. 23–30	3	.
Tiensin	Mar. 23–30	2	.
France, Paris	Apr. 13–20	11	1
Toulon	Mar. 1–31	12	5
Germany, General	Mar. 16–30	37	.
Gibraltar	Apr. 14–21	1	.
India, Bombay	Mar. 26–Apr. 9	..	8
Calcutta	Mar. 23–30	..	81
Madras	Mar. 30–Apr. 5	..	6
Rangoon	Mar. 16–30	..	3
Italy, General	Apr. 4–18	35	.
Madeira, Funchal	Apr. 14–21	60	12
Mexico, Jalapa	Apr. 10–26	..	1
Mexico	Mar. 23–Apr. 6	..	23
Veracruz	Apr. 20–27	..	1
Peru, Lima	Mar. 31–Apr. 6	..	Present
Russia, Odessa	Apr. 6–13	11	1
Siberia, Vladivostok	Mar. 21–28	.	1
Spain, Valencia	Apr. 14–21	1	.
Straits Settlements, Singapore	Mar. 16–23	..	1
Turkey in Asia, Bassorah	Mar. 30–Apr. 6	..	5

YELLOW FEVER.

Brazil, Manaos	Apr. 6–13	..	1
Ecuador, Guayaquil	Apr. 6–13	..	7

CHOLERA.

India, Bombay	Mar. 26–Apr. 9	..	2
Calcutta	Mar. 23–30	..	57
Madras	Mar. 30–Apr. 5	..	1
Rangoon	Mar. 16–30	..	13
Straits Settlements, Singapore	Mar. 9–16	..	1

PLAGUE—INSULAR.

Hawaii, Honolulu	Apr. 29–May 6	8	4

PLAGUE—FOREIGN.

Brazil, Para	Apr. 6–13	3	2
Chile, Antofagasta	Apr. 6	21	6
Santiago	Apr. 6	..	Present
Talcahuana	Apr. 6	..	"
China, Hongkong	Mar. 16–23	3	3
Egypt, Alexandria	Mar. 28–Apr. 11	2	2
Assiout Province	Mar. 28–Apr. 11	10	4
Beni Souef Province	Mar. 28–Apr. 11	2	2
Cirgeh Province	Mar. 28–Apr. 11	6	3
Keneh Province	Mar. 28–Apr. 11	68	45
Mimieh Province	Mar. 28–Apr. 11	12	4
India, Bombay	Mar. 26–Apr. 9	..	1,262
Calcutta	Mar. 23–30	.	166
Rangoon	Mar. 16–30	..	163
Peru, Eten	Mar. 20–Apr. 6	6	5
Lambayeque	Mar. 30–Apr. 6	7	3
Lima	Mar. 30–Apr. 6	..	601
Paita	Mar. 30–Apr. 6	11	5
Santiago de Cao	Mar. 30–Apr. 6	1	1
Trujillo	Mar. 30–Apr. 6	8	.

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Original Articles.

THE ANTRUM OF HIGHMORE AS AN ETIOLOGICAL FACTOR IN THE PRODUCTION OF HAY-FEVER (SO-CALLED).*

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THE following paper is presented for the purpose of drawing special attention to a certain phase of a familiarly known disease, the cause and treatment of which have always been perplexing to understand. According to recent experiments, the disease appears to be based on anatomical deviations in its pathological aspects. These anatomical malformations act both as predisposing and contributory local factors. In accordance with this view, clinical investigations demonstrate that the antrum of Highmore holds an important position in the etiology of hay-fever and in some of the commoner forms of catarrhal and nervous disturbances of the nose. A series of a large number of cases coming under this class of affections, I have studied during the past number of years with considerable interest. The results of my observations have been of such a character as to corroborate the theory. To discuss empyema of the antrum in this connection is not the province of this report. In the first place the design is to deal with nonsuppurative processes. While of the pus-producing conditions of the antrum much has been said in recent years, and medical literature abounds in valuable contributions on the subject, reference will be made to suppurative maxillary sinusitis only for the purpose of illustrating pathological and symptomatic relationships.

It is my belief that the nervous catarrhal manifestations of the nose, in their relation to the presence of a catarrhal maxillary sinusitis, are of sufficient importance to merit attention and suggest further investigation. Is it not logical to associate disturbances of the maxillary sinus with the various forms of nervous coryza, when it is remembered that an intimate anatomical and physiological relationship exists between this cavity and the nasal passages in their nerve supply and mucous membrane connections?

In order to show the ground for believing that the antrum forms an etiological factor in the causation of hay-fever, I will quote in this connection the history of my first case treated in the manner herein described: F. N. D., aged forty-three years, lawyer, suffered from hay-fever for a period of twenty-five years. Nine months before his first attack, he sustained an injury to the nose from a blow received on the right side over the region of the maxillary sinus. This injury was followed by stenosis of the left nostril, which at the time of my examination twelve years ago, when he first consulted me on account of hay-fever, was found to be obstructed by the presence of a deviation and exostosis of the septum. The patient contended that the hay-fever resulted from the traumatism, as prior to the infliction of the injury he experienced none of the symptoms peculiar to the disease. This occurred early in the spring, and the attack of hay-fever came on in the autumn of the same year. At the time of our first interview (twelve years ago) his suffering was intense and the symptoms of the disease were pronounced, chief among which was an orbital cellulitis of a serious character. With a view to lessening the severity of the symptoms, I suggested correction of the septal deformity as soon as the urgent symptoms had sufficiently subsided to warrant operative interference. Removal of the exostosis and correction of the deviation improved his respiration and general condition; but he still continued to suffer thereafter more or less severely from the disease during subsequent years. It was a common occurrence for him to be incapacitated for work from six to eight weeks out of the year, and he was left at the end of each season in a state of general physical debility. In the latter part of December, 1903, he began to complain of facial neuralgia and severe pain over the right superior maxillary bone. He consulted me in reference to this trouble, and I found that the antral cavity was very much disturbed, as was evidenced by the presence of offensive discharges in the right nostril. The antrum was cleansed by irrigation through the opening communicating with the nose. A warm normal salt solution was used. The contents of the sinus as they appeared in the drainage basin, were found to be most offensive, the discharge consisting of inspissated mucopurulent material which had undergone fermentation and decomposition. A number of similar irrigations at different intervals succeeded in affording complete relief both as to maxillary pain or tenderness and the condition of the sinus itself. Of considerable interest was the fact that the opening of the antrum in this case was extremly abnormal, as it was possible to introduce a large-sized Eustachian catheter. This unusual openin[illegible] without doubt, by virtue of its admitting readily into the sinus particles of extraneous irritating or infective substances, contributed in no small degree toward creating the disturbance of which he was suffering at the time. Having known the man so well as a hay-fever victim in previous years, it occurred to me that, perhaps, the diseased antrum and its abnormal opening formed the basic lesion of his autumnal catarrh. The suspicion that this might be so, ended in a mutual understanding that when the next hay-fever season arrived, I should treat the antrum for experimental purposes. About the middle of August (1904) he was seized with the usual symptoms of the disease, but he did not visit me until two weeks

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later, when he recalled our mutual arrangement. During these two weeks he had suffered about the same as on former occasions, and on the day of his visit the symptoms were well marked. I washed out the antrum with a very warm solution of boric acid, the return fluid from the cavity containing quantities of retained and decomposed secretions; the syringing of the sinus was continued at each sitting until the solution appeared clear in the catchbasin. These irrigations were followed by injections of a warm 5 per cent. solution of mentholated oil into the antrum. The next day the symptoms had materially abated and I again treated him as on the day previous. He did not return until two weeks later, when he presented himself more for the purpose of making a report than to be treated. He said after the second treatment all the symptoms, both local and general, disappeared. In 1905, he gave the method a thorough trial. During the season, beginning August 15, he was treated on five different occasions every other day and thereafter once a week, which treatment had the desired effect, and his suffering as compared with other years was minimized to such a degree as to render him absolutely comfortable. As the mentholated oil was rather pungent and painful, it was abandoned, and in lieu thereof thymol iodide was substituted and used in the form of an insufflation into the maxillary sinus after it was cleansed with the boric acid solution, thereby rendering the treatment more tolerable and efficacious. The past year (1906) for experimental purposes, the patient permitted me to apply the treatment occasionally, with a view of seeing whether or not the hay-fever season could be passed without the appearance of any of the symptoms. Once or twice a month during the year this was done, and it is satisfactory to state that last season (1906) the patient remained unaffected with but one exception; namely, one day he was making researches among old, stored-away, dusty legal books and pamphlets, when exposure to the dust brought on an array of nasal symptoms simulating those of hay-fever, whereupon the patient immediately came to my office for relief, and the antral cavity was subjected to the same procedure as before, with the gratifying result of at once eradicating the trouble. Further experimentation will be required to solve the problem of immunity not only as concerns this case, but also others in which similar results were obtained. Just now it is too early to consider the question. It will be noted, however, that I have spoken of the right antrum only: the left side having received no attention. The patient's suspicion that the trauma twenty-five years ago brought on the hay-fever may have some foundation: the injury of the nose and maxillary bone evidently had the effect of impairing the integrity of the sinus and of the ostium as well, and the history of the case and the results of treatment in a way strongly confirm this view. The patient speaks of the treatment as follows: "The result of these treatments has been surprising and most gratifying. I have passed through the hay-fever season without any annoyance whatever. I have lost not a moment's sleep. I have not been incapacitated for business in any way. I have attended the theater, taken long drives in the country, and long walks in the woods and fields, things not to be thought of in seasons past. In fact, I have escaped all annoyance and distress incident to hay-fever, and feel that hereafter I shall be at once relieved and need no longer dread the hay-fever seasons."

We have presented in this instance an example furnishing facts as related to hay-fever, that are worthy of recognition and serious reflection with regard to the etiology of the disease. The history of the case and the results of treatment almost conclusively demonstrate that the antrum was primarily at fault and formed, as it were, the basic lesion.

The Ostium Maxillare.—The pivotal point of the antral theory of hay-fever is the ostium maxillare. The anatomic condition and location of the orifice of the antrum determine the etiological and pathological features of the part played by the maxillary sinus in the production of hay-fever phenomena. Generally speaking, the antrum of Highmore is practically a sterile cavity, particularly, so long as it remains uninvaded by active pathogenic germs, but when irritation or infection is present, it will be seen by investigation that a supplementary or a malformed opening of the antrum exists, and fundamentally contributes to the sources of irritation or infection of the sinus.

Bacteriologists may say the antrum is not sterile, for the reason that various bacteria are always present in the nasal passages with which the sinus communicates. In the main this is true, but are they not inactive germs? When it is taken into account that the ostium maxillare in a strictly normal sense is of definite construction, and by virtue of its location has but one function, namely, that of supplying air to the antrum and guarding its integrity against the entrance of infective or irritating agents, it is altogether natural to consider it sterile, in spite of the presence of nonactive bacteria. As soon, however, as the ostium deviates in size and course from what nature designed it to be, then the antral cavity may at any time become subject to the action of morbific influences. Reasoning from analogy it can be argued that, if the middle ear or cavum tympanum is practically sterile, in the absence of germ activity, despite its communication through the Eustachian tube with the nasopharynx, the maxillary sinus for like reason is entitled to the same consideration. Therefore it would seem that the ostium maxillare bears the same relation to the maxillary sinus as does the Eustachian tube to the cavum tympanum, and consequently to maintain normal integrity of the respective cavities, no alteration of the tubes or ducts should exist.

The normal opening of the antrum is intricately located with reference to anatomical landmarks which are not constant and often make exploratory procedures difficult or impossible. Situated in the middle meatus underneath the middle turbinated body and at the posterior end of the hiatus semilunaris, between the uncinate process and the bulla ethmoidalis, the opening of the antrum is more or less concealed. We can readily understand how undue development of the bulla and of the uncinate process may contract the semilunar hiatus and increase the amount of concealment, thus rendering the ostium absolutely inaccessible. It has been shown by Hajek that the opening of the antrum is not constant as to size in all individuals. The normal ostium is about 2 mm. by 3 mm., and leads to the maxillary sinus in a direction downward, sharply forward and outward. It would seem that the obscure location of the ostium and its tortuous direction, so to speak, indicate nature's design with regard to the function of the opening. In my opinion it has but one function and that is to supply the antrum, a pneumatic cavity, with air. In a perfectly normal state, it is very doubtful whether it was ever intended to serve the purpose of a drainage canal; its very location favors this opinion when viewed from

a physiological standpoint. The opening exists at the extreme upper part of the nasoantral wall in the region of the middle meatus of the nose where the inspired current of air reaches the channel and antral orifice in full volume, and thereby ventilates the antrum. This physiological principle furnishes abundant reason for the location of the ostium, and it is only on abnormal or pathological grounds that the orifice can be safely regarded as a drainage canal. The question is sometimes asked: How is it possible to wash out or irrigate the antrum through the normal opening? It is not possible to do so. It is practicable only when the opening is abnormally large or when there exists a supplementary communication between the nose and the antrum. When the opening of the antrum deviates from its normal dimensions (2 mm. by 3 mm.) and departs from its natural course, it no longer sustains its primary relation, but becomes an avenue of communication, fraught with morbid influences productive of antral disturbances.

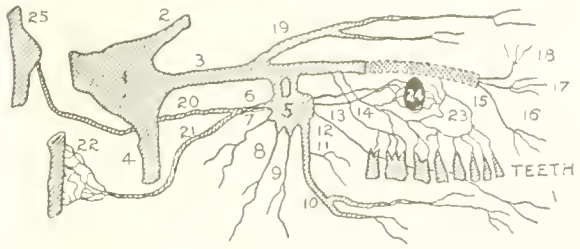
In certain instances on dissection the opening has been found to measure in its anteroposterior diameter as much as 18 mm. (Turner). Where so great a change, or even less, in the diameter of the ostium takes place, it may be concluded that the course of the duct is also changed and proceeds more directly toward the antrum than otherwise. This variation undoubtedly is due to anatomical defects, or, in cases of sclerosis of the nose, to atrophic changes of the tissues.

There frequently exists a supplementary or accessory opening of the antrum, and, according to Zuckerkandl, it may be present in 10 per cent. of cases. Logan Turner found it to be present four times out of nine dissections, while Douglas says it occurs in 50 per cent. of cases and clinical observations confirm the statement of the last-named authority. These statistics are important and shed considerable light on the antral theory of hay-fever and catarrhal maxillary sinusitis.

The location of accessory ostia is usually above the inferior turbinated body at the junction of the middle with the posterior third of the bone on a line without and below the posterior end of the semilunar canal. They occur in the membranous portion of the nasoantral wall and range in size from the head of a pin to 8 mm., and sometimes more than one exists on the same side; but whether these accessory openings are formed during the developmental period of the antrum or whether they are mainly due to disease or trauma, is not fully understood.

Taking into consideration their varying dimensions and the frequency with which they occur in a given series of cases, the supplementary openings of the antrum form a conspicuous part played by the maxillary sinus in the production of the disease under consideration. Further than this, they occupy a favorable position in the middle meatus for the accomplishment of exploratory and therapeutic ends. In the presence of these anatomical nasoantral irregularities, so far as they pertain to the orifice of the antrum, it is not difficult to comprehend the *modus operandi* of the various extraneous exciting agents peculiar to the induction of hay-fever, and for the same reason it is not hard to understand how a catarrhal maxillary sinusitis produces hypersecretion of the cavity and in turn provokes nasal irritation and nervous coryza.

A comparative study shows that as to size the antrum varies in different individuals. It is lined by mucous membrane consisting of ciliated epithelium and a rich distribution of muciperous glands, and it is, in part at least, analogous to that of the nasal fossæ.



1. Gasserian ganglion. 2. Ophthalmic division. 3 Superior maxillary division. 4. Inferior maxillary division. 5. Meckel's ganglion. 6. Vidian nerve. 7. Pharyngeal nerve. 8. Posterior palatine 9 Middle palatine 10. Anterior palatine 11. Inferior nasal. 12. Nasopalatine. 13 Superior nasal. 14. Posterior dental 15. Anterior dental. 16. Labial. 17. Nasal, and 18, Palpebral, on external aspect. 19. Orbital. 20. Large petrosal. 21. Carotid 22. Carotid plexus of sympathetic. 23 Anastomoses of anterior, posterior, and superior nasal branches to supply antrum 24. Ganglion of Bochdalek. 25. Facial nerve with geniculate ganglion

Nerve Connections.—The antral mucosa receives numerous sensitive nervous filaments given off by the superior maxillary division of the trigeminus, and it is also abundantly supplied by secretory nervous fibers. The anterior dental, the posterior dental, and the superior nasal from Meckel's ganglion, form the nervous supply of the antrum (Gray). Sympathetic fibers come from the Vidian, composed of the great petrosal and carotid. The carotid forms a connection between the carotid plexus of the sympathetic and Meckel's ganglion. Nervous filaments are given off from the lower border of the posterior dental which forms a minute plexus on the outer wall of the superior maxillary bone immediately above the alveoli. From this plexus, filaments are distributed to pulps of molar and second bicuspid teeth, *the lining membrane of the antrum* and a corresponding portion of the gums. The anterior dental is given off just before its exit from the infraorbital foramen; it enters a special canal in the anterior wall of the antrum and anastosmoses with the posterior dental and superior nasal branches. From this nerve some filaments are distributed to the incisor, canine, and first bicuspid; others are lost upon the lining membrane covering the fore part of the inferior meatus. In this situation it forms a connection with a nasal branch from Meckel's ganglion called the ganglion of Bochdalek. From Meckel's ganglion are branches (descending or palatine) supplying the lining membrane of the nose. It has three sets of fibers: motor, sensory, and sympathetic. Internal branches are distributed to the septum, and outer wall of the nasal fossa; one branch (posterior) is distributed to the outer wall of the antrum and forms a communication with the anterior dental in the ganglion of Bochdalek.

From this we see the antrum to be abundantly supplied with nerves. The posterior dental, anterior dental, and the branches from Meckel's ganglion give motor, sensory, and sympathetic fibers not less to the antrum than to the meati of the nose. Irritation of these fibers in the antrum is not only capable of producing the sensory and sympathetic disturbances seen in hay-fever, but neglect to relieve the antrum from sources of irritation and disease explains the discouraging failure to cure the condition by operative and other therapy upon the nasal cavities. Moreover, the continued irritation of these sensory and sympathetic fibers is capable of establishing in those of unstable nervous organization that distressing chain of neurasthenic symptoms which are the secondary and coincident con-

ditions in most cases, for under emotional and morbific influences a reciprocal relationship between the sympathetic and central nervous system exists. In hay-fever the sensitive nerve endings present in the antral and rhinal cavities are kept in a state of excitation as a result of local irritation.

Pathological Connections.—The maxillary sinus, apart from its orifice, is a closed cavity where warmth and moisture have ample chance to engender fermentation and generate bacterial products. Its mucous membrane is continuous with that of the nasal passages through the ostium maxillary. This arrangement, under abnormal anatomical conditions, with regard to the nasoantral orifice, forms the pathological connection between the antrum and the nose, and shows how readily an inflammation of the antrum can reflect itself to the nose by extension or by irritation consequent to its discharging contents. In hay-fever, the secretions arising from inflammation of the antrum are the source of the vasomotor nasal disturbances and the associated reflex symptoms, which are relatively augmented or diminished in proportion to the quantity and irritative properties of those discharges.

The query arises, how does the antrum get rid of its fluid contents when hypersecretion in the cavity obtains? In the first place, gravity performs an important part in the function. Various positions or movements of the head favor the exit of the secretions. In the second place, it is demonstrable that the act of respiration or of blowing the nose drains the cavity by a process of suction. The peculiarly favorable position of the accessory or malformed ostium, as it is related to the middle meatus and the middle and upper turbinated bodies, makes drainage possible in the manner described. I have frequently observed that after washing out the sinus for therapeutic purposes, the fluid was thoroughly evacuated by the time the patient had finished blowing the nose, as was illustrated by the use of the air bag, and insufflation of medicinal powders.

With regard to the so-called extraneous exciting causes of hay-fever, such as pollen from weeds, grasses, and flowers, odoriferous emanations, dust, certain drugs, etc., etc., how are they related to the antral theory of the disease? Is it not possible, and is it not a fact, that these external excitants, after reaching the nasal passages, enter the antral cavity and through their action induce hyperemia and catarrhal inflammation productive of hypersecretion and, in cases of chronic preexisting antral disease, intensify the activity of the lesion?

I am of the opinion that when the communication between the nose and antrum is absolutely anatomically normal as to size and situation, disturbances of the character mentioned are not likely to take place in the absence of alveolar or dental irritation, but in instances in which the ostium is abnormally large, or in which there is an accessory opening, an avenue is created for the favorable entrance into the cavity of extraneous irritative or infective substances by air in motion or the act of respiration. Thus we can readily see how these foreign substances can enter and lodge in the antrum, induce irritation and infection, and give rise to inflammation which usually is secretory in character. Fundamentally speaking, the whole theory rests on anatomical abnormalities.

In 1904 Emanuel Fink, Hamburg, Germany, in a contribution, drew attention to the antrum of Highmore as furnishing the probable source of the disease, and successfully treated it in accordance with these views. In support of the antral theory, Fink quotes Helmholtz, who himself was a sufferer from the disorder, and ascribed the affection to the influences of certain vibrios contained in the secretion of the nose, thrown off by violent attacks of sneezing, while, on the other hand, Helmholtz contended that a secretion which passed from the nasal passages, drop by drop, did not present the vibrios; they were lodged in the variously hidden recesses of the sinuses of the nose. It is maintained that even if the vibrios could not be regarded as a specific form of disease, Helmholtz's observations would prove that the secretion must come from the sinuses, especially from the antrum of Highmore. Sneezing, a constant accompaniment of hay-fever, is, according to Sandmann, the result of irritation of the ethmoidalis nerve. This irritation may be caused either directly through the agents contained in the inspired air, or indirectly through the secretion flowing from the antrum. Concerning asthma, it has been shown by reliable authority (Francois, France, and Lazarus), that through excitement of the nasal mucous membrane, spasm of the bronchial muscles can be produced reflexly. Recent physiological researches show that the mucous membrane of the antrum of Highmore when disturbed stands in the same relation to bronchial spasm as does that of the nasal passages.

It is no longer questioned that a number of respiratory, as well as associated diseases, are both directly and indirectly due to sinus affections; for instance, the source of nasal polypi, headache, ophthalmic disorders, chronic rhinitis (atrophic in particular), mental derangements, trifacial neuralgia, odontalgia, bronchial asthma, etc., etc., is often capable of such demonstration by operative and other measures.

Neurasthenic Aspects.—Earlier as well as more modern writers maintain that hay-fever is a neurosis and in display of symptoms perhaps it may be true, as the nervous characteristics of the disease largely form the symptomatology, and, in fact, it is this feature of the affection that gives rise to the troublesome complications with which the physician is called upon to contend. Do the nervous manifestations constitute the disease, *per se*, without the existence of a primary lesion? It is hardly logical to assume such a position, when it is known that pathological states involving other organs of the body are often responsible for the presence of neurasthenic symptoms.

When the late Dr. George M. Beard introduced into our medical nomenclature the term neurasthenia, he did not intend that the use of the name should be applied to diseased processes inducing a group of peculiar nervous symptoms hitherto misunderstood, for the purpose of disguising erroneous diagnoses or concealing sins of omission and commission. He maintained that these neurotic symptoms sprang from definite, tangible causes, and that by grouping them together under one general designation he thereby would give them a special significance; for instance, when they accompanied a gastric disease, it was termed "gastric neurasthenia," and when associated with a disturbance or abuse of the sexual organs, "sexual neurasthenia," and so on. Therefore, with the same propriety, the neurotic phenomena attending nasal nervous catarrh, due to sinus origin, may be called *sinus* neurasthenia. There has always been a tendency to emphasize the importance of the nervous symptoms of hay-fever; this is exemplified by the many different forms of treatment adopted with a view to meet

symptom emergencies only, while its organic phase is lost sight of or not inquired into.

There are those also who contend that the nervous features are partly imaginary. Few ailments of the body can justly be ascribed to the power of the imagination alone. Under extraordinary circumstances, perhaps, such a belief is tenable, especially when hysteria is present, but it is not infrequent, however, that on closer scrutiny of existing conditions as to origin, a hidden morbid state, regardless of its location, is often found in given cases to be at the bottom of the hysteria.

In hay-fever subjects where a nervous state of the individual predominates, causal factors ought always to be considered, because if the neurasthenia is a secondary factor, and simply constitutes a reflection of disturbed nervous harmony or equilibrium, induced by distinct lesions acting directly or indirectly on an unstable central nervous system, the solution of the problem becomes easier. It is also true that certain basic conditions of disease are capable of creating in patients of nervous instability, a special susceptibility to exciting causes. These persons are those of idiosyncratic temperament, so-called. I believe this to be the case in hay-fever, the phenomena of which are ascribed by some authors to a special idiosyncrasy. In other words, the idiosyncrasy is the result of morbid central evolutionary processes, in which the sympathetic and vasomotor nervous systems play a conspicuous part in establishing the hay-fever predisposition. External excitants are only contributory factors and hold a subordinate position in etiology, and excite into action a lesion over which they exercise an influence. Internal disease must be present in order to enable impressions to exert their effects on the central nervous system.

Hay-fever belongs to this category of neuroses. It is a general observation that diseases, hampered by obscurity respecting their fundamental sources, always make rational therapeutics difficult; for this reason the physician is not infrequently called upon to make an uncertain diagnosis and employ a symptomatic therapy in order to satisfy the patient, and in so doing he himself unfortunately becomes satisfied and makes no further research. From the patient's point of view and demands, not a few symptoms of the disease require special attention, thus increasing the number of remedies for purposes of alleviation. A multiplicity of remedies will, however, become necessary, when we once fully understand the source of the disease and adapt our remedial measures accordingly and pay less attention to individual symptoms.

With reference to the so-called sensitive areas of the nose, acting as etiological factors of hay-fever, anatomically considered, they consist of a localized distribution of sensitive nervous filaments in certain parts of the nasal mucous membrane. Under local stimulation or irritation they are readily excited; they serve both physiological and pathological purposes and their degree of sensitiveness normally varies in different individuals. Physiologically they serve as safeguards to the upper air tract, but on the other hand, by oft-repeated and prolonged local irritation, the sensitiveness increases with a resulting hyperesthesia, which in turn becomes a pathological condition. Hyperesthesia of the nasal passages thus appearing is prone to lead to functional derangement of the sympathetic nervous system, and induce reflex symptoms and vasomotor disorders, such as coughing, sneezing, nasal fullness and discharges, tinnitis aurium, etc., etc. Though characterized by a neurotic physiognomy, it is nevertheless contended that the disease may be primarily organic, and that a pathological state of the antrum of Highmore, so far as my present observations and experiments extend, is the seat of the chief etiological lesion. Personal experiences demonstrate the theory in a practical way and set aside the illogical conclusion that the neurasthenia constitutes the malady. Errors are sometimes committed, by hastily formed conclusions with regard to the immediate cause of a sudden onset of the disease, as is instanced by the celebrated case of "rose-cold," or hyperesthetic rhinitis, which was presumably produced by the presence of an artificial rose, reported some years since, and which account is still fresh in the minds of many rhinologists. This singular circumstance will continue to be referred to whenever discussions arise with reference to the causation of hay-fever. Is it not possible that the artificial rose served only a coincident circumstance peculiar to the situation during the patient's visit? The history of the case is not sufficient to strengthen the argument in favor of "suggestion" as related to hay-fever, because a series of cases similarly affected would be required to give scientific value to the observation.

The will has a definite power over the operations of the body, both in health and disease, but psychic influence, however, must not be overestimated in its control over the physical organization. It no doubt serves a valuable purpose under extreme circumstances, as when faith in what is being done for the relief of suffering is exercised, because then an element of expectancy is introduced into the treatment, and the mind is thereby put at rest, and nutrition of the nervous system is reestablished and physical forces reassert themselves. This we see illustrated sometimes in physical ailments as well as in mental conditions of grief, fear, or undue anxiety. As applied to the induction of organic disease, psychic doctrines should not be too enthusiastically considered in these days of scientific medicine, as their supposed miraculous power in great measure is a relic of past ages. In the days when medical empiricism prevailed and the physician had no pathology and only a meager etiology to govern him in the selection of his remedies, there was some color of reason for such doctrines.

In the consideration of the alleged mental aspect of the disease the foregoing statements have been made, because hay-fever is not a disease of the mind; it is a disease under the domain of cause and effect, and in all probability, due to an organic lesion in which the antrum of Highmore is an important contributory factor.

Description of Cases.—As the limits of this paper will not permit a detailed account of each and every case under observation and treatment during the past three years, I will confine myself to descriptions of salient points developed in the experience in order to illustrate as specifically as possible the intimate connection between the antrum and hay-fever. In the period mentioned, there were under my observation ninety-one cases of hay-fever and rose-cold in varying degrees; two were treated in 1904, fifteen in 1905, and seventy-four in 1906, with uniformly good results. To justify myself against possible criticism, I said to each new patient, that while I firmly believed the treatment logical, yet the method was an experiment, and, apart from safety, no promises would be made as to the outcome. The results realized during the first two years were sufficiently satisfactory to encourage further inves-

tigations in a more extended manner, wherefore in the past year an especial effort on the part of some of my professional friends and myself was made to bring under observation as many instances of the disease as was expedient, whereby the gist of the theory could be verified.

Accessory Ostia and Typical Symptoms.—Mrs. B., aged thirty-three years, wife of a physician and mother of eight children, consulted me about eighteen months ago, with reference to hay-fever. She was of lithemic diathesis and suffered at times from intercostal and facial neuralgia. She contracted the disease in August, 1895, and has been a yearly sufferer since then with progressively greater severity; a dry, dusty day, a shopping tour, or smoke, sufficing to bring on an attack; the most troublesome symptoms being sneezing, hydrorrhea, pain in the nose, and asthma. At the height of the attack there were usually present excessive lacrymation, burning, and itching sensations of the eyes. Prior to her consultation with me, she had tried various remedies, such as Dunbar serum, adrenalin, cocaine, antilithemics, and many others; and besides these, intranasal surgery was employed for the reduction of hypertrophic and other irregularities of the nose, with the hope of overcoming the affection, all, however, without obtaining relief. Examination of the nose revealed an intensely red, swollen mucous membrane of both sides, which was very sensitive, as evidenced by violent reflex disturbances when the sound was used. The middle meatus on the left side around the orifice of the antrum was engorged and hypersensitive, whereas the right side in this respect was not involved in the same degree. After reducing the sensitive and swollen membrane by applications of cocain and adrenalin, thereby improving the local field of vision, I found by sounding that the opening of the antrum was supplementary and very large, and therefore concluded that this case came within the purview of the antral theory, and about the latter part of that season, treated her accordingly. After the first treatment, the eye, throat, chest, and severity of the nasal symptoms practically disappeared within twenty-four hours, and it is interesting to note that the patient's first night was passed comfortably, and upon a second application, within a very short time all the signs of the disease were dissipated. Prior to the treatment, she was unable to attend theaters, go shopping, or come in contact with hot winds or dust, or drive where exposed to weeds, without suffering discomfort or being compelled to remain in her room with closed doors and windows, and in order to test the theory, the patient attended the theaters, went shopping, and withstood the action of the elements and contamination of weeds, with the result that she slept well, felt no discomfort therefrom, and her asthma entirely left her. The malformed ostia favored instrumentation, as it was quite possible to introduce the cannula of the syringe or powder blower into the antrum. Applications of a warm solution of boric acid in the form of injections, removed from both sinuses an unusual amount of retained secretions, suggesting inflammation and hypersecretion. Mrs. B. continued well until housecleaning time arrived, when she was exposed to dust and odors from new grass-matting on the floors, an environment which in the past was always accompanied by an array of hay-fever symptoms regardless of the time of year, thus showing that some certain organ associated with the nasal air tract was implicated in the morbid process and formed the basis of disturbance on these occasions, owing to irritants acting from without. Between the season of 1905 and 1906, at the suggestion of her husband, a physician, Mrs. B. visited me at stated intervals for purposes of treatment to see whether the opinion that the maxillary sinuses were organically involved in the production of these symptoms, could be verified. The antra were regularly cleansed at intervals and afterwards medicated with an application of thymol iodide or a 25 per cent. solution of silver salt. Thereafter she frequently tested herself and found that she could expose herself to irritants, dust, and odors, with impunity. The past hay-fever season went by without much trouble, only one attack lasting about four days manifesting itself, and further treatment at this time being impossible owing to the delicate condition of the patient. She has since declared herself well and is perfectly able to go about and attend to her usual duties.

Asthma.—September, 1905, Mr. W., aged forty years, a furrier, constantly exposed to dust and odor peculiar to his occupation, was referred to me on account of asthma contracted two and one-half years previously, and which from its inception has increased in intensity both day and night. Upon careful examination, and beyond a periodic discharge from the nose, I was unable to find the presence of the usual lesions of the nose which would account for the paroxysms. There were no intranasal deformities or pressure contact and the only suggestion that the nose might have been responsible for the attacks was an intumescent thickening of the mucous membrane of the septum directly opposite the middle turbinate bodies, which fact was taken into consideration as a causative factor. I was of the opinion that the case was one of bronchial asthma, produced by the inhalation of fur dust, and with this view he was advised to keep away from his occupation, be exposed to the open air as much as possible, exercise judiciously, and take the medicine prescribed. Iodide of potassium alone, as well as in mixtures containing other antiasthmatic agents was faithfully tried without avail, and in fact almost the whole category of remedies recommended for the cure of asthma was resorted to in the course of time, with negative results. Concluding that constitutional treatment was a failure, the patient was given local treatment accompanied by intrabronchial injections of warm mentholated oil, and while this procedure yielded partial relief it did not cure him. The hypertrophied tissue on the septum opposite the middle turbinates was then cauterized, but without results, and as I was at this time directing my attention to the maxillary antra of patients afflicted with hay-fever, it occurred to me that perhaps his sinuses were affected by the entrance of dust or other infection arising from the character of his business and that similar treatment might dissipate the asthma. I treated him accordingly, and it was highly gratifying, and I found that the same substance came from the cavities as did from the hay-fever subjects, that is, a flaky-white or milk-curdle deposit. Upon receiving a visit from the man the following day he greeted me with, "You struck it this time; I had no asthma last night." At stated intervals he was treated six or eight times. At present writing the patient is free from asthma, and, after obtaining relief, he resumed his business and has been thus engaged ever since. I feel confident he will remain permanently free until such time, at least, as when the conditions of his environment may again disturb the sensitive nerve supply and mucous lining of the maxillary cavities.

Neurasthenia and Nervous Nasal Catarrh.—On June 18, 1906, Mrs. A., aged forty years, the mother of four children, came to me and stated that for a number of years she had been afflicted with the hysterical type of neurasthenia manifesting itself in various ways. After a long continued course of treatment by a gynecologist who entertained the opinion that the nervous symptoms were due to a diseased state of the pelvic organs, a nervous disturbance of the nose developed. Later on hyperesthesia of the skin of the right side of the face, extending down and over the shoulder and arm of the same side, appeared. The throat and tongue became involved, and she at first imagined that an apple seed had buried itself in the tissues of the right side of the throat and formed a focus of disturbance. The symptoms were accompanied by burning and itching of the mucous membrane, eyes, mouth, tongue, and throat, which still existed when she consulted me. There were present frontal and occipital headache, frequent paroxysms of sneezing, and excessive discharges of the nose, restless nights, and loss of appetite. Evidences of impaired nutrition and a feeling of melancholia which so often accompanies these conditions, existed in a marked degree. Coupling the signs of nervous nasal catarrh with these general nervous manifestations, it occurred to me that the chief causal factor of the complaint was of sinus origin. On examination of the nose, I found turbinal hypertrophy, hyperesthesia, and soggy appearance of the mucous membrane. The report of this case is not presented as one of genuine hay-fever. It is offered as an admirable illustration of a type of neurotic affections of the nose known as nervous coryza, characterized by a significant display of neurasthenic phenomena, strongly resembling the symptoms of hay-fever and coming from the same organic lesion located in the antrum of Highmore. Sounding the maxillary sinuses with a probe developed painful sensations in the middle meati. In fact, the whole interior of the passages of the nose was hyperesthetic and made the use of the instrument almost unbearable. In order to reduce the swollen mucous membrane and render instrumentation of the sinuses possible, adrenalin and cocaine were applied. The cavities were cleansed with a syringe and warm boric acid solution. From the left cavity came a fluid (four drachms in quantity) resembling buttermilk, while the right discharged a seromucous secretion. An interesting circumstance in connection with the case is that about nineteen years ago, Mrs. A. was struck on the right side of the nose and in consequence suffered total loss of the sense of smell as well as periodic attacks of intense facial neuralgia and pain in her upper teeth. Percussion over the cheek in the region of the antra elicited pain in the deeper structures. The patient was regularly treated for about two weeks and it is interesting to note that the sense of smell has returned in an exaggerated form; the nasal, head, and throat symptoms as well as the hyperesthesia of the skin, are dissipated and the improvement in every way is marked. She is now able to sleep all night; her appetite has returned; her mentality is changed, and the neurasthenic phases of the case have disappeared. No medicines except those used in the local treatment, were prescribed.

Test Case.—One man in particular, Mr. D., capitalist, consulted me seven days before the date of his periodic attacks of hay-fever, which always had been on August 7, to find out whether or not something could be done to prevent his having the disease. He informed me that he suffered severely for many years and that it rendered him perfectly miserable and melancholy for at least two months during each season. In fact, his mental condition was of such a character as to cause him to stay in the attic of his residence day and night in order to get away from fancied atmospheric influences of hay-fever. As he was urgently advised to see me by Mr. D., whose case is quoted at the beginning of this article, he came not wholly without confidence. Examination showed large accessory ostia on both sides and the maxillary sinuses catarrhally affected. The malplaced ostium and the readiness with which it could be entered, made me feel that the case was highly amenable to treatment and I so expressed myself to him. Treatment was begun on the same day of the examination and continued daily for some time thereafter for the reason that he looked upon it as a luxury. Results: The seventh day of August arrived, and no sign of hay-fever; the eighth, the ninth, and the tenth were likewise negative. About the eleventh, out of curiosity, he tested himself by making a tour of one hundred miles with an automobile through the country where all the elements peculiar to the exciting causes of the disease existed. The next day he reported his experience and aside from itching at the end of the nose, he made no complaint. Upon washing out the antra, however, I was amazed at the quantity of milk-curdle secretions that appeared in the catch basin. This evidenced valuable information with regard to the fact that the antra were undergoing an inflammatory disturbance and in a brief length of time would have ushered in an array of hay-fever symptoms through nerve irritation; insufflation of thymol iodide, however, arrested the process and no trouble came from the exposure. For a further test this same experiment was resorted to a number of times during the season, but nothing came from it to interrupt the comfort of the patient, except an occasional itching of the end of the nose.

Antral vs. Dunbar Treatment.—Mr. S., aged forty-five years, teacher, a victim of hay-fever for seven years; symptoms, sneezing, nasal discharges, coughing, and severe paroxysms of asthma. He first visited me August 10, 1905, at which time the Dunbar serum was prescribed in powder form and was continued until September 6, without effecting any benefit, and during this visit the antral method was recommended and applied, with the result that the asthma disappeared within the first twenty-four hours and after several subsequent treatments, and within a week he was able to follow his profession without any inconvenience and considered himself practically cured. At the beginning of the hay-fever season and about the first of August, 1906, while upon a business trip through Ohio, he was taken seriously ill with the disease, and, upon his arrival at his destination, he was again given the Dunbar serum treatment which was continued for about ten days and until his arrival in St. Paul, when he presented himself at my office. I found him suffering from his former usual symptoms, and asthma in particular. On request of the patient, I again applied the antral treatment, with the result that within one week he enjoyed perfect relief.

Large Supplementary Ostia, Deep Antral Cavities, and Decided Neurasthenia.—Dr. W., aged thirty-two years, neurotic temperament, good family history, came to me September last, complaining of neurasthenia, restless nights, stenosis of the nose,

paroxysms of sneezing, pain and congestion of the eyes, asthma, and profuse discharges from the anterior and posterior nares; these symptoms, without doubt, denoted an attack of hay-fever. Ten years before, he experienced his first attack, and suffered thereafter more or less severely. During this time surgical procedures brought about beneficial results, but as time elapsed their good effects gradually disappeared, as dampness, drafts, dust, overheated rooms, exposure of extremities while asleep, and decided weather changes always induced recurrence of the symptoms, regardless of the time of year; the symptoms intensifying themselves only during the hay-fever period, whereby the suffering was augmented. Four years ago the patient came to me afflicted with one of these violent seizures and I prescribed the usual palliative remedies then in vogue, but accomplished nothing beyond temporary relief. On seeing him the past season he was suffering unbearable tortures and the status of the case at this time was as is outlined above. He went East for the purpose of consulting with medical authorities regarding his case, and after being informed that his symptoms were largely imaginary, he returned to the West dissatisfied and discouraged with his Eastern experiences, and visited my office ostensibly for antral investigation and treatment. On examination I found the nasal passages unusually irritable and engorged, the mucous membrane being soggy and edematous. After intranasal sensitiveness and engorgement had been reduced by application of cocaine and adrenalin, it became possible to explore the location and character of the maxillary openings. They were found to be supplementary, very large and readily sounded, and occupied a position in the membraneous part of the nasoantral wall rather near the upper border of the inferior turbinated body. It was ascertained that both maxillary sinuses were of unusual size and had a capacity of six or eight drachms. The antrum on both sides was first washed out with a normal salt solution, and as the retained secretions proceeding from the cavity, mixed with the injected solution, appeared in the catch basin, they presented a reddish, muddy, and coffee-grounds aspect. Because of the unusual size of the antra, a certain percentage of the injected fluid was retained, which made it necessary to use the syringe in order to withdraw the remaining contents which resembled what was caught in the basin. This irrigating process was continued until the sinuses were thoroughly cleansed. Injections of a 25 per cent. solution of a silver salt were then made and the patient was requested to lie down and keep quiet for an interval of an hour so as to give the antiseptic a chance to remain in contact with the antral mucous membrane in order to accomplish its ulterior purpose. In this manner Dr. W. was treated for a period of a week at intervals of a day, each subsequent visitation evidencing improvement. Among the first symptoms to subside was the excessive nasopharyngeal discharge which always gave much annoyance and interrupted the comfort of the patient at night when in the recumbent position. Next to disappear was the asthma, and at the end of the week the symptoms were entirely absent and the patient considered himself cured. In order to prove the permanency of the results he afterwards took frequent drives in the country and exposed himself to the exciting causes of the malady without recurrence of any of the symptoms. Chiefly to be considered in this instance, in their bearing on the periodic nervous manifestations, are the various contributory external causes, the accessory openings and capaciousness of the maxillary sinuses, the high degree of antral inflammation, and the character of the hypersecretion of the cavities.

Preexisting Chronic Catarrhal Maxillary Sinusitis and Hyperesthetic Rhinitis.—On October 29, 1905, a man, aged forty-six, contractor, consulted me relative to excessive catarrhal discharges from the nose, persistent coughing and retching spells, regularly present in the mornings and usually after breakfast, dyspeptic symptoms with loss of appetite, and consequent decrease of body weight. This state of physical impairment existed for a number of years without apparent cessation. Twelve years prior he was attacked by vertiginous seizures, the dizziness lasting for long periods at a time. The vertigo was thought by his physician to have been of stomachic origin. On examination of the nose and postnasal cavities I found the former more or less occluded by turbinal hypertrophies and the latter occupied by disagreeable, tenacious secretions; a musty odor emanating from the air passages led me to believe that the so-called foul breath was due to the furred tongue and general gastric derangement. With the idea in mind that perhaps the obstructed nose had a great deal to do with the symptoms for which he chiefly sought relief, I reduced the intranasal hyperplasia, which made nasal respiration comfortable. The postnasal space was treated by local applications of iodine and nitrate of silver pigments, used interchangeably. This therapy in a manner afforded some benefit, but not enough to satisfy either myself or the patient. The morning retching continued and the offensive odor remained undiminished. During August last, after a long interval between visits, he again saw me with the statement that he had a severe "cold in the head," as was manifested by nasal stenosis, sneezing attacks, watery discharges from the nose, itching and burning sensations of the eyes and throat, and on inspection of the nose and taking into account the symptoms presenting, I diagnosed it a clear case of hay-fever. Inquiry developed that he had had similar attacks in previous years, but he supposed they were due to catching cold. At the time he came under my observation on this occasion, I was experimenting on the antrum of Highmore in other cases of hay-fever with regard to the relationship existing between the disease and the maxillary sinuses, ostensibly with the object in view to *prove* or *disprove* the correctness of the theory. The conclusion irresistibly impressed me that this case offered an excellent example for the purpose. Sounding the antral cavities demonstrated the practicability of entering them through the nasoantral opening with suitable instruments. It was discovered by the method employed that an opening or communication of the antrum in both nasal chambers was present in the middle meatus at a point posterior and inferior to the meatal termination of the hiatus semilunaris; these openings proved to be accessory ostia. This anatomical malformation both as to position and size of the opening, a condition frequently present in hay-fever subjects according to my investigations, gave rise to the suspicion that the maxillary sinuses were diseased and formed the basic lesion of the patient's trouble. Both cavities were washed out with a normal salt solution, the irrigation being continued until the return fluid as it appeared in the catch vessel was entirely clear and free from sediment or retained secretions. The discharge thus forced from the antra was not exactly characteristic of what is usually

noted in hay-fever conditions; it was offensive in odor and peculiarly muddy and granular in appearance, intermixed with mucoid material. A bacteriological examination of a specimen revealed a green bacillus, *B. pyocyaneus*. Six or seven consecutive treatments directed to both antra at intervals of twenty-four hours had the desired effect in curing the patient of his hay-fever. He grew fond of the treatments because of the good systemic effect produced, and after the hay-fever had disappeared, he wanted the treatment often and regularly. It was not long until he remarked that the coughing, vomiting, and retching had wholly disappeared as well as the postnasal discharges; his appetite and digestion at once improved, his weight increased, and the offensive odor was also brought under control and eradicated.

A point of particular interest so far as subjective signs are concerned in antral disturbances of this sort, is that those patients usually know when a storm is brewing in the antral cavities, as is recognized by a disagreeable, burning sensation in the region of the middle meatus of the nose and in the neighborhood of the ostium. The patient is always cognizant of what is going on at these periods and comes for a cleansing of the sinuses just as soon as the nasal sensations indicate the necessity, and one treatment usually suffices for a number of weeks. Catching cold or exposure to dust are the chief exciting causes in his case. The deductions are: First, that the opinion is substantiated that one or more of the associated sinuses of the nose when in a diseased catarrhal state, is as a rule one of the chief causes of so-called postnasal catarrh and its attending symptoms; second, that the history of the case furnishes a convincing argument in favor of the antral theory of hay-fever; and, third, that an abnormally large or an accessory maxillary ostium is a local anatomical predisposing factor in the etiology of catarrh and hypersecretion of the sinus.

General Remarks and Deductions.—The observation is borne out by this experience that in those cases in which unusually developed abnormal openings of the antra prevailed, the results of treatment were more prompt and satisfactory than in those where the abnormal dimensions of the communications were much less; the former favoring and facilitating instrumentation and the application of remedies, and the latter increasing the difficulties. The observance of this point offers a rational explanation on atomic grounds for therapeutic failures. Dissections have shown that the antrum of Highmore is a variable cavity as to its dimensions in different individuals, and also that an anomaly may sometimes exist, particularly as regards subdivision of the sinus into compartments by bony walls or partitions.

It was also observed that "rose-cold" or "hay-fever" of one or two seasons' existence in certain individuals, yielded on an average to treatment more readily than it did in those who had had the disease for many seasons or where it extended over a long period of time. It may be concluded from this that as yet the antral mucous membrane had not undergone permanent inflammatory degeneration or changes in those patients who thus were readily cured. If this observation can be further verified in the future, it certainly adds a valuable factor to prognosis.

Of the whole number of cases heretofore referred to, one was a total failure. Though treatment directed to the antrum was faithfully followed for a reasonable period, yet no impression could be made and the symptoms refused to yield. The ostia were abnormal in size and no difficulty encountered in the use of the probe or cannula, but whenever a fluid was injected or a powder blown into the antrum it was found to rebound instantly into the nasal passage. Experimenting in different ways with a view of forming some explanation for the presence of an impediment, it was finally thought that the sinus was anomalous, there evidently being present a number of cavernous compartments. In given cases, therefore, of catarrhal maxillary sinusitis or hay-fever in which local malformations obtain with regard to the location and size of the opening of the antrum, anomaly of the sinus must also be taken into account when dealing with a certain class where insurmountable barriers to treatment arise.

Also of this number three did not respond for lack of adequate treatment. Among the number there were twelve who were entirely relieved within a period of about two and one-half weeks and who had suffered in former years six to eight weeks each season, and the remainder were fully and completely relieved of the disease and its symptoms in a week or ten days, and, in exceptional instances, some in four days, treatment of the last two classes having been administered daily.

My observation has been that the reflex symptoms first to disappear were burning and other disturbances of the eyes, pruritus of the throat and ears, finally sneezing and discharges from the nose, and last *asthma* and cough.

That chronic catarrhal maxillary sinusitis is a morbid process productive of intranasal and postnasal catarrhal disturbances is not to be questioned, when it is understood that, by directing treatment to the antrum, many of these cases are relieved and get well. The history of the last case quoted in this paper is an illustration and corroborates the opinion, and, other instances coming under the same class can be referred to in detail as proving the fact.

For bacteriological investigations specimens of retained secretions were taken *directly* from the maxillary sinuses of a certain type of cases and it was found that the green bacillus, *B. pyocyaneus*, was present in 65 per cent. of the number. While this indicates nothing conclusive with regard to the rôle played by the pyocyaneus bacillus, yet it suggests further inquiry in this connection.

Will antral therapy prove productive of immunity? In a certain class perhaps immunity can be attained, provided a systematic therapy be applied to the antrum during the intervals between seasons; especially so in cases where degeneration of the mucosa is not advanced or intractable and where anatomical deviations are pronounced and advantageous with reference to the opening of the antrum.

Then again, in instances in which the antral cavity cannot be reached via a nasoantral communication, one would be justified in making an artificial opening with trocar and cannula into the sinus underneath the lower turbinated body for therapeutic purposes. Recently I adopted this method for the treatment of catarrhal maxillary sinusitis in three cases with excellent results following.

Considerable strength is added to the argument by results attained from treatment that in instances of asthma of antral origin, the irritation productive of the bronchial spasm, primarily takes place in the antrum. As has already been referred to in the description of the nervous circle involved in the creation of central nervous instability, reflex and

vasomotor disturbances of the upper air tract, the mucous lining of the maxillary sinus is abundantly supplied by sensitive nerve endings and secretory nervous fibers to render it possible for such a phenomenon to occur and give rise to the asthmatic storm destined to follow.

It is not intended that the above statement should convey the idea that all cases of bronchial asthma organically arise from the antrum, but the opinion is clinically demonstrated that not a few come from this source and that when all other means are exhausted as to cause and treatment the antrum of Highmore should always be interrogated before one's efforts should cease in ascertaining the foundation of the disorder. Within the past month only, and while this contribution was in course of preparation, a man whom I had previously seen in attacks of hay fever asthma, consulted me in reference to an obstinate and disabling attack of asthma from which he was then suffering. I found the nasoantral membranous wall of the left side of the nose badly disintegrated and for the greater part absent, thus forming an opening of unusual size communicating with the sinus. No difficulty was experienced in inserting into the cavity an instrument one-eighth of an inch in diameter. The sinus was washed out and the contents removed, followed by injections of a 25 per cent. solution of silver. Subsequent daily applications of a similar character were made and in a week's time he was well. The antiseptic had the happy effect of reducing the inflammation and checking hypersecretion of the sinus.

In instances in which hypertrophic or polypoid changes of the mucous membrane exist and induce stenosis or intranasal contact, the condition should be remedied as early as possible in order to modify or lessen irritation and vasomotor disturbance of the nasal mucosa, consequent to the action and effects of discharges proceeding from the antrum, due to inflammation and hypersecretion of the cavity.

The same rule applies to deformities of the septum narium. I frequently found that those cases in which intranasal pathological irregularities had previously been properly dealt with, the nasal and reflex symptoms of hay fever yielded more readily and permanently than otherwise to treatment directed exclusively to the antrum of Highmore. From the earliest days of rhinology to the present time the fact has been generally recognized that intranasal contact or obstruction is not infrequently productive of serious interference in some form or another with the function of respiration, and that surgical intervention alone was sufficient to alleviate the difficulty.

It stands to reason, therefore, that to enhance the efficacy of any line of treatment of the disease under consideration all important intranasal abnormalities should be removed.

In conclusion I beg to say that in the presentation of this report I do not wish to overestimate my observations or to appear too enthusiastic; I desire simply to state what my experience has been and to declare that, clinically, the antral theory of hay fever and its allied disorder, asthma, has a basis for existence and recognition.

Deformity in Pott's Disease.—Eikenbary says of this that: Cases seen before the stage of deformity should never be allowed to develop deformity. Deformities in the acute or subacute stage can be reduced one-half or entirely. Children under three years are best treated on the bent gas pipe frame; those over three years by a solid plaster-of-Paris jacket.—*Chicago Medical Recorder.*

A CLINICAL VIEW OF ULCER OF THE STOMACH.*

By FENTON B. TURCK, M.D.,

CHICAGO.

Out of all the tragedy in the life of the busy practitioner, there can hardly be drawn a more pathetic and discouraging picture than that of his relationship to the patient suffering from ulcer of the stomach. The uncertainty of diagnosis, the failure of all his plans for the alleviation of his patient's condition reflect in his countenance and conduct; that pinched, haggard face haunts his path of duty by day and dominates his dreams by night; the patient himself, alternately urgent for relief and overcome with despair, finally turns from the adviser and confidant of many years, seeking other counsel; while the sufferer's family, full of anxiety long sustained, demand help for the afflicted one, and alas! how often there has been no help.

But it seems to me the veil that has hitherto clouded this most distressing and perplexing malady is slowly but surely vanishing, and that at last we have a fair working basis upon which to build a solid and safe structure of etiology, diagnosis, and successful treatment. It is not my purpose in this brief address to survey the scientific field of gastric ulcer, but to bring, if I may, a message of light and hope from the laboratory, the microscope, and the clinic, to that pioneer in the realm of medicine—the man at the bedside.

Etiology.—For hundreds of years scientific men have busied themselves with the question why the stomach did not digest itself, even when in a physiological condition. Stahl, more than two hundred years ago, decided at the end of a long study of the subject, that the protection of all living bodies from self-destruction in the various life processes, was due to "the sensitive soul," and reasoned that "in any case the fermentation which takes place in the alimentary canal is not an ordinary fermentation, such as occurs in a merely compound, nonliving body, but a most special character is impressed on the change by the energy of the soul."

John Hunter, in a most learned dissertation on "The Digestion of the Stomach After Death," in 1772, expressed this same idea of the self-protection of all living bodies, but instead of "the sensitive soul," he called the medium the "vital power."

So we see that for centuries investigators have been diligently seeking, with the crude light their day afforded, an answer to the same question we are asking ourselves to-day, and the answer to which will be a clear light upon the etiology of gastrointestinal ulcer and a number of kindred diseases.

Dating from these investigators of old, two ideas seem to have had their birth, the one expressed by Stahl and Hunter, that ulcer was due to some general or constitutional condition, and the other that it was merely a local affair, to be treated locally. Virchow expressed this second view in his hypothesis that ulcer of the stomach was due to some local vascular obstruction or aneurysmal dilatation of vessels, and Cohnheim, Silberman and others followed in the footsteps of the great pathologist by attempting to cause gastric ulcer by such local disturbances as the injection of laked blood or some chemical, or by the infliction of some direct mechanical injury to the gastric mucous membrane. All these attempts were only negatively successful, how-

*Read at the annual meeting of the North Texas Medical Association, at Dallas, December 11, 1906.

ever, since in nearly all the cases such ulcers healed quite as promptly as would have similar injuries inflicted on any other part of the body.

In an earlier series of exhaustive experiments of my own, long ago reported as having negative results, I gave to dogs increasing doses of mustard oil, every two or three days, covering a period of from nine to fourteen months. At the end of nine months dog No. 1 died, and two months later dog No. 2 died, but there was no ulcer in the stomach or intestines of either. At the end of fourteen months dog No. 3 was chloroformed, but while there was dilatation of the stomach and chronic gastritis, no ulcer was found in either stomach or intestines.

I then made a series of experiments on the hypothesis that ulcer was due to systemic changes or constitutional conditions, and in this series I confined dogs and guinea pigs to exceedingly close quarters for periods running to nine months, giving them little air, no light, no exercise, but an abundance of food. All possible precautions were taken in these experiments, by a comprehensive system of sterilization, to prevent infection. I will not go into these experiments further than to say that in a few cases typical ulcer was formed, but in so small a number of instances that the results were reported as wholly negative, since I had not been able to direct the results and had achieved my purpose apparently by chance.

My last experiments, finally reported in a paper read before the International Medical Congress at Lisbon last spring, were likewise based upon the hypothesis that ulcer of the stomach and intestines was due to general and not alone to local conditions.

These experiments were begun with the common colon bacillus, because this is the organism found normally in large numbers in the intestines, and that which multiplies luxuriantly in catarrhal conditions of the stomach. Cultures of the bacilli were used, made up in bouillon of meat extractives, first by injection directly into the circulation, but later on they were fed to the animals with their ordinary meat diet. In some cases the meat extractives were increased until the total of the extractives fed amounted to twice the amount in the untreated meat they ate. The bacilli used for the cultures were taken from the feces of patients with ulcer of the stomach.

During the experiments observations were made of the blood changes, such as the agglutinating, hemolytic, and coagulating power, the bacteria in the blood and stomach, the systemic disturbances, the evidences of infection, and the symptoms of ulcer such as pain, hemorrhage, etc. The serum agglutinated colon bacilli in high dilution, the normal protective influences were reduced, the opsonic index was below the normal, the coagulating time of the blood was slower; but at no time were colon bacilli found in the blood, nor were the systemic disturbances great. I have covered the field of these experiments so fully in my former paper, which is reported in the proceedings of the International Congress, also in the *Journal of the American Medical Association* for June 7, 1906, that it will suffice here to say that every animal employed in the experiments developed a typical ulcer of the stomach, without round cell infiltration, and without the capacity to heal in the way of those ulcers formerly induced artificially by Cohnheim, Silberman, and their colaborers.

Not long since, in a paper read before the pathological section of the British Medical Association at the Toronto meeting, and published in the *British Medical Journal* for April 20, 1907, I followed another feature of these experiments, and showed that where the feeding of the bacilli was stopped before perforation or hemorrhage had occurred, and a month or six weeks were allowed to elapse during which the dogs were placed under treatment for ulcer, post-mortem examination revealed ulcers in various stages of healing, thus showing the direct relationship between the feeding and the formation of the ulcer, showing also that when the ulcer-producing conditions were removed at a sufficiently early stage of the disease, and the general conditions were improved, the ulcer healed. This point may be remarked as a lesson in prognosis as well as in treatment.

Diagnosis.—It is never easy, and often impossible, to detect the presence of a gastric or duodenal ulcer in the early stages, and even later on, when the disease has become typical in its manifestations, a clear differential diagnosis as against carcinoma in the early stages, gallstone diseases, gastric atony and displacement of one or all of the abdominal organs, often hinges upon so small a detail that it will baffle all but the keenest and most experienced observer. The acidity or otherwise of the stomach contents is by no means a safe guide, though hyperchlorhydria is a dominant characteristic; there may or may not occasionally be found a blood reaction in the feces, indicating some new break-down in the ulcer surface; usually there is pain, which in the later stages is focused upon some well-defined area, but this pain is by no means invariably present, nor when present is it always greatest after eating, though this is oftenest the case; this circumscribed pain is often associated with pain penetrating through to the back.

But these signs, or any of them, must be taken in conjunction with the patient's general condition; almost invariably sufferers from gastric or duodenal ulcer are of a low order of nutrition, and though sometimes fat and apparently well nourished, the experienced observer will detect the fact that this outward appearance is deceptive, and due largely to faulty metabolism. Sometimes there is puffiness over the epigastric region, "gases on the stomach," the patient will tell you, but this is not always the case, and while there is faulty digestion, and a retention of food beyond the physiological period, in many of the cases, this is not always so, and can only be regarded in conjunction with a vast number of other symptoms.

Indeed, it may sometimes happen that the physician is reduced to the humiliating necessity of carefully and laboriously excluding every other possible disease, before he can arrive at a satisfactory diagnosis of peptic ulcer. This question of the blood changes is highly significant in the diagnosis, especially the serum reaction. Its subnormal opsonic index to the intestinal flora, the lessened agglutinating power, the indications of undernutrition—all have a distinct bearing on the diagnosis of ulcer.

Prognosis.—Naturally it will be one of the first offices of the physician, immediately after he has concluded his examination of the patient, to inform him or his family of the chances of recovery. The literature on this point has not been reassuring; a close study of this literature, however, discloses the fact that nearly all the premises contemplate a diagnosis at a late stage, oftentimes after hemorrhage has occurred, or even after the ulcer has perforated into the peritoneal cavity or into some other part

of the intestinal tract. Of course the prognosis at this stage is grave and the mortality high. But as we come to understand better the distinctions of diagnosis at a far earlier period, learn more and more of the underlying factors concerned in the condition, we must of necessity achieve better results. I will not burden you with recitations of the experiences of special obserevrs in this field, and will only pause to assure you that the unfavorable outlook of even the most recent years is not a criterion of what we have a right to expect of the present, nor a fair comparison of what the near future holds for us in the way of a promise to these sufferers.

For my own part, when I have arrived at a safe position in the diagnosis of my case, at a stage before marked hemorrhage has occurred, and where the general conditions aside from the local manifestation have not reached a grave state of themselves, endangering the patient's life, independent of the ulcer, I am prone to draw upon the records of my more recent cases for a favorable promise. Especially is this true of younger persons who may naturally be expected to respond more readily to measures for the improvement of nutrition and metabolism—in which the splanchnic circulation can be quickened under some of the methods we shall have occasion to discuss in consideration of treatment.

And, too, I think that as we come to understand ulcer and its causes better, the range of non-operative treatment grows constantly broader, and hence the hazards of surgical interference have less frequently to be taken.

From the cases of the dogs in the last experiments, where the ulcer inducing diet of colon bacilli was stopped after certain periods of time, and treatment for ulcer was instituted, and where post mortem revealed ulcers in various stages of healing, much is to be learned of importance in the prognosis of the disease in the human family, especially from the standpoint of general systemic conditions.

One of the most important considerations in the prognosis of gastric or duodenal ulcer and one that is likely to bring us many grave misgivings is the tendency of the disease to merge into malignancy. Ulcer offers a most suitable nidus for the development of cancer. Whether there is even the remotest relationship between the two diseases, we do not yet know; but the fact of the one supervening upon the other appears the more evident in the light of recent observations of serum changes occurring in cancer showing the general character of the diseased condition, which permits its development on the site of such an injury as ulcer of the stomach. So that, in determining, even in our own minds, the results we are likely to achieve in any case, we must assume not only the facts of the disease as it exists at the time, but must take into consideration the general condition of the patient as pointing toward or away from a malignant sequel.

Treatment.—Assuming, now, that we have a clearly defined case of ulcer to deal with, what are the indications for treatment? Primarily, of course, if we are correct in our judgment that the lesion is a general and not a wholly local one, and that it is induced by alterations in the pabulum of the intestinal flora, thus lowering the resistance of a gastric or duodenal mucous membrane rendered peculiarly vulnerable by malnutrition, defective metabolism, visceral atony and a long train of predisposing elements, we must address our efforts toward the improvement of these constitutional conditions, and perhaps the steps of treatment may be divided into three, namely (1) proper nutrition for the whole body; (2) the reestablishment of functional activity or tone in the diseased organ, so that its power of resistance may be increased; (3) the employment of measures to inhibit the multiplication and change the character of the offending intestinal flora.

Nearly all these requirements point in the direction of a proper diet. It is good practice to relieve the patient's immediate pain and distress from the sense of bloating, especially after meals, that most of them suffer, by withholding all food until hunger becomes a pressing matter, then give those foods best calculated to furnish the greatest amount of nutrition compatible with the greatest amount of rest to the stomach, and these foods will be given at long intervals at first, say once a day, gradually increased to twice, and then oftener, as the stomach reassumes its normal functional activity. Foremost in the diet I employ is meat freed of its extractives by a process of maceration and boiling, in which the meat is allowed to stand for some hours in cold water, and is then boiled thoroughly. The extractives are now pressed out and discarded; the absence of the extractives of the meat deprives the harmful intestinal bacteria of the necessary media for development, and hence the toxins which they produce are reduced to a minimum; the maceration and boiling have also the effect of hydrolyzing connective tissue into gelatin, thus rendering it more easily digestible in its fine state, and there is less excitement to the production of hydrochloric acid in harmful amounts. Meat treated in this way passes out of the stomach before milk or any other food, thus obtaining the ideal condition of the greatest amount of rest to the stomach with the maximum amount of nutrition. Not only is this meat more easily digested and more completely assimilated, but in actual food value it contains 55 per cent. of proteid as against 20 per cent. in the ordinary meat that is scraped and fed partly cooked. Milk in various forms is employed as a most excellent liquid diet, whey, either alone or with the myosin of this meat product; also whole milk after it has been coagulated with rennett; milk administered in a fresh state is apt to clot in the stomach when acted upon by the gastric juice, and hence likely to act as an irritant. Koumyss may be employed in the same way. The lactic acid in milk fermentation seems to have a powerful inhibitory action on the intestinal bacteria, and at the same time it seems to be peculiarly free from the irritating effect on the mucous membrane such as we attribute to hydrochloric acid.

Mineral waters have a two-fold action in these cases; they are in a measure contraindicated because they excite the formation of hydrochloric acid, but oftentimes their utility more than compensates for this contraindication, because they serve to flush out the gastrointestinal tract, and thereby help to prevent the formation and absorption of toxins. The gases of carbonated waters are extremely useful in assisting gentle peristalsis and in helping to force the food out of the stomach and thus obtain rest for that organ. But the use of any water, whether mineral or otherwise, only serves to aggravate the atony of the stomach because of its dead weight under pressure, which has the effect of discouraging peristalsis.

Other foods than those outlined will occur to the practitioner that will furnish a large amount of nutrition at the least possible expense in the way of irritation, such as rice, cornstarch, fresh eggs, the more easily digested vegetables such as potatoes in

the form of puree, combined with meat prepared as suggested, the leguminous grains such as peas, beans, etc., but always with their hulls removed, to prevent irritation, and placed in the autoclave under steam pressure of one and one-half atmospheres. It is the purpose in all these foods to so prepare them that hydrolysis or partial predigestion is accomplished, again obtaining necessary rest for the stomach.

While the excitation of peristalsis is a prime consideration, to aid in the restoration of the tone of the gastrointestinal musculature the means employed to bring about this physiological activity must be carefully chosen, especially as applied to the site of the injury—that is, the stomach. We cannot know the depth of the ulcer or the extent of the destruction of the gastric wall, so the introduction of a tube must therefore be carefully undertaken, if at all, and instead of the rhythmic air pressure gymnastics that we would like to employ we must content ourselves with the more indirect administration of bicarbonate of soda in water, which, acted upon the hydrochloric acid of the stomach, sets free carbonic acid gas for purposes of mechanical but gentle distention when resident hydrochloric is absent, citric acid in the form of lemon juice may be added, which also adds to the palatability of the drink. We employ this distention because, as I have shown in other work, the only means we have of exciting contraction in the stomach muscle is stretching; it will respond to no other form of irritation. Similar excitation of gastrointestinal peristalsis in these cases of ulcer is more efficacious when applied through the colon, because irritation through the reservoir at either end of the alimentary canal has the effect of influencing action along the whole tract. To this end we employ alternate hot and cold water lavage of the colon, introducing a single or double tube as high as the sigmoid and injections either by reservoir or pump, small amounts of water, allowing each douche to flow away before another is used. The hot water is used at 50° C. (122° F.), and the cold at a little above the freezing point. Only small amounts of either are injected at a time. If desirable some antiseptic may be used toward the last of the douching, for its bactericidal effect on the intestinal flora. In consonance with this colonic lavage I am accustomed to stimulate rhythmic contraction and distention along the alimentary tract by the introduction of air passed through some disinfecting fluid, as high up as the transverse colon. This air pressure, sustained only momentarily and released, then repeated, speedily brings a responsive peristalsis higher up and the procedure is usually followed by an emptying of the whole lower intestine. This exercise is also of great utility in arousing the splanchnic circulation, thus clearing the whole area of a sluggish blood supply and increasing the metabolism of the injured organ.

The "rest cure" or confinement to bed is often helpful in these ulcer cases, and sometimes may be a necessity. The patient is ordered to bed; he may see friends, read light literature, and enjoy light conversation. He must not transact business or exert himself in any way, mentally or physically. This rest may be continued until all the most pressing symptoms of pain, anorexia, and flatulence are removed. The duration of this period of rest may extend from two weeks to six weeks, according to the condition.

1820 Michigan Avenue

A METHOD OF REDUCING OLD COLLES' FRACTURES: STIFFNESS FOLLOWING APPARENT CONTUSIONS OF THE ELBOW.

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One occasionally meets a patient who complains of what is called a sprain of the wrist of some weeks' duration. Usually there is a history of a fall upon the hand three or four weeks prior to seeking advice. Often at that time no medical opinion has been sought, or, if so, many times the erroneous diagnosis of a simple sprain of the wrist is made. The swelling and disability of the wrist, not improving at the end of a month, cause the patient to seek expert advice. A tentative diagnosis of an old unreduced Colles' fracture is made and this is confirmed by an *x*-ray plate. Such a condition is shown in the accompanying illustration (Fig. 1) of one month's standing.

Fig. 1.—Old unreduced Colles' fracture showing the transverse fracture at A, with dislocation backward of the hand carrying carpus with it. Note styloid processes of radius and ulna on the same level.

The fracture is then left to heal consolidated and the question comes up at once whether anything can be done to improve the position of the fragments. Even with considerable deformity, in some cases the disability may be so slight as to indicate that good judgment would be shown in advising that nothing be done to improve the deformity, since in an attempt to correct this the disability might be increased. In other cases the disability and deformity are both marked, so that an attempt to overcome these by refracture is strongly to be advised, providing that this can be done without too great damage to surrounding structures. By using the hands alone it is almost impossible to produce a refracture in the same line as the old fracture, for it is difficult to obtain sufficient purchase with the hands alone on the small lower fragment to accomplish this. In this method the wrist structures are also severely strained, which is a great disad-

vantage. A procedure which has given me uniform satisfaction is the following. I do not claim any originality for it since I learned it from my chief, Dr. Ellsworth Eliot, Jr. My only reason for publishing it is that I have not seen it in print.

FIG. 2.—Method of refracturing an old Colles' fracture by means of a large monkey wrench.

The method is as follows: A large engineer's monkey wrench is procured and the blades are well padded. (Fig. 2.) The patient is anesthetized and the blades so placed on the wrist that they are entirely proximally situated to the fracture line, the edge of the dorsal blade resting against the posteriorly projecting upper edge of the lower fragment. The blades are then screwed together, so as to fairly tightly embrace the tissues. With the expenditure of very little force, a refracture through the old fracture line may readily be produced by twisting the wrench so as to flex the lower fragment on the upper. There is no strain whatsoever brought upon the structures of the wrist itself, which consequently remains uninjured. The damage to the tendons by the blades of the wrench is trifling and is soon recovered from. The after treatment is similar to that which obtains in cases of fresh Colles' fractures. Anterior and posterior wooden splints are used, which do not extend further than to the metacarpophalangeal joints, affording free play for the fingers. Three weeks is usually ample time to maintain immobilization in the splints. This method in almost all cases will do away with the necessity for any cutting operation.

Traumata to joints in general are most puzzling from a diagnostic standpoint, and in no joint is this more true than in the elbow, where the structures which make up the mechanism are so numerous and complicated. X-ray photographs are here invaluable and their systematic use even in slight injuries to the elbow is to be emphasized. By their employment I have lately explained a phenomenon which has several times before puzzled me. A typical case exhibiting this condition is as follows: A patient who has suffered a trauma to the elbow applies for treatment immediately after the injury. Careful palpation and even an *x*-ray photograph reveal no fracture of any of the bony structures in or about the joint. Treatment appropriate to a contusion or sprain is instituted. Then, to one's surprise and chagrin, about the third or fourth week after the accident, the elbow begins to show considerable restriction in the motions of flexion and extension. An *x*-ray photograph at this stage reveals a fragment of bone in the joint which did not appear in the previous picture taken immediately after the injury. The explanation of this seems clear that at the time of the accident a piece of the periosteum without any attached bone has been torn free from some of the bony structures of the joint. This periosteum does not appear distinctly in an *x*-ray picture. It, however, in the course of time proceeds to produce a fragment of new bone, which may lie between the bony articular structures, causing the gradually increasing restriction of motion. Usually by forced, persistent, passive motions, the new bony fragment may be crowded away from between the joint surfaces and good joint functions obtained. This would, however, be the final result only in cases where the patients were seen at a period of time after the injury before the new fragment was thoroughly ossified, while it was still malleable. In old standing cases it might be necessary to remove the fragment by open operation. The following picture shows an *x*-ray photograph of the elbow of a boy of ten who had fallen upon it a few hours before the picture was taken. There is no definite bony lesion to be made out distinctly. On looking at the plate (Fig. 3) carefully, one sees just below the external condyle at *A* a faint shadow which, in the light of the later picture, was probably a piece of periosteum torn off the condyle. This

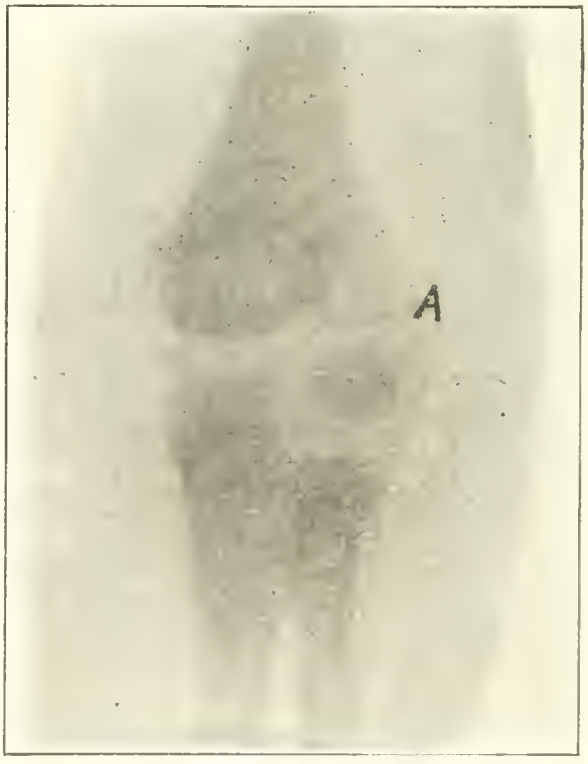

FIG. 3.

latter seemed normal, its outlines being perfectly regular and showing no defect. The boy was treated for a contusion of the elbow and did not return after a week's time.

Four weeks later the boy presented himself again, complaining of considerable restriction of flexion

and extension of the elbow. Fig. 4 represents what had occurred to cause the limitation of motions, namely, a proliferation of new bone beneath the ex-

Fig. 4

ternal condyle at *A*, due evidently to a piece of periosteum torn off at the time of the injury. Daily passive bending of the elbow soon restored almost normal mobility to the joint.

112 West Fifty-fifth Street

A STUDY OF BLOOD PRESSURE IN COMPRESSED AIR WORKERS.*

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During the middle of the eighteenth century compressed air was very extensively employed, especially in Germany for the treatment of disease, and the literature of that day is replete with reports as to the wonderful results achieved by this method. The Germans employed compressed air in the treatment of practically every known disorder of the body and institutes or sanatoria devoted to this one method were scattered throughout the entire land. The idea was really first suggested by Henshaw, an Englishman, in 1664. A very considerable impetus to work both with artificially compressed and rarefied atmospheres was contributed by the Dutch school in the seventeenth century, but the therapeutic employment of compressed air had been largely discarded by the English and Dutch investigators before its rediscovery and widespread application in Germany. The result of all this work has been that compressed air is now but little employed as a remedial measure except in a few conditions in which it really appears to be an efficient agent.

Very little of value is found in the older writings concerning the actual effect of compressed air on the blood pressure, though it was assumed to act chiefly through its influence on the vascular functions. Most of the observations then recorded were based chiefly on guesses or on prejudiced clinical observation and not on accurate scientific determinations.

The importance of the study of compressed air to us to-day is mostly on account of its relationship to certain occupation diseases rather than as a remedial measure, for we have among us an already large and increasing class of workmen who live a considerable period of their working life in compressed air and the numerous recent experiments in aeronautics renders this also a possible future field for studies of the reaction of the human organism to marked and sudden variations in atmospheric pressure. The demands of modern engineering now so frequently require high air pressures that it becomes particularly necessary for us to record all observed data in regard to the effects of engineering pressures on the human organism.

Caisson disease is no longer misunderstood, at least by those physicians who are in frequent contact with cases of this complaint, for its cause and most efficient manner of prevention have been fully demonstrated, hence these observations are not directed with especial attention to this condition, but are an attempt to clear up certain points in regard to the behavior of the circulation under these abnormal but very necessary conditions. It is hoped that my results may be of some value in the selection or exclusion of candidates for work in compressed air and also that these experiments may throw a new and important, though largely negative side light on the ever interesting and pregnant question of the physiology of blood pressure and the manner in which it readjusts itself under rapidly variable external conditions. The matter is also of considerable general clinical interest since it applies very materially to the question of selection of the proper altitude for various classes of patients suffering from cardiovascular diseases. The recent communications of Zuntz and Loewe and of Müller and Caspari, ably summarized by Sewell of Denver, render all matters bearing on this subject of vital interest to every physician, and although the studies just cited are exclusively directed to blood pressure at high altitudes, they apply with almost equal force to conditions in which the pressure is augmented instead of decreased.

It has been currently believed, I feel warranted in stating, that the blood pressure is greatly increased under compressed air and most accounts describe the superficial vessels as compressed, contracted, and anemic with corresponding engorgement of the large trunks of the internal viscera. Most physicians in charge of the medical end of these engineering operations are of this opinion and most of the literature pertaining to the subject also leads to the same conclusions, in which I at first entirely coincided from my own personal experience and observation. Nevertheless it seemed to me worth while to make a systematic study of this question and the opportunity has been lately offered to me through the courtesy of Dr. McCort of the Belmont tunnel. With the assistance of Mr. Turnbull, his assistant, the following series of seventy-five cases has been compiled.

Of the seventy-five men on whom observations were made, all but two had been working in compressed air over one month and may therefore be considered as habituated compressed air workers. Forty-four had worked in compressed air less than one year, twenty-three over one year and less than

*Read at a meeting of the New York Academy of Medicine, April 16, 1907.

five, six over five and less than ten. Two men, both engineers, had worked almost continually with compressed air, one for twelve and one-half and the other for twenty-two years. No substantial difference in results was found in any of these various groups, hence it seems fair to assume that the statistics collected from the entire group is fairly characteristic for healthy men, for all these men had been subjected to physical examination and all were in the prime of working life, that is from twenty to forty-five years of age. Forty-three of them admitted using both tobacco and alcohol habitually, some of them to great excess, but without apparent effect on the point in question. Four used alcohol and four tobacco alone and the rest claimed freedom from both habits.

The instrument used for our determination was the familiar Janeway sphygmomanometer, the 13-cm. armlet being employed in every case. The pressure was taken from the right brachial artery with the armlet placed just above the bend of the elbow. Two consecutive estimations of the systolic pressure were made in each case and the results were averaged. The diastolic pressure was taken but once, and when it could not be satisfactorily obtained the case was thrown out of the series considered. The pressure in each instance was first taken just before entering the air, before which, at least theoretically, the subject is supposed to have been resting for not less than three hours. The determination in the compressed air chamber was taken after from one to two and one-half hours' work at a tube pressure which averaged about thirty-one pounds above atmospheric. The general lighting and hygienic conditions of the tunnel throughout were excellent and the physical work never excessive. The measurements taken after decompression were secured after the men had been returned to normal atmospheric pressure for from ten to fifteen minutes. Only one of the subjects was suffering from too rapid decompression, that is from caisson disease.

The average systolic pressure of the seventy-five men, taken before entrance to the air, was 116.19 mm. Hg. The average diastolic pressure taken at the same time was 91.08 mm. Hg. The average systolic pressure taken in the air was 128.88 mm. Hg. and the average diastolic pressure taken at this time was 87.68 mm. Hg. The average systolic pressure taken soon after decompression was 112.76 mm. Hg., and the average diastolic, 90.78 mm. Hg.

It then appears that the difference in systolic pressure of the resting man outside the compressed air and after an hour or more work in thirty-one pounds plus is but 12.69 mm. Hg., no more difference than would certainly be expected between a resting man and a man immediately after heavy exercise at ordinary atmospheric pressures. The difference in the diastolic pressure was but 3.4 mm. Hg., but in this case the diastolic pressure was decreased 3.4 mm. while the systolic pressure was raised 12.69 mm., so that the difference between systolic and diastolic pressure outside the air was 25.11 mm. while this same space under compression was 41.2 mm., again practically the same conditions found under ordinary atmospheric pressure after active exercise.

After decompression, which terminated a three-hour shift in the air, the difference between systolic and diastolic was 11.08 mm., or a loss in cardiac energy or vascular tone as compared with the resting condition of 13.13 mm. The difference between the diastolic after decompression as compared with that under the pressure showed the pressure under the air to be exactly 13.1 mm. lower.

The significance of these figures appears to me to be very simply and yet accurately expressed in the sentence that in so far as these experiments go, the changes in blood pressure after labor under a pressure of thirty-one pounds plus are practically the same as under usual atmospheric pressure and that about the relative space exists between systolic and diastolic in both conditions, again practically like those in the normal atmosphere.

It is entirely to be expected that after three hours' labor in the air the decompression systolic pressure should be decreased, but as only 3.43 mm. Hg. difference exists it is strongly confirmatory of the statement of the average workman that labor under the air is more easily accomplished than at ordinary pressures and this small loss is negative as regards the contention of Jaminet that excessive waste of the body energy takes place under these conditions, due, Jaminet asserted, to the too rapid oxidation of the tissues which he assumed, entirely on theoretical grounds, to take place. I must, however, admit that this slight fall may be otherwise explained according to the determinations of Zuntz who found a corresponding fall taking place in the rapid change to higher altitudes.

Several points bearing on the question of compressed air labor arise in connection with these determinations. One of the most important of these is the disproval of the theory that many of the deleterious effects on the circulatory apparatus of compressed air workers follows as a result of the high external pressure on the superficial vessels, Were this the case as asserted by many, notably by Smith and Bouchard, a marked rise in blood pressure must inevitably take place, due to peripheral compression, and on the contrary a lack of such rise indicates that the intracorporeal air or gaseous pressure is proportionately increased until finally balanced in compressed atmospheres, a fact which has also been abundantly proven by numerous experimental studies as well as indicated by the post-mortem findings in caisson disease, though still denied by some theoretical workers.

From these experiments and from other researches conducted on animals by myself I believe that very slight disturbance of the vascular distribution takes place under moderate decrease or increase of atmospheric pressure, when slowly accomplished, a point also corroborated by the conclusions of Zuntz who believes that variations in anterial and capillary capacity are altered more due to deficient or overly abundant oxygenation in rarified or compressed atmospheres. Brief observation of the respiratory activities in compressed air workers convinces me that this statement is thoroughly sound. If this fact is true we must completely reorient many of the ideas now commonly accepted which forbid patients afflicted with cardiovascular disease from living at high altitudes on the one hand, or at sea level on the other.

I hesitate somewhat in a further, but not unnatural deduction, and that is that moderate degrees of renal or circulatory disease should not necessarily exclude workers from labor under moderate compressed air pressure. I certainly think that this is indicated by these observations, and furthermore I know that this fact is well recognized by engineers and workmen, for a very large percentage of caisson workers are highly alcoholic and therefore nephritic, when you can get them to admit the

truth, which they will rarely do in this respect, since they fear disqualification.

The exhaustion expatiated on by some observers after labor in the caisson is negatived in so far as the circulatory functions are concerned, by the relatively slight loss in cardiac energy after return to normal pressures.

Finally, it appears demonstrated that the blood pressure is not abnormally raised under compressed air, and these few observations but confirm the now well established theory of gaseous liberation in the causation of caisson disease, and I hope put at rest forever the theory of vascular hypertension and unbalancement as etiological factors in the causation of this condition.

44 West Ninth Street

POPULAR EDUCATION IN MATTERS MEDICAL.

A PLEA FOR A MORE THOROUGH AND WIDESPREAD DIFFUSION OF KNOWLEDGE IN HYGIENE AND THE PREVENTION OF DISEASE.

By H. W. WRIGHT, M.D.,

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The present ignorance of the average citizen in regard to the care of his health and that of his children is a distressing sight to anyone who cares for the preventive side of medical work. We see the effects of such ignorance and carelessness in every community and among all classes of society. But it is especially among the poor that preventable misery is so widespread, from whom its results are so much further reaching than we realize.

It is not that the old-time superstitions regarding disease and in respect to remedies have any considerable influence to-day; but it is the indifference to the importance of simple cleanliness in the person, the food, and the home, the importance of normal, regular habits of living, of hydrotherapy and ventilation that is keeping up the foci of epidemics and the existence of all manner of digestive and respiratory disorders. I do not think it an exaggeration to say that a very large majority of our young people are growing up in total ignorance of and indifference to their own physiology and the simple rules of hygiene. When these marry they know even less about the care of their children. They may have "studied physiology" in the public schools, they may have even passed an examination in the subject, and so have been promoted to a grade where it is thought unnecessary to teach it; but the results of such study are not apparent, except that they are conspicuous by their absence. Consequently when these children become older they and theirs are an easy prey to the patent medicine or any other form of quackery, and charlatanism (including "Christian Science") that comes along.

Another disastrous result of such ignorance is the widespread perversion of the sexual functions and the spread of venereal diseases, with all their attendant miseries. The young are not taught at home regarding these matters because in many cases the parents don't know themselves, and in other cases because the subject is thought too "indecent" for consideration.

We see the results of this indifference to personal health more especially in large cities and crowded communities; among such the circumstances of life render people more susceptible. But I am willing to venture the belief that if popular education in hygiene were as thoroughly conducted as it ought and could be, the percentage of cases of all the infectious diseases, of chronic respiratory disorders, of chronic digestive disorders, and of venereal diseases would be reduced more than one-half in the next generation after such teaching had been so propagated. Such knowledge should be available by all, even the poorest. It is a mistake to expect dirt and disease to be inevitable and necessary accompaniments of poverty. They are rather accompaniments of ignorance, indifference, and loss of self-respect. Why are people's persons and homes dirty? Because they do not realize the necessity of keeping them clean. Why is their food badly cooked and unwisely chosen? Because they know no better. It isn't because it costs any more to do otherwise. Why are houses built in unsanitary places and badly ventilated, and poorly equipped with plumbing? It is in most instances because the builders do not *know* enough about the dangers of such conditions to *care*. Indifference goes with ignorance; as knowledge increases indifference diminishes. The same may be said of factories, unhealthy methods of manufacture, of child labor and long hours for women and children in unhealthy workshops. Most of the evils of these establishments are due to thoughtlessness, *i.e.* ignorance.

What then should the public be taught, and how should it be taught them? In the first place, they should be taught the physiology of digestion, respiration, and procreation, the nutritional values of various foods and how to prepare them, the science of ventilation, the danger of bad air and the safety of fresh air, in order to dispel the popular fear of the latter; the value of hydrotherapy; the physiology of infant life and nutrition; the sources of bacteria and how to prevent the introduction and spread of infectious diseases.

These, in a general way, are some of the subjects for popular education. How should these subjects be taught? The most available place for the instruction of the young is the school. Here there should be competent instructors and directors of physical culture and athletics who would also be teachers of physiology and hygiene, and preferably physicians. The present method of teaching physiology in the public and private schools is little short of an absurdity, so little time and care are given to it in proportion to its importance. Furthermore, such teaching is usually done by some one who needs the instruction quite as much as the pupils. In addition to the school instruction there should be public lectures and demonstrations for children and adults, with special courses for the latter in matters pertaining to procreation and the care of children. The public lecture on medical subjects of the present day is usually confined to a few vague remarks on the "Circulation of the Blood." A recent notable departure, however, should be greatly commended, namely the public stereopticon lectures on tuberculosis given by the New York City Health Board. The fact that these were received with indifference mixed with ridicule (according to the newspapers) is a strong argument in favor of their continuance and extension. The recent exhibits on the same subject are also steps in the right direction.

Another way of spreading such knowledge would be by more complete medical inspection in the homes of the poor and by the help of district nurses who, after such inspection by a physician, would be sent to correct unhealthy conditions of living by practical instruction and help. Literature upon these matters could be circulated freely in the form of a

monthly or weekly paper issued by the health board of the community.

In order to carry out such a system of popular education there would be necessary greater authority in the hands of the boards of health and education. Such authority could be obtained by proper legislation, just as the authority in matters of health has been acquired heretofore. Sickness is unquestionably an economic loss to everyone, directly and indirectly; and it is everyone's duty, from both a selfish and altruistic point of view, to do all that he can to prevent it.

INACCURACY OF DARE'S HEMOALKALINOMETER.

By FRANK P. VALE, M.D.,

WASHINGTON, D.C.

As some authorities had attempted to show a relation between the alkalinity of the blood and the activity of the organic exchanges between the blood and the tissues, I thought there might be alterations of the alkalinity of the blood of interest in shock and collapse. A little over two years ago, with the desire of following up this idea, I looked over the literature on the alkalinity of the blood, for the purpose of adopting the most satisfactory technique. In this way I became acquainted with the method of Dare (*Johns Hopkins Hospital Bulletin,* Vol. XIV., No. 148, 1903), and undertook its use with considerable enthusiasm on account of its ready applicability.

To compare the point of the disappearance of the oxyhemaglobin bands with the alkalinity as ascertained with litmus as an indicator, I was advised by my friend, Dr. E. R. Hodge, a practical chemist, to employ $\frac{N}{200}$ H_2So_4, instead of a like strength of tartaric acid. As a preliminary to a further use of the method, I examined forty patients suffering from various conditions, in many of which one might expect to find changes in the alkalinity of the blood, and obtained, in addition in each case, the hemaglobin percentage and number of red blood cells, so that the color index might enter into the data, as suggested by Dare.

The results were very constant; 1 c.c. of the sulphuric acid solution caused the disappearance of the absorption bands in three to five minutes; an additional 0.1 c.c. or 0.2 c. c. caused their disappearance in one-half minute. According to the instrument's scale, this meant an alkalinity of 133 mg. of NaOH per 100 g. of blood. Then I found with litmus as an indicator there was required but 0.4 c.c. to 0.6 c.c. to neutralize the same amount of blood—.018 g. With a standardized $\frac{N}{200}$ tartaric acid solution, prepared by Dr. Hodge, there was a still further discrepancy, as 4.5 c.c. was required to cause the disappearance of the absorption bands. (A tartaric acid solution, made according to Dare's formula, and *not standardized*, required 2.2 c.c.) A $\frac{N}{200}$ oxalic acid solution gave still a different result—3.9 c.c. A specimen of blood in which 1.1 c.c. of the sulphuric acid solution caused the immediate disappearance of the oxyhemaglobin absorption bands, 0.5 c.c. caused their disappearance by the end of twenty-four hours.

Dare found that 2 c.c. of $\frac{N}{200}$ tartaric acid solution was required to neutralize .015 g. of blood. (The pipette supplied with my instrument held .018 g.) Two cubic centimeters of any half centinormal acid solution is the equivalent of .0004 g. NaOH. To express the alkalinity of the blood in milligrams in terms of NaOH per 100 g. of blood the equation becomes: $\frac{1.0\%}{.015}$ multiplied by .0004, which is 2666. mg., and not 266. mg., as given by Dare.

As 2666. mg. of NaOH per 100 g. of blood is about four times as great as that given by any investigator, and as the alkalinity varied with the acid employed, I discontinued the use of the "hemoalkalinometer," concluding that others had found these inaccuracies, and that the method was being condemned by insufficient praise, for I noticed no further journal articles concerning it.

The method has, however, been noted in several text-books, some of them foreign, *e.g.* H. Labbé, Analyse Chemique du Sang. An authoritative monograph on Clinical Diagnosis just from the press (Chas. P. Emmerson, Johns Hopkins, 1906), describes the method as very ingenious and expresses the anticipation that some practical results may be obtained from its use.

I should not have related my experience, which was carried no further than a demonstration of the inaccuracy of the method to my own satisfaction, were it not for having read within a few days an article which appeared a year ago in the *Journal of Pathology and Bacteriology*, by Dr. Mercier Gamble (March, 1906), in which the above fallacies of the method are extensively set forth. I was led to this article by a recent review of hematological literature, in which Dr. Gamble's paper was referred to as questioning the reliability of the Dare method. The mildness of Dr. Gamble's phraseology, in criticism, might leave in the mind of the reader a hope for the Dare method, but any assimilation of the data there set forth would not, and it is the object of this memorandum to call attention to the latter.

1616 Eye Street, N. W.

THE USE OF PILOCARPINE FOR THE RELIEF OF PRURITUS, ESPECIALLY IN REGARD TO PRURITUS VULVÆ.

By JOHN J. REID, M.D.,

NEW YORK.

It does not seem to be be generaly recognized that pilocarpine has a specific effect in different forms of pruritus. My first knowledge of the value of pilocarpine in this way came from the late Dr. G. D. Holstern of Brooklyn. Dr. Holstern used it in pruritus coincident with jaundice and with happy effect. Since that time I have used it in pruritus vulvæ, pruritus associated with skin disease, and general pruritus without any assignable cause.

Pruritus seems to be a neurosis in some way allied to neuralgia, and has this in common with neuralgia that it is periodic and may occur without any immediate cause. In pruritus vulvæ I have found the same benefit from pilocarpine in cases occurring with and without diabetes. The ordinary dose is one-quarter grain to be given only when the itching manifests itself and is not to be repeated unless the itching returns. It is well to begin with one-eighth grain, inasmuch as some patients are very susceptible to the drug.

It may be of interest to note a case of pruritus occurring on a medical student at the time of his final examinations. Without the use of pilocarpine he would have found it impossible either to think or write. In this case 1-120 grain of atropine in conjunction with the pilocarpine prevented the sweating. In all of the cases referred to pilocarpine was given by the mouth.

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THE RESPONSIBILITY OF THE COUNTRY PRACTITIONER FOR THE EXISTENCE OF TYPHOID FEVER.

THERE is nothing more definitely established in medicine than that typhoid fever is usually a country-bred disease and that its existence in cities whose water supply is drawn from running streams is due almost wholly to infection brought therein. We do not dispute the fact that the disease may be spread by the agency of flies, but this occurs chiefly or wholly in the country; nor that it is often acquired through eating of salads and raw fruits and vegetables, but these are brought from the country and the infection which they convey is of extra-urban origin. Certain of the lake cities which draw their water from the same place into which they empty their sewage may be examples of self-infection, but observation has shown that the water they drawn even from this source is not always polluted, and were the disease not continually reintroduced from without in the ice or in the raw food supplies it would soon die out. Dr. William G. Daggett of New Haven, Conn., stated this fact very forcibly in a paper presented to the Connecticut State Medical Society in May, 1904.

We have already commented upon this paper on two separate occasions (MEDICAL RECORD, September 3 and October 15, 1904), but it is a subject that will bear frequent repetition. Dr. Daggett's remedy for the evil was a system of control by a State sanitary police, the officers of which should inspect regularly and frequently privies and cesspools and also the wells and other sources of the water supply in rural districts. This would go far toward an abatement of the evil, but not far enough. Public officials could investigate the water supply in each community, but they could not supervise the management of each case of typhoid fever occurring therein. Such inquisitorial methods would become most unpopular and would arouse an antagonism which would surely defeat their ends. However ideally placed the well may be, its contamination or the contamination of some stream emptying into another from which a distant city may draw its water supply could not be prevented by official supervision.

The source of infection is the discharges, feces and urine, from one actually suffering or convalescent from typhoid fever, and the physician attending such a patient is the one to whom the community must look for protection. If every attendant upon a case of typhoid fever in the country were as insistent upon the disinfection of the discharges as upon the following out of his directions in regard to diet and medicine, the disease would be confined to the individual sufferer and there would be no possibility of its transmission to others in a city ten, twenty, or fifty miles away. We fear the practitioner in the country does not always appreciate the load of responsibility he carries for the health of his fellows in other communities. He is too often concerned with the individual case, and as long as this case is conducted to a successful issue he forgets the potentiality for evil it contains. If the discharges from every typhoid fever patient throughout the entire country were thoroughly disinfected before leaving the vessel in which they are received, the disease would soon be as rare as typhus, and thousands of lives would be saved.

RENAL DECAPSULATION FOR ECLAMPSIA.

THE severity which characterizes an eclamptic seizure has stimulated the introduction of certain procedures of a most radical nature. Thus Edebohls suggested and carried out decapsulation of the kidneys as a means of arresting the progress of this dreaded condition. Although a number of apparently successful cases have been reported, the method has by no means met with general approval and reports of its application by others are naturally of interest. De Bovis (*Semaine médicale*, No. 10, 1907) performed a renal decapsulation in a young woman who developed a severe eclampsia soon after delivery. None of the usual remedies seemed to have any effect and the patient grew rapidly worse. As a last resort, the capsule was removed from one kidney without any trouble, disclosing an extensive ecchymosis of the organ. The coma which had been present disappeared soon after the operation and the urinary secretion was at once increased. The patient recovered.

The number of cases in which this operation has been performed is not sufficient, however, to warrant the drawing of any definite conclusions regarding its value in eclampsia. Of five known cases, a fatal edema of the lungs was reported in one, and as the mortality of eclampsia has been stated to be about 20 per cent., the statistical evidence so far does not seem to warrant operation. As a matter of fact, however, it is usually only the severe cases in which uremia and anuria are prominent symptoms which are subjected to the operation in question. Another point to be borne in mind is that the kidney is not the only organ involved in eclampsia, so that it seems rather difficult to account otherwise for the improvement which has been noted in those instances where renal decapsulation has been carried out. Neither can the loss of blood be regarded as a possible factor, for it does not compare in extent with that which would be lost in an ordinary phlebotomy. It is quite evident that for the present the value of the operation referred to will remain *sub judice*, although future experiments and observations may contribute to its better understanding and appreciation.

THE SEVERE TYPES OF RUBELLA.

Rubella, or, as it is more commonly called, German measles, is usually regarded as a harmless disease which presents the characters of a mild febrile disturbance and requires but little treatment. Reports are to be noted here and there in the literature, however, which show that the disease, particularly in weak and emaciated children, may be accompanied by very severe complications dating from an involvement of the digestive or respiratory systems, among them being enterocolitis and bronchopneumonia. It has been claimed that these are cases of true measles rather than the so-called German variety, but this claim may with propriety be placed on the same plane, according to Cheinisse (*Semaine médicale*, No. 52, 1906), as the view that the disease in question is not a clinical entity but must be regarded as a mixed form of scarlet fever and measles. A typically severe case of rubella is reported by this writer as having occurred in a young woman of twenty-two years, who on the sixth day after the eruption was observed, developed a temperature of 105° F., became hoarse, and experienced difficulty in swallowing. The tonsils became greatly enlarged and the entire oral mucosa was markedly swollen. The tongue presented a thick coating which, in contrast to this phenomenon in scarlatina, was limited to the tip and the edges of the organ. There was also considerable general depression. With appropriate local and systemic treatment, the patient was well in a week, although she was considerably prostrated for some time afterwards.

Similar cases of secondary angina following rubella have also been described by a number of other writers and in one instance the appearance of an epidemic in a hospital was characterized by the development of bronchopneumonia, adenitis, meningitis, and otitis media in some of the patients. In this series of twenty-seven patients there were eight fatalities. It would seem from these adverse reports that we are not justified in regarding rubella as a disease without danger to those who may have contracted it.

The Etiology of Rachitis.

The theories relative to the nature and pathogeny of rachitis are very numerous, but it must be admitted that they appear to be either directly incorrect or at best far from satisfactory. A large proportion of the investigators who have interested themselves in this problem have taken as the basis of their views some error of nutrition. Some incriminate a too short period of nursing, others too protracted breast feeding, some seek the cause of the malady in some deficiency of the maternal milk, others in unsuitable artificial nourishment. Even the practice of pasteurizing or sterilizing the milk has been alleged as having an important bearing in the etiology of rachitis. Another suggestion in this regard is put forward by Esser (*Münchener medizinische Wochenschrift*, April 23, 1907) who considers that the anatomical changes in rachitis are the result of an increased formation of immature cartilage and osteoid tissue together with an abnormally increased absorption of the already formed bony structures. In order to explain this vice of development he endeavors to bring it into association with the function of the bone marrow, and points out that in rachitis there is always a hyperleucocytosis resembling in type that occurring in cases of long-continued overnutrition. As the result of the excessive stimulation of the bone marrow, growth is at first encouraged, but later the function is overtaxed and a perversion of development results. Esser supports his theory both by experimental evidence obtained by overfeeding animals and by clinical observations on a very large material. In every case of rachitis, he says, no matter whether the children were breast or bottle fed, and irrespective of any hereditary tendency, he found that there was a history of persistent overfeeding. While this theory will no doubt meet with opposition from many pediatric physicians it has at least the merit that it appears to render the therapeutic problem gratifyingly easy to solve.

The Rapid Demonstration of Tubercle Bacilli.

The method of securing certainty in suspected cases of tuberculosis by injecting some of the supposably infectious material into guinea pigs is satisfactory so far as reliability is concerned, but labors under the disadvantage of the length of time that must elapse before a definite result, particularly a negative one, can be obtained. In spite of this drawback the method at present, especially in view of the apparent complexity of the acid-fast group of bacilli, appears to be indispensable. This is particularly true in dealing with cases of genitourinary infection, in which the urinary sediment is so likely to contain confusing organisms that the guinea pig must nearly always be called upon to give the final decision. Bloch, working in Caspers' clinic, suggests (*Berliner klinische Wochenschrift*, April 29, 1907) a modification of the technique of the method by means of which it is possible to obtain a definite result in from nine to eleven days instead of from three to six weeks, as is ordinarily the case. It consists in encouraging the rapid proliferation of the injected tubercle bacilli by lowering the vitality of the tissues into which they are introduced. The centrifuged urine sediment is injected into the groin of the animal and the tissues of this part are rolled between the thumb and forefinger. On detecting the lymphatic glands as minute kernels they are crushed by strong pressure. If tubercle bacilli were present in the injected material the author states that they will multiply with unusual rapidity in these damaged tissues, and that they may be demonstrated in films or sections made at the expiration of the period mentioned. Smegma bacilli do not appear to be a source of error, and the method has given accurate results in the cases in which the author has tested it. If a more extended trial of the plan demonstrates its reliability it must be regarded as a valuable adjunct to our diagnostic procedures; but owing to obvious considerations a great many control observations will be required before it can be accepted among the trustworthy clinical methods.

Tuberculous Disease of the Bronchial Glands.

It occasionally happens that marked reactions to tuberculin injections manifest themselves in patients in whom no clinical evidences of tuberculosis are recognizable. In this class of cases, however, the subjective symptoms are usually well developed and are of such a character as to lead to suspicion

of the presence of true tuberculous disease. They consist mainly of pains in the back and chest, a dry cough, fatigue, and occasional night sweats. Neisser, who refers to this condition in the *Archiv für klinische Medizin*, Vol. 86, No. 3, states that, although we may be quite certain as to the presence of a tuberculous infection in the chest cavity, the question remains as to what particular organ is involved in the process. He believes that in such doubtful cases attention should be directed to the bronchial glands. If one of these has become painful in consequence of an inflammatory process evidence of the fact is obtainable in two ways. Indirectly it will give rise to tenderness in certain portions of the spinal area and directly the pain may be elicited by the pressure from a sound or bougie in the esophagus. Neisser found that in most instances in which the symptom complex noted was present he could elicit the sensation of pain in the region of the bronchial glands by an esophageal exploration in the manner referred to. The writer thinks that in these cases the symptoms are due to the development of a fresh tuberculous focus in one of the glands. Notwithstanding the many advances made in our knowledge of tuberculosis, there are many diagnostic points in the more obscure cases regarding which we need enlightenment, and consideration should be given to any procedure which will aid in clearing up this uncertainty.

The Action of Garlic in Tuberculosis.

The claim was made some years ago by Carazannis, an Italian investigator, that the ordinary garlic contained an ethereal oil which manifested a well-marked specific effect in tuberculous infection. The subject has again been made the subject of experiments in animals by Kathe (*Centralblatt für Kinderheilkunde*, 1907, No. 2), who administered a certain quantity of the juice to guinea-pigs daily. After three weeks the animals were twice subjected to an inhalation of dried and pulverized tuberculous sputum for a period of almost an hour. In both the control and previously treated guinea-pigs a tuberculous infection appeared, but strange to say in the latter group the mesenteric glands were not involved. Kathe explains this by assuming that the bacilli which were necessarily swallowed during the inhalations were destroyed by the oil of garlic in the intestinal tract, which acted as a local antiseptic, and whatever infection occurred took place through the medium of the respiratory passages. In another series the animals which had previously been treated with the garlic juice, received pure cultures of the tubercle bacilli subcutaneously. No inhibitive effect was apparently exhibited by the substance in these cases. The juice of the garlic, or rather its contained essential oil, therefore seems to manifest its antiseptic action only in the intestinal canal, and has no effect whatever on any tuberculous processes which may become localized in the lungs.

The Decomposition of Chloroform.

An ingenious device for automatically indicating decomposition occurring in chloroform intended for use as an anesthetic has been suggested by Breteau and Woog. It consists in making use of the indicator congo red for determining the development in the chloroform of even the minutest traces of hydrochloric acid. In order to do this conveniently a small disc of elder pith stained with a solution of congo red in absolute alcohol is placed in each bottle containing the chloroform. Normally the stained disc retains its color indefinitely, but if, as the result of the action of air, light, moisture, etc., decomposition begins, hydrochloric acid is set free and the indicator changes from red to blue. The chloroform then should be either discarded for internal use or be repurified. The *Lancet* states that it has tested this method and has found it extremely delicate.

Treatment of Inversion of the Uterus.

Among the interesting suggestions for the relief of this condition when it occurs after labor, is that made by Pinard, who advises the introduction of a rubber bag such as the de Ribe, in order to return the organ to its natural position. He has successfully employed this method in five instances. In the last, which occurred in a multipara with an easy forceps delivery, only a moderate amount of traction was made on the placenta, but the act resulted in a complete inversion of the uterus. The latter was readily reduced, and the patient suffered very little shock, but a few days later the organ again became inverted during an attempt to empty the bladder. Efforts at manual reduction then failed, and a de Ribe's bag was introduced and inflated with air. Its pressure caused no pain whatever, and within twenty-four hours the uterus returned to its normal position. Pinard in recommending the bag for this purpose states, however, that it should not be allowed to remain in place for more than eight hours.

News of the Week.

Medical Milk Commissions.—The Medical Milk Commissions in the United States will hold a conference at the St. Charles Hotel, Atlantic City, N. J., on Monday, June 3, 1907. There will be three sessions: 10 o'clock A.M., 3 o'clock P.M., and 8 o'clock P.M. The main objects of the conference are to determine the scope of the Medical Milk Commission, harmonize its working methods and requirements, and establish uniform standards for certified milk. Any member of a regularly organized Medical Milk Commission may be, by virtue of such membership, a member of the conference. The temporary chairman is Dr. Henry L. Coit, 277 Mt. Prospect avenue, Newark, N. J., and the temporary secretary is Dr. Otto P. Geier of 124 Garfield place, Cincinnati, Ohio.

The "Index Medicus."— The Carnegie Institute of Washington, which has been bearing most of the cost of publication of the present series of the *Index Medicus*, announces that as the journal has not met with the support from the profession that was hoped for, unless it appears that the *Index Medicus* is of greater service to the medical profession and can help to support itself to a greater extent than in the past, it may become advisable to discontinue its publication. The *Index Medicus* was established in 1879, under the editorship of Dr. John S. Billings and Dr. Robert Fletcher, and was discontinued in 1899. The present series began with the number for January, 1903. Each number of the *Index* presents the literature of the month named on its cover and is issued as early as possible in the succeeding month, time being allowed for the arrival of foreign journals. The present editors are Robert Fletcher, M.D., and Fielding H. Garrison, M.D. Communications relative to subscrip-

tions should be addressed: Carnegie Institution of Washington, Washington, D. C. Communications concerning the bibliography should be sent to: Editor of *Index Medicus,* Army Medical Museum, Washington, D. C. No numbers of the first series can be supplied. Copies of later volumes and numbers are available. The volume for 1905 contains 1,241 pages and the index to the volume 208 pages, the latter in double and triple columns.

Civil Service Examinations.—The State Civil Service Commission will hold an examination June 15, 1907, for Resident Physician, State Hospital for Crippled and Deformed Children, salary, $900 and maintenance. The last day for filing applications for this position is June 8. Full information and application forms may be obtained by addressing Mr. Charles S. Fowler, Chief Examiner of the Commission, at Albany.

American Surgeons Honored.—The Russian Surgical Society recently celebrated in St. Petersburg its twenty-fifth anniversary and elected as honorary members a number of foreign surgeons, among them being Professor Roentgen of Munich, Dr. William H. Watson of Utica, N. Y., and Dr. Nicholas Senn of Chicago, Ill.

Gifts to Mount Vernon (N. Y.) Hospital.—Mrs. James A. Bailey has contributed the sum of $10,000 to the maintenance fund of the Mount Vernon Hospital, and has announced her intention of donating a further sum of $100,000 for the erection and equipment of a new hospital building to be placed next to the present structure and called the Bailey Memorial Hospital. Mrs. Bailey has also promised to endow the new memorial hospital. By the will of the late Martin L. Sykes the Mount Vernon Hospital is to receive the sum of $5,000.

An Endeavor to Save the Lives of Christian Scientists.—A bill has been introduced into the legislature at Albany which amends the Penal Code by making it a felony for a person having in his charge, care, custody, or control a sick or disabled human being, to fail or omit to provide the sick person with the medical attendance of a competent licensed physician. If such person is unable to furnish a competent licensed physician he shall immediately notify the local board of health, and it shall be the duty of the board to furnish a physician with such medicines as may be prescribed.

Centenary of the College of Physicians and Surgeons.—The centennial celebration of the College of Physicians and Surgeons of this city is to be held in conjunction with the commencement exercises at Columbia University. On June 10 and 11 it has been planned to present to the visiting alumni an opportunity to see and inspect the modern methods of instruction and the present equipment of the College of Physicians and Surgeons. The laboratories and museums of physiology, anatomy, pathology, bacteriology, clinical pathology, and biological chemistry will be open for inspection, and the work in clinical branches at the Vanderbilt Clinic will be demonstrated. In addition there will be presented a number of clinical exercises in the several hospitals which will be conducted by the officers and professors in the school. On the evening of June 11 an alumni dinner will be held at Delmonico's, and on June 12 the commencement exercises will be held at the University and a general alumni luncheon will be given.

The Treatment of Pauper Cases.—At a recent meeting of the Champaign County (Ill.) Medical Society resolutions were adopted providing that in all cases operation fees and full fees for attendance should be charged for treating pauper patients on orders from supervisors.

Tonsillitis at Bryn Mawr.—Following a class celebration at which a loving cup was passed from mouth to mouth, twenty-eight students at Bryn Mawr College developed tonsillitis.

Plague in India.—The gravity of the plague situation in India is evident from a report stating that during the week ended April 13 there were 87,161 cases of plague and 75,472 deaths, an increase of 14,000 in the number of cases and 12,000 in the number of deaths from the previous week. During the six weeks ending May 11 the deaths reached a total of 451,892. From October, 1896, to December, 1906, the total deaths from the plague were 4,411,242, and during the first three months of the present year 495,000 deaths are known to have occurred. There has also been increased mortality from all other causes. The death rate for the whole of India has increased steadily for the last five years from 29 per 1,000 in 1901 to 36 in 1905.

Scurvy in Russia.—The report of the Medical Inspectors in the famine districts, made public on May 17, records the steady spread of scurvy in the famine provinces of Samara and Ufa and in the Turgai Steppes, Asiatic Russia. A large proportion of the patients are children. Since January 15, when scurvy first became menacing in Ufa Province, the cases officially registered have averaged 107 daily, but the average now is several times greater.

Opium Restrictions in China.—All the opium smoking dens in Foochow are reported to have been closed by the authorities, and it is declared that the Viceroy of Pe-chi-Li Province has ordered all the local magistrates to establish "anti-opium shops" for the reception of poor and needy opium smokers, who will be induced to live in these places free of charge with a view to curing themselves of the habit.

Cancroin Case Non-suited.—Prof. Adamkiewicz of the University of Cracow, who is the inventor of the so-called cancer cure, "cancroin," some time ago brought suit against a prominent chemical manufacturing firm, alleging breach of contract. Adamkiewicz had made a contract with the chemical firm providing that this should have the commercial rights to the remedy for a period of twenty-five years, and that in case of unjustified violation of the contract the offending party should pay a penalty of 250,000 marks. Adamkiewicz sued the firm for this sum, for after a short period it abandoned the manufacture and sale of the remedy. The testimony of the experts called was unfavorable to the remedy and the case was non-suited by the court.

Dr. C. W. Pilgrim has resigned as president of the New York State Lunacy Commission and has been reappointed to his old post as superintendent of the Hudson River State Hospital.

Defeat of Pasteurization.—The Aldermanic bill requiring the pasteurization of all milk sold in the city which fails to reach a determined standard of purity was defeated by a small majority on Tuesday of this week.

American Laryngological, Rhinological, and Otological Society.—The thirteenth annual meeting of this organization will be held in this city on May 30, 31, and June 1, 1907, at the Academy of Medicine. The president is Dr. Wendell C. Phillips

of this city, and the secretary Dr. Thos. J. Harris of this city.

International Laryngo-Rhinological Congress.—It has been decided by those in charge of this congress, which is to be held in Vienna April 21 to 25, 1908, to include an exhibition of instruments, apparatus, books, etc., relating to laryngology and allied branches, and all those interested are invited to take part in this undertaking. All communications, accompanied by an exact description of the objects to be exhibited, are to be addressed not later than December 31, 1907, to the Secretary of the Congress, Professor Dr. Michael Grossmann, Wien, IX., Garnisongasse 10, in order that they may be correctly catalogued. Exhibits should be sent not later than February 15, 1908, to Herrn Ober-Ingenieur Jaroschka, Inspektor des k. k. Universitätsgebäudes in Wien, with whom they will be deposited. All objects will be insured against theft, fire, and damage. The import and export of exhibits has been declared as duty-free by the authorities. Exhibitors are requested to apply to the secretary for all information in connection with the exhibition.

Utah State Medical Association.—At its annual meeting held in Salt Lake City on May 8 this organization elected officers as follows for the coming year: *President*, Dr. H. D. Niles of Salt Lake; *Vice-Presidents*, Dr. C. G. Plummer of Salt Lake, Dr. E. H. Smith of Ogden, and Dr. H. A. Adamson of Richmond; *Secretary*, Dr. W. S. Ellerbeck of Salt Lake; *Treasurer*, Dr. J. H. Harrison.

Nebraska State Medical Association.—Officers were elected as follows at the annual meeting of this association held in Omaha on May 9: *President*, Dr. H. Gifford; *Vice-Presidents*, Dr. M. L. Shaw and Dr. Inez E. Philbrick; *Secretary and Treasurer*, Dr. H. W. Orr.

Bristol South (Mass.) District Medical Society.—At the annual meeting of this society, held in New Bedford, officers as follows were elected: *President*, Dr. Garry Hough; *Vice-President*, Dr. W. T. Learnard of Fall River; *Secretary and Treasurer*, Dr. A. J. Abbe of Fall River.

Middlesex East (Mass.) District Medical Society.—Officers as follows were elected at the meeting of this organization held at Stoneham May 9: *President*, Dr. C. W. Harlow of Melrose; *Vice-President*, Dr. F. E. Park of Stoneham; *Secretary*, Dr. H. A. Cole of Winchester; *Treasurer*, Dr. Chas. Dutton of Wakefield.

Hampshire Country (Mass.) Medical Society.—At the meeting of this association held in Northampton on May 10 officers as follows were elected: *President*, Dr. J. G. Hayes of Williamsburg; *Vice-president*, Dr. G. B. Thayer; *Secretary*, Dr. A. G. Minshall; *Treasurer*, Dr. H. A. Hoadley.

The Mississippi Antituberculosis League.—At its session held in Meridian on May 10 officers for the ensuing year were elected as follows: *President*, Dr. R. W. Shipp of Gulfport; *Secretary*, Dr. R. F. Hall of Clinton; *Treasurer*, Dr. D. P. Price of Boonville. The next meeting will be held at Gulfport on the second Wednesday in January.

National Association of U. S. Pension Examining Surgeons.—At the sixth annual meeting of this organization held in Washington on May 8 officers were elected as follows: *President*, Dr. G. Lane Teneyhill of Baltimore; *Vice-Presidents*, Dr. Porter Farley of Rochester, N. Y.; Dr. J. W. Houston of Lancaster, Pa.; Dr. D. S. B. Armsburg of Chicago, Ill., and Dr. M. P. Creel of Center City, Kan.; *Secretary*, Dr. P. Y. Eisenberg of Norristown, Pa.; *Treasurer*, Dr. Chas. H. Glidden of Little Falls, N. Y.

Texas State Medical Association.—Officers were elected as follows at the meeting of this society held at Mineral Wells on May 9: *President*, Dr. C. E. Cantrell, Greenville; *Vice-Presidents*, Dr. H. S. Barnes, Tulia; Dr. D. S. Weir, Beaumont, and Dr. A. B. Small, Waxahachie; *Treasurer*, Dr. C. A. Smith, Texarkana; *Secretary* for three years, Dr. I. C. Chase, Fort Worth.

Kansas State Medical Society.—The election of officers for this society held at the annual meeting in Kansas City on May 11 resulted as follows: *President*, Dr. J. E. Sawtell, Kansas City; *Vice-Presidents*, Dr. T. Kirkpatrick, Garnett; Dr. M. E. Jarrett, Fort Scott, and Dr. G. M. Gray, Kansas City; *Secretary*, Dr. C. S. Huffman, Columbus; *Treasurer*, Dr. L. H. Munn, Topeka.

American Laryngological Association.—Officers for the ensuing year were elected as follows by this organization at its closing session in Washington on May 9: *President*, Dr. H. S. Birkett, Montreal; *Vice-Presidents*, Dr. J. Payson Clark, Boston, and Dr. J. E. Rodes, Chicago; *Secretary and Treasurer*, Dr. James E. Newcomb, New York; *Librarian*, Dr. J. H. Bryan, Washington.

Iowa State Homeopathic Medical Association.—This association at its meeting held in Iowa City on May 9 elected officers as follows: *President*, Dr. T. F. H. Sprong of Sioux City; *Vice-Presidents*, Dr. Genevieve Tucker of Davenport, and Dr. R. W. Homan of Webster City; *Secretary*, Dr. Gardiner A. Huntoon of Des Moines; *Treasurer*, Dr. M. A. Royal of Des Moines.

The Late Dr. Solly.—At a meeting of the Board of Directors of the National Association for the Study and Prevention of Tuberculosis, held in Washington May 7, 1907, the following resolutions on the death of Dr. S. E. Solly, a former member of the board, were unanimously adopted: *Whereas*, The Directors of the National Association for the Study and Prevention of Tuberculosis have learned with sincere sorrow of the death of their colleague, Dr. S. E. Solly of Colorado Springs, and *Whereas*, by his great medical ability and no less by his unusual personal charm he had both endeared himself to them and proven a wise counsellor in their deliberations, therefore be it *Resolved*: That in his death they have lost a member whose place cannot easily be filled; one whose distinguished professional attainments did honor to this body to which he belonged and whose remarkable gifts of heart equally with those of mind made him ever welcome in their midst; and be it further *Resolved*: That the secretary be directed to send a copy of these resolutions and assurances of our deep sympathy to this bereaved family; that a copy be spread on our minutes, and that they be published in *Colorado Medicine*, the official organ of the Colorado State Medical Society, in the *Journal of the American Medical Association*, in the MEDICAL RECORD, and in the *Journal of Outdoor Life*, the official organ of the National Association for the Study and Prevention of Tuberculosis.

Obituary Notes.—Dr. ISAAC M. RIDGE of Kansas City died on May 7 at the age of eighty-one years. Dr. Ridge was born in Adair County, Ky., and in 1834 was brought by his family to Lafayette County, Mo. Fourteen years later, after receiving his degree from Transylvania University, Lexing-

ton, Ky., he began the practice of medicine in Kansas City. He had retired from active work many years ago.

Dr. Albert H. Humes of Boston died suddenly at his home in Woburn on May 8 at the age of fifty-two years. He was born in Douglas and was a graduate of the New York College of Physicians and Surgeons. He had practised in Boston about twenty years.

Dr. Charles Williams Ottley of Atlanta, Ga., died in Baltimore on May 9 at the age of thirty-six years. Dr. Ottley was a graduate of Princeton and Johns Hopkins University. For four years he had been a medical missionary to Turkey.

Dr. Noyes N. Learnard of Charlestown, Mass., died on May 11 at the age of eighty-two years. He was a native of Vermont and had practised in the south end for many years.

Dr. John G. Broadnax of Greensboro, N. C., died suddenly of heart disease on May 9 at the age of seventy-five years. He had served as Confederate army surgeon through the Civil War and was one of the oldest practising physicians in that part of the country.

Dr. John M. Harlow of Woburn, Mass., died on May 13 at the age of eighty-seven years. He was born in Whitehall, N. Y., and was graduated from the Jefferson Medical School in Philadelphia in 1844. After practising for fifteen years in Cavendish, Vt., he went to Minnesota for his health and some years later settled in Woburn. He had held numerous public positions, both in the municipal and the State governments, and was a trustee of the Massachusetts State General Hospital.

Dr. Charles A. Foster, physician to the New York State Hospital for the Insane on Ward's Island, died suddenly on May 19 at the age of fifty-eight years. He had formerly been a resident of Saugerties, N. Y.

Dr. Eugene Wiley died at Philadelphia on May 17 at the age of sixty-two years. He was graduated from Jefferson Medical College in the class of 1860.

Dr. David H. Goodwillie of Yonkers, N. Y., died on May 17 at the age of seventy-four years. He was a native of Barnet, Vt., and received his medical education at the college of medicine of the University of Vermont and in Edinburgh, Scotland. He had practised for many years in this city as a laryngologist and was a member of numerous medical organizations. He retired from active work about six years ago and went to Yonkers to live.

Dr. Charles Neill of Toronto died suddenly on board a railroad train near Chicago on May 15 while on his way to Texas for his health.

Dr. J. A. Cummings of Omaha, Neb., died of pneumonia on May 12 at the age of thirty-five years.

Dr. Shuler Craft of Denver, Col., died of pneumonia on May 12. Dr. Craft was born in Fort Wayne, Ind., in 1878 and was graduated in medicine from the University of Denver two years ago.

Dr. John C. Sturgis of Seattle, Wash., died after a brief illness on May 6. He was born at Charleston, Ind., in 1858 and received his medical degree from the University of Michigan. After practising for a time in Indiana he went to Seattle in 1889.

Dr. James E. Casey of Mohawk, N. Y., died on May 19 at an advanced age. He was graduated from the Albany Medical College in 1855, and had practised in Herkimer county for over fifty years.

Correspondence.

DR. KNOPF MISQUOTED.

To the Editor of the Medical Record:

Sir:—I take this method of trying to correct the outrageously false impression given by many of the newspapers of the country of the statement of Dr. Knopf before the Clinical and Climatological Section of the National Association for the Study and Prevention of Tuberculosis, at its recent meeting in Washington. I was present as chairman of the section when Dr. Knopf made his remarks. He was within a few steps of where I sat, and I was paying close attention to his remarks. I understood him, and all others with whom I have spoken on the matter since the meeting understood him, to state plainly the need of using morphine to relieve painful symptoms in the last stage of the disease. Any physician who heard the remarks must have known that the morphine was used not for shortening life, but solely for making it easier, and every physician also knows that life is generally prolonged by that sort of treatment. As I have expressed myself before this regarding the shortening of lives of seriously sick people, I need hardly say that had Dr. Knopf advocated anything like the administration of large or dangerous doses of morphine I would have vigorously protested. I hope that physicians who are asked about the matter will contradict the newspaper statements and seize the opportunity of explaining the real object of the treatment.

George Dock, M.D.

Ann Arbor, Mich., May 17, 1907.

OUR LONDON LETTER.

(From Our Special Correspondent.)

BENINDEN SANATORIUM—BILL TO PREVENT PRACTICE BY COMPANIES—SURGICAL AFFECTIONS IN THE RIGHT ILIAC REGION—LOCAL ANESTHESIA FOR OPERATIONS FOR GOITER—ADDISON'S DISEASE—DEATHS UNDER ANESTHETICS IN RELATION TO LYMPHATISM—DEATH OF MARKHAM SKERRITT.

London, May 3, 1907.

The Princess Christian of Schleswig-Holstein opened the first part of the new self-supporting sanatorium for working class persons suffering from tuberculosis. I have previously given you particulars of this movement. Nineteen beds are already occupied, and when completed the institution will have 200. Sir Clifton Robinson, one of the vice-presidents, said he would like to see a supplementary organization, by means of which those who had been brought into the country and cured would be enabled to settle for good on the land, instead of returning to the dense centers of overcrowded towns. There would then be the best chance of their cures being permanent.

The bill to prevent the evasion of the medical acts by companies engaging in practice has passed the second reading in the House of Lords with the blessing of the Government, who, Lord Crewe said, are of opinion that it meets something which nearly approaches a public scandal. A doctor should be personally responsible, and not able to shelter himself behind a company. A doctor who allowed himself to be employed by a company would be a derelict of the profession, and it was better not to encourage this sort of practice by companies. The bill, and the parallel bill respecting dental companies, having passed this stage, some are hoping that both may become law. But note the reasoning of the Government spokesman. He had no notion of protecting the profession, or even the public. It was just as well not to encourage companies, but he had not the courage to declare such companies swindlers or impostors. Free trade must deal gently even with such combinations—much as the public may suffer.

At the Medical Society of London, Mr. Waring read a paper on certain iliac affections which simulate more or less closely appendicitis. He restricted his remarks to cases of acute or subacute attacks of pain beginning mostly in the umbilical or epigastric regions, sudden in onset, and localized later in the right iliac fossa, with nausea or vomiting, and muscular rigidity of the lower part of the wall of the abdomen on the right side. He related two cases of acute infective osteomyelitis of the ileum, where it forms the deep boundary of the fossa. So tuberculous, deep glands in the fossa might last some time without decisive symptoms. Glands which became the seat of secondary infection might also imitate appendicitis; so might abscess secondary to a septic state of the right broad ligament or Fallopian tube. In one instance adenopapilloma of the mucous membrane of the cecum around the opening of the appendix set up the symptoms. Hematoma of the right ovary at an early stage, a displaced right ovary, injury to

the region, breaking down of a malignant growth, rupture of a blood-vessel, and other affections, had given rise to difficulties. In all cases it was necessary to ascertain, if possible, the precise mode of onset and the chronological sequence of the symptoms, as well as to consider carefully all the facts available in connection with the previous history, to make a complete clinical examination of the abdomen and pelvis, and, if still in doubt, to examine the blood.

Mr. Lynn Thomas described a mode of producing local anesthesia he had found effectual for removing goiters. He draws his scalpel along the line of Kocher's collar incision so lightly as to cause a thin red line, under which he injects one to two drams of 1 per cent. cocaine solution, thus forming a subcutaneous ridge from end to end. The collar incision is then made and the operation completed with very little loss of blood, every exposed vessel being clamped by two Kocher's forceps and divided between them, as it appears.

At the Medico-Chirurgical the paper was on Addison's disease, by Dr. Grunbaum, and chiefly as to early diagnosis. He said the two chief symptoms, asthenia and pigmentation, might both or either be present in other diseases. He found that oral administration of suprarenal extract did not raise the blood pressure of healthy persons, but that a rise followed this medication when there was renal inadequacy. In doubtful cases three-grain doses *ter die* for three days could be utilized, and if there was a distinct rise it was very suggestive of Addison's disease in the absence of valvular heart disease. The opsonic index after inoculation with tuberculin often pointed to a tuberculous condition of the adrenals.

Dr. Rolleston agreed as to the effect of the extract given by the mouth on the blood pressure, and said that a condition of inadequacy existed short of Addison's disease, and might perhaps be thus indicated. He attached little importance to pigmentation of the mouth, which might be induced by bad teeth. Dr. F. P. Weber said prolonged asthenia after infection suggested Addison's disease, and told of such a case, when months after influenza pigmentation took place and death occurred in a syncopal attack, both suprarenals being found at the postmortem caseous and matted across the aorta. Dr. Tooth remarked that bromide occasionally caused pigmentation. Dr. Ewart referred to the variation in the symptoms of Addison's disease. In one case asthenia was most prominent, in another pigmentation, the latter being less severe than the former. He related one case in which pigmentation was present for many years.

In his reply, Dr. Grünbaum said he had not met with a case of pigmentation produced by bromide. If the suprarenals were removed in animals pigmentation did not follow, but if they were damaged or infected it did. In rapid destruction of them, as by cancer, there was no pigmentation. The more rapid the disease the less pigmentation occurred. In a case in which only the solar plexus was involved there was pigmentation on the trunk more than on the limbs.

The death of a young baronet under an anesthetic (chloroform and ether combined) was the subject of an inquest last Friday, when a verdict of death by misadventure was returned. The evidence showed that Sir H. L. Huntington was twenty-one years of age, 6 feet 3½ inches in height, and was thought to have outgrown his strength, but was in good health. Dr. Frankish said that two years ago he had a mild attack of diphtheria, but made a good recovery. He prepared him for the operation and called in Dr. Hilliard to give the anesthetic. On the first incision the patient stopped breathing and changed color; he recovered at once, and the operation was resumed, but before it was completed the pulse stopped, the breathing became shallow, and artificial respiration was resorted to without effect. Dr. Spilsby, pathologist of St. Mary's Hospital, made the post mortem and found fatty degeneration of the walls of the heart with a little dilatation, a very unusual thing in a young man. He added that "he also found the status lymphaticus, a condition that only recently engaged the attention of pathologists in this country, and not recognizable during life, although its subjects seemed specially liable to sudden death from trivial causes." In this case death was due to syncope. In reply to a question, he said the condition named represented a new danger in anesthesia. Dr. Hilliard, asked if he had seen such a death, said he had never seen a death under anesthesia, although he had dealt with 12,000 cases.

Another inquest was held on Saturday which may be compared with the above. It was on a boy of nine, who died at Guy's Hospital under ethyl chloride. The Coroner, Dr. Waldo, said he knew of twenty-two fatalities, and had held four inquests following deaths from this anesthetic. The clinical assistant said three cubic centimeters were given. Deaths under ethyl chloride were one in 3,000. There were less under ether or chloroform. It was given in this case, as the operation was a short one—appendicitis. The house physician said 3 c.c. was a careful dose. He had made a post mortem and found fatty degeneration of the heart. The direct cause of death was the anesthetic, but the poor condition of the child had a bad effect. Verdict, misadventure and no blame to anyone.

In connection with the foregoing cases I am reminded of some remarks made last month at the Dublin Academy, when Dr. Peacocke related a case of cerebrospinal meningitis in a child of five, the subject of lymphatism. The attack was fatal in eleven hours. At the post mortem Dr. Peacocke found very large thymus, enlarged mesenteric glands, hypertrophied Peyer's patches, and solitary follicles, and on section of the spleen prominence of the malpighian corpuscles. The idea of lymphatism did not occur during life, for there were no symptoms, and the only sign likely to be detected was such dullness as the large thymus might cause. Dr. Kirkpatrick said the condition of lymphatism had been found in a number of cases in which sudden death had occurred during the administration of anesthetics, so that its recognition if possible would be of practical importance. Professor White thought lymphatism had much to do with infection. Most fatal cases of cerebrospinal meningitis had had trouble with adenoids, and it was possible they were infected through the lymphoid tissue at the back of the nose, where there were a number of diplococci in some healthy persons. It was difficult to distinguish some of these organisms from that of cerebrospinal fever. In the only case he had examined post mortem in the present epidemic lymphatism existed.

Bristol is mourning the loss of the senior physician to her General Hospital, Dr. Markham Skerritt, who died on Monday and was buried yesterday amid signs of the city's regret for one who had served her long and faithfully. Dr. Skerritt was a man of great attainments. He took the B.A. of London University in 1868, proceeding to M.B. and B.S. with honors in 1873, and M.D. the next year. In his college course he took numerous prizes and the chief scholarship. At the University he was gold medalist in medicine and obstetrics at both the M.B. and M.D. examinations. In 1875 he was elected physician to the Bristol Hospital, and continued to serve it for the rest of his life. He became one of the most distinguished consultants in the west of England. A member of the London College of Physicians in 1876, he was elected a Fellow in 1885, Bradshaw Lecturer in 1897, and Councillor in 1904. He served the chief offices in various medical and scientific societies, and contributed valuable communications to them, as well as to the journals. He was Examiner in Medicine for the R. A. M. C. For more than a quarter of a century he was Professor of Medicine and Dean of the Medical Faculty in the University College of Bristol. He resigned these and some other appointments in 1905, having some time previously lost his daughter and only child, and his wife having begun to lose her sight. He was an active man, and used to hunt until his bereavement. Modest and rather reserved, he was destitute of push, and attained his great position by merit and the good will and affection of his patients and his fellow citizens by his kindliness and consideration for all. He was in his usual health until Sunday week, when he felt indisposed, on the Wednesday he took to his bed, and was found to be suffering from pneumonia of a severe type, which terminated fatally on Monday, in his fifty-eighth year. The city and the profession join in deep sympathy with his widow.

THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

MANILA, P. I., March 1, 1907.

THE fourth annual meeting of the Philippine Islands Medical Association was opened most auspiciously on the afternoon of February 27. Delegates from China, Japan, and Hongkong were in attendance, and the meeting promised to be one of the most successful that had yet been held. The great interest manifested, not only by medical men, but by the laity, and the governments in nearby countries, was a great inspiration to the medical men of the Philippine Islands who are engaged in combating the diseases that prevail here, and who are making a study of the many problems connected with tropical medicine.

The first session was a general one, and not devoted to strictly scientific purposes. The Governor-General of the Philippine Islands made the opening address, and stated, in substance, that it gave him great pleasure to meet the men who are engaged in organized efforts to combat disease in the tropics. He said he felt that he expressed the feeling of the community when he stated that everyone is deeply appreciative of the fact that many of the medical men here were sacrificing their time, and in some cases even their lives, in the interests of their fellow men. He said that

it was with particular pleasure he noted that scientific men who were born and reared in the Orient, and thoroughly conversant with the best means of combating the diseases which have heretofore made severe inroads into Oriental life, had come here to take part in this meeting of the Association. He invited particular attention to the fact that up to twenty-five years ago the medical man was not an important political factor in the community, because he devoted himself so exclusively to the interests of his patients that he did not seem to find time to form medical associations which would make his influence felt, but by the general organization of the medical profession throughout the civilized world the influence of the medical man was now felt in almost all legislative bodies, and that many measures which had found their way into the statute books during this period had done much to improve public health and lessen diseases, and was ample testimony of the value of medical organization. It was by such unions that the great opposition which was often encountered in enforcing sanitary regulations was successfully met, and that furthermore it gave him great pleasure to state that his experience with medical men, which had been a large one, had shown conclusively that even though the faithful discharge of public duties often led to much unpleasantness, yet he had never found that the medical man shirked this responsibility.

The next feature on the program was an address by Dr. Paul C. Freer, the President of the Association, entitled: "A Consideration of Some of the Modern Theories on Immunity" Dr. Freer took the ground that the indications now are that the future progress in immunity must be rather through chemistry than through biology. He stated that after having given this subject most careful study during the past few years, and by observation of natural and acquired immunities under various environments, he felt convinced that in the future the preservation of public health must be looked for more through vaccines and serums than through hygiene. His address was a very able one and will be published in full in the Philippine *Journal of Science*.

In the evening, at 8:30, Colonel John Van R. Hoff, Assistant Surgeon General of the United States Army, gave a picture talk on "Russian Sanitary Ways and Means in Manchuria, 1905." The data, statistics, and other evidence which he presented came as a matter of surprise to many of the audience, because it seems to have become the generally accepted view that the Russians did very little in a sanitary way. The evidence presented by Colonel Hoff showed conclusively that practically as favorable results were obtained by the Russian medical officer as by the Japanese medical officer. The proportion of disability and deaths due to disease, which has heretofore obtained in previous wars, was reversed in the case of the Russians just as in that of their opponents; three men dying on the field of battle as against one from disease.

The next on the program was a paper entitled "Mosquitos in the Philippines, Their Breeding and Habits, with Methods for Their Suppression," by Charles S. Banks, Entomologist, Biological Laboratory, Bureau of Science. His exhibition of the various forms of mosquitos was most excellent. The specimens showed great care in their preparation. His talk was also profusely illustrated, showing the places in which mosquitos breed. He stated that the two mosquitos that caused the greatest discomfort to the residents of the Philippines were the stegomyia in the daytime and the *Culex fatigans* at night. In Manila practically no anopheles are encountered.

On the evening of February 28 Dr. R. P. Strong gave a dinner in honor of the foreign guests, and to the members of the society. Among the foreign guests present were Dr. J. M. Atkinson, the Honorable Principal City Medical Officer at Hongkong; Dr. Kannosuke Miyajima, Delegate from His Imperial Japanese Majesty's Government; Dr. Sia Tien Pao, Delegate from His Imperial Chinese Majesty's Government; General Wood, and the chief medical officers of the Army, Navy, and Public Health and Marine Hospital Service were among those present. The dinner was most successful and will probably be very productive in cementing those friendships and unions which are so necessary and helpful to a better understanding among medical men.

At the third session, held on February 28, the first paper read was entitled "The Prevalence of Hydrophobia in the Philippine Islands," by Dr. F. W. Dudley, St. Paul's Hospital. The writer stated that the object of his paper was to show the prevalence of hydrophobia in the Philippine Islands, and the necessity for making available, modern prophylactic treatment for the purpose of combating it. He posted notices in practically every pueblo in the Philippine Islands and corresponded with all medical men from whom he could expect to obtain some data, and in this way he was able to collect, during the period from March 1, 1902, to February 28, 1907, 36 cases in human beings, 225 cases in dogs, 1 in a cat, 1 in a carabao, 2 in horses, 10 in pigs, 3 in rats, and 1 in a monkey. In his opinion, the incubation period in the Philippine Islands was rather long. One authentic case was reported within ten days, but there were also three authentic cases with incubation periods of eight, nine and ten months respectively. During the month of February a dog bit a child in the city of Manila. The dog was immediately killed and taken to the Bureau of Science for investigation but no Negri bodies were found nor have any symptoms appeared in the rabbits which were inoculated from material taken from the dog. He had nothing particularly new to offer in the way of treatment. He recommended that the Pasteur method should be employed, and stated that the same is not available in the Philippine Islands. In conclusion, he urged that the Government make available immediately a modern prophylactic treatment for this disease.

The next paper was entitled "Clinical Observations on Uncinariasis," by Dr. Edwin C. Shattuck, Attending Physician, Bilibid Prison. He stated that during the past few months 849 inmates, taken in the regular order in which they were admitted to the prison, were examined. Of these, 243 were found to have uncinaria, or about 24 per cent. They occurred in prisoners who were received from practically all the different provinces in the islands, which shows that the distribution of the disease must be widespread. He reported that at first thymol was used in the treatment, but later the treatment by eucalyptus oil, as recommended by Phillips in the London *Lancet*, February 3, 1906, was adopted, which consists of 2.5 c.c. of eucalyptus oil, 3.5 grams of chloroform, and 40 c.c. of castor oil. This is divided into two doses, given on an empty stomach, at intervals of one-half hour. He increased the dosage to 30 c.c. with excellent results. The use of the oil is preceded by a dose of magnesium sulphate, and two hours after the last dose of oil another dose of magnesium sulphate is administered. After this has acted, light diet is permitted. Of the 345 cases treated with eucalyptus oil, 270 only required one treatment, 58 two and 16 three, and in one case four treatments were necessary before the stools were negative.

The next paper, "*Vectator americanus* in Natives of the Philippine Islands," was read by Lieut. Clarence L. Cole, Assistant Surgeon, U. S. Army. His experience was practically that of other observers in this field.

Then followed an address entitled "Methods of Combating Plague in Hongkong," by Dr. J. M. Atkinson, the Honorable Principal Civil Medical Officer of Hongkong. He stated that the methods of combating plague in Hongkong were now practically the same as those employed in most civilized states where this scourge exists. He brought out one new point, however, that is, that in a house where plague has been encountered guinea pigs are now set free, with the idea of having any fleas that may be about the premises collect upon the guinea pigs and capturing them by this method. Otherwise the usual disinfection of premises, with the obliteration of the rat-runs and general cleanliness, were carried out, the cases themselves being isolated at the plague hospital.

The next paper, entitled "The Physiologically Active Constituents of Some Philippine Medicinal Plants, Arrow Poisons, and Fish Poisons," by Dr. Raymond F. Bacon of the Chemical Laboratory of the Bureau of Science, was most instructive and by far the most exhaustive treatise that has appeared upon the medicinal plants since American occupation. The paper will be published in full in the *Phillippine Journal of Science*.

The last paper of the Third Meeting, entitled, "Native Medicinal Plants," was read by Elmer D. Merrill, Botanist, Bureau of Science. He stated that Philippine systematic botany has been in a chaotic state since the publication of Blanco's "Flora de Filipinas," and that in 1837, due to the fact that Blanco and some of his successors, notably Lanyos, Fernandez-Villar, and Naves, had no conception of the geographical distribution of species, and credited to the Philippines plants that did not grow in the archipelago, and accordingly, referred to extra-Philippine species a great number of local plants which were really very distinct from those which are described by various authors for the Asian continent and Malaya Subsequent workers, however, Vidal among them, did much to clear up this confusion, but after his death, in 1869, very little work in Philippine flora was done up to the advent of the Americans, who resumed the work in 1902. He stated that the two essentials for a thorough revision of the Philippine botany were a complete herbarium and a representative botanical library, and both of these were supplied by the Bureau of Science. He stated that sufficient material and data was already on hand to warrant the commencement in the near future of a publication on the flora of the Philippines that will be fairly complete and accurate, but

that such a work must treat of from eight to ten thousand different species of plants, and it would of necessity be greatly delayed in its compilation. He stated that many official and officinal plants were found in the Philippines either wild or cultivated, and that some of these were of especial interest, the principal ones being castor oil, strychnos ignati, otherwise known as St. Ignatius bean, and that the latter contains a larger proportion of strychnine than the strychnos nux vomica, from which it is usually obtained, and also that this is only found in the Philippines. He laid special stress upon the fact that most pharmacopœias erroneously referred to it as Chinese. Among others, he mentioned papaya, pomegranate, and the tamarind. He also stated that many of the plants would no doubt be commercially profitable if pains were taken to exploit this feature of the work.

Progress of Medical Science.

New York Medical Journal, May 11, 1907.

Unrecognized Diphtheria in Children.—I. Friesner calls attention to the fact that nasal diphtheria in children is very often overlooked. The patient does not seem very sick, has but a slight rise in temperature, not much change in pulse or respiration and may eat well. Often these children are credited with only a cold in the head. Occasionally the nasal discharge is confined to one side and the nasal vestibule on that side, together with the lip, is red and slightly swollen. The cervical glands are not always enlarged. There is as a rule a discharge of yellow, glairy mucus, which may later become greenish. Sneezing may occur, but it is not as common as in coryza. In fact, the discharge and lip discomfort are the symptoms principally complained of. In the early stages examination of the nares shows only an acutely inflamed mucosa. Later, as the disease develops, a more or less typical membrane develops. The grave danger of such cases both to the patient and those about him render careful bacteriological examination necessary so that if the disease proves diphtheritic the proper precautions may be taken. Two illustrative cases are detailed. The author thinks that careful examination of the nose in sick children is just as important as the examination of the throat, which is now so regularly done.

Danger of Fire in Formaldehyde Disinfection.—C. H. LaWall calls attention to the dangers attending the modern method of disinfection by the formalin-permanganate plan, stating that on several occasions the mixture has been known to take fire spontaneously. In the formalin-permanganate method it has been customary to use two parts of formalin to one part of permanganate, adding the latter to the former and quickly leaving the room before the violent evolution of gas which shortly takes place has time to affect the operator. Working with quantities in some cases as high as one pound of permanganate, the amount of heat developed must be very great, and if there are any uncertain factors present, such as organic matter in the container which has been imperfectly cleaned, the danger of possible ignition is that much greater. The flame which has appeared on these occasions of combustion has been of a pale blue appearance, reaching several feet in the air from the container. The gas may be ignited from a 40 per cent. solution of formaldehyde by simply heating it and applying a match to the surface after ebullition has begun, and when the formalin-permanganate disinfection proportions are used in as small a quantity as one ounce of formalin and one-half ounce of permanganate, using a beaker for a generator, the flame of the ignited gas has been observed to have a length of more than one foot. In view, therefore, of the uncertainty regarding the cause of the ignition of the vapor in these observed cases and in recognition of the hitherto overlooked fact that formaldehyde vapor is very inflammable, it would be well to practise this method of disinfection with the precautionary measures of using small quantities of the ingredients (not over one-quarter or one-half pound of permanganate to a charge) in several containers, surrounding these containers with larger ones containing water, being careful to extinguish all gas jets, pilot lights, fire, and other possible causes of ignition, and keep the generators away from the sides of the room where a flame might be communicated to inflammable material. It is not believed by the writer that this method of disinfection need necessarily be abandoned, but it is essential that its limitations and dangers be not overlooked in its future use.

Appendicitis in Pregnancy.—H. N. Vineberg calls attention to this subject and gives some interesting statistics. He refers to the figures taken from the Mt. Sinai Hospital records covering a period of eight years. During this time there were 2,003 cases of appendicitis, 731 occurring in females. The association of pregnancy occurred in only nine cases. Two of these were not operated on and the diagnosis was based on clinical manifestations alone. The author therefore concludes that pregnancy does not predispose to the development of acute appendicitis. Differential diagnosis compels the consideration of the following possible conditions: Pain in the right side of the abdomen, which is not uncommon in pregnant women, rupture of an ectopic gestation sac at an early date, pyelitis of pregnancy, disease of the right adnexa, and typhoid fever. As regards treatment, the author declares that simply because pregnancy is present in an undoubted appendix inflammation one should not become panicky and consider that an immediate operation is always necessary. If the attack be a mild one, the patient can safely be treated palliatively, and one may wait for further developments. Should another attack occur within a short time and exhibit symptoms of greater severity, then, it seems to him, one should not defer surgical intervention, in the hope that further attacks will probably not recur. In an attack manifesting very acute symptoms one should act just in the same way as if pregnancy were not present. It is well to administer opiates freely during the first seven or eight days after the operation, so as to avert premature termination of pregnancy. If abortion or premature delivery becomes inevitable, one should follow the recognized method of treatment, of emptying the uterus completely. In the presence of a large appendicular or postcecal abscess, one should not attempt to do more than make an incision and employ drainage, disturbing the relation of the abscess cavity as little as possible. The absurd procedure advocated by some to empty the uterus by forcible intervention immediately after operation met with the fate it deserved, being universally condemned. With ordinary precaution the uterus, even in the abscess cases, will not expel its contents until after the lapse of several days, when the local conditions will be such that no danger will ensue from the altered relations of the abscess cavity that such an event will bring about.

Chronic Muscular Diseases of the Heart and Their Treatment.—T. Schott states that whatever may be the etiology of this class of maladies, in special processes of change in the substance of the muscle of the heart, and the collateral symptoms, one fact is common to all, the final incapacity of the heart to perform its work, which is commonly defined as "muscular insufficiency." This latter condition generally follows chronic myocarditis, be it with or without symptoms of angina pectoris, whether consequent to fatty changes of the heart, with or without valvular lesions, or whether it follow overexertion or the changes due to chronic poisoning through such substances as alcohol or nicotine. The author then goes on to describe the plans of treatment which are generally known as the Nauheim treatment, placing his reliance on weak and always carefully controlled thermal saline baths, containing carbonic acid. For a lower percentage of such patients the strongest form of the so-called effervescent flowing baths is very beneficial. On many occasions we have demonstrated this method of treatment and the marked success which attends it; and we have given proof that the effect of the baths is very similar to that of gymnastics, indeed, almost identical. The difference is merely that what the baths do by means of the sensory nerves the therapeutical exercises do through the motor nerves. The mechanical treatment presents itself under three different forms: Climbing exercises according to the teaching of Oertel; the Zander treatment by machinery; and the treatment by exercises with resistance and self-resistance as taught by his brother August Schott and himself. It is certain that, although the chief impulse toward this line of treatment was due to the labors of Oertel, the *Terrainkur* which he advocated is only fit for a limited number of patients suffering from heart disease. It is most effective in the case of fatty heart in a young patient with normal muscular strength and quality of blood. In such cases it has been used with the best results. In the fatty heart of later life, however, or in connection with other complaints, cardiac or others, the greatest caution should be observed. Climbing exercise has in such cases often proved to be a most dangerous remedy, and especially in complicated forms of chronic muscular disease of the heart, whether associated or not with valvular trouble. The author gives an interesting series of pulse tracings before exercise and after various forms of exercise, and details the clinical histories of five personal cases. He says that, according to his experience, we have a reliable criterion as to the advisability of the treatment in the following effects. After a mild brine bath (1 to 1 1-2 per cent.) of 93° to 95° F., five to eight minutes' duration, or after gymnastic exercises with slight resistance, the heart, even if there is a passing ac-

celeration, will beat more quietly and with stronger impulse, hence the pulse must be of a fuller volume and the breathing easier. If we obtain these results from the baths or the exercises and continue this treatment slowly and prudently, we can look for success even in long standing cases of muscular diseases of the heart.

Journal of the American Medical Association, May 18, 1907.

Adrenalin in Unilateral Renal Hematuria.—H. H. Young reports a case of unilateral renal hematuria, of supposed traumatic origin, of sixteen months' duration, and without evidence of nephritis, cured by adrenalin. Pain was constant on the right side, the side of the injury, but the hemorrhage was from the left kidney. The adrenalin was injected through the urethral catheter; only one injection of 6 c.c. of a 2 c.c. adrenalin in 8 c.c. of sterile water was given. Some pain was caused at first, but soon disappeared and the urine cleared up entirely in about ten days, and there was a general improvement in the patient's condition. Three months after the treatment the man was in almost perfect health, having only occasional slight pains in the back and headaches much less severe than those formerly troubling him. Young reviews the recent literature of unilateral hematuria without nephritis, which he thinks shows the great importance of study of these cases, and the need of due efforts to determine their etiology. Bilateral catheterization should always be performed. The case reported, he thinks, demonstrates the importance of attempting to stop the hemorrhage by the injection of adrenalin through the ureteral catheter, and the excellent result in this case proves conclusively its therapeutic value in certain cases. Even with definite lesions present it would appear not to be contraindicated, and it may be of great diagnostic value. The weakening effect of the hematuria would be abolished and a more careful study of the urine facilitated. If in this way we can effect a cure, as in the case reported, the patient would be saved the ordeal of a cutting operation. In case of an ulceration of a tumor into the urinary passages, the use of adrenalin would not necessarily delay an exploratory operation if indicated. Young is convinced that the intraureteral injection of adrenalin is practically free from danger.

Vascular Lesions Following Laparotomy.—W. A. N. Dorland calls attention to the vascular lesions—hemorrhage, thrombosis, and embolism—as after-complications of laparotomy. The case of hemorrhage he reports was not due to slipping of the ligature, but to rupture of a distended broad ligament vein, an accident which he considers rare, though Byron Robinson speaks of it as frequent, but easily explained by the thinness of the vascular walls caused by the development of the tumor and the increased vascular pressure from its removal, the ligation of the arteries, etc., in the operation. The change from the Trendelenburg posture after the operation also favors the occurrence of bleeding from an obscure open vessel or torn adhesions, as Buckmaster has shown; hence the abdomen should not be closed until after thorough ocular inspection in the normal position. Primary postoperative hemorrhage may be intraperitoneal, due to (1) slipping or loosening of the ligature; (2) oozing from large raw surfaces; (3) spontaneous rupture of pelvic veins; (4) subperitoneal hemorrhage from imperfect ligation of the peritoneum or connective tissue over and in front of the open mouth of a retracted vessel. In any case, the danger is from the lowering of tension from loss of fluid rather than from diminution in number of red corpuscles; hence the value of physiological salt solution injection to restore the tension. The second case Dorland reports was one of typical, light, right-sided phlegmasia alba dolens occurring on the eleventh day after a simple salpingo-oophorectomy without complications. There had been no excessive handling, no evidence of sepsis, the operation had not been prolonged or severe or hemorrhagic, and the patient was not unusually anemic or run down in health. There had been, however, some excess of traction on the left broad ligament to bring the diseased part in view. He remarks on the comparative infrequency of postoperative thrombosis and the scantiness of its literature, and quotes Dearborn's suggestion that probably some of the cases are overlooked, and that it is possible that some of the pulmonary complications of surgical operations may be due to this cause. He says that, except in the comparatively small percentage of cases resulting from sepsis, hemorrhage, and severity of operation, we do not yet know the true etiology of this curious and frequently fatal condition. There is here a field for interesting original research. The most important fact in the symptomatology is the persistent frequency of the pulse, out of proportion to the rise of temperature, and this occurring during convalescence from an operation should always suggest, as Dearborn says, the possibility of a thrombosis. The main point in treatment is absolute rest. Immobility of the affected limb, external warmth, emollient and antiphlogistic applications along the course of the thrombosed vein, and thorough asepsis of the primary wound, comprise about all that can be done to relieve the patient.

The Tuberculin Test.—C. P. Ambler maintains that the use of tuberculin with proper precautions is the most efficient remedy we have in the fight against tuberculosis, and that is a most valuable early diagnostic test. A tuberculin test will frequently clear up the diagnosis where without it the condition would have remained obscure until the disease had become more advanced, and valuable time had been lost. Experience shows that the more recent case will give a better reaction and to a smaller dose than will one more advanced. All other available means, however, should be first exhausted; not because the test is dangerous or aggravates the disease, but because the depression, fever, etc., of the reaction are not desirable if they can be avoided, and this is especially true in tuberculosis. It is particularly useful, he says, in joint troubles, bone disease, persistent wasting without pulmonary symptoms, chronic pleurisy, bladder trouble, and especially in adenitis. Ambler thinks that the slowly increasing method of using the test is faulty, as sometimes producing a tolerance that interferes with the reaction, and himself gives in the average adult case 2 mg. at the first injection, preferably late in the evening, and continuing the temperature record begun several days before at three- or four-hour intervals for two days more. If no reaction has then occurred, 5 mg. is given on the third day. The tuberculin is diluted with an 0.5 per cent. solution of carbolic acid and filtered sterilized water; the local discomfort is slight. The general and local reactions are described, the symptoms are sometimes severe, but may be very slight. The most characteristic sign is the change in temperature. The reaction, as has been said, is less positive in the more advanced than in the recent cases, a certain degree of tolerance or partial immunity having been gained. In conclusion, Ambler reiterates his belief in the efficacy, safety, and positive diagnostic value of a properly conducted tuberculin test, and says that, while a failure to react is not proof positive that the disease does not exist, a clearly defined action must be accepted as diagnostic proof of the existence of tuberculosis.

The Metric System.—The advantages of the metric system over the present measurements used in medical prescribing are pointed out by W. A. Jolley, who also gives details of methods to convert the measures now in use to the metric measurements. The convenience of the system is shown by a number of practical examples. He also gives a table by which the tablet triturates in common use can be prescribed according to the metric nomenclature, and shows how to use this system in prescribing ointments and liquids. One advantage of the system is the facility with which it can be adapted to the dosage required for children. Consider as 20 the age of an adult, and use that age as the denominator and the child's age as the numerator. Let the dosage for an adult be the total required in a mixture containing 100 c.c., then allowing 5 c.c. for a teaspoonful, this will be the dose for a child 1 year old. For a child 2 years old twice as much, and so on up to the adult. Actual practical work with the adaptation of the common measures to the metric equivalents will soon produce familiarity with prescribing by this method.

The Lancet, May 4, 1907.

Animal Blood-Serum in Surgery.—Some preliminary notes are offered by W. Stuart-Low on this subject. He has had some recent and satisfactory experiences with the healing of wounds under an oiled-silk dressing, a revival of a practise which was given up long ago. In thinking over the matter, he came to the conclusion that the good results were due to the blood serum or lymph and the assistance given to the surface circulation. Dry dressing in contact with a healing part absorbs the normally exuding serum and becomes adherent to the growing tissues, and thus blocks the exudation and therefore the surface circulation and dries the granulations. The oiled silk does not, but allows a constant exudation of serum from the surface vessels, and being itself nonabsorbent keeps the wound always bathed in serum. Such a surface serous bath prevents sepsis and aids superficial circulation in the healing region. In the one case the growing tissues are continuously having the blood serum sucked from their surface, whereas in the other case this is not so, there being always a layer, even though sometimes only a thin one, of blood serum maintained upon the healing area. Low simply washes the protective in sterile water or boric solution before applying it to the wound. In order to have a supply of serum on hand, he procures supplies of fresh beef blood, which he allows to clot, and siphons off the clear

supernatant serum at the top of a tall cylindrical vessel. The blood supply from the butcher's is renewed every three days, and on alternate days the serum is drawn off and placed in smaller receptacles. This serum is used to wash and dress wounds. It is alkaline in reaction, and from albuminous matters held in solution has a slight viscosity that gives it to a considerable degree air-excluding, and to a lesser degree adhesive, covering, and protective properties which are all conducive to healing. It is now admitted by all pathologists, too, that normal blood serum possesses restraining influences on bacterial growth because of the antibodies it contains, and Sir A. E. Wright's researches have proved that blood serum also contains those substances which have the marvelous power of preparing microorganisms for ingestion by the white blood corpuscles—viz., opsonins.

Primary Sarcoma of the Liver in a Child Aged Four and a Half Months.—The case is reported by E. W. Carmichael and H. Wade. The growth was of the round-celled variety. The abdomen enlarged rapidly, an increase of four and one-half centimeters taking place in the circumferential measurement at the level of the umbilicus in three days. There was no associated emaciation, no vomiting, no diarrhea. There was a marked degree of infiltration of the whole organ by the neoplasm, the few liver cells which remained being in a state of extreme degeneration. Only two cases have been recorded in younger patients. The patient was admitted to hospital on account of swelling of the abdomen—nothing more. This, as stated, increased so rapidly that a laparotomy was done, under the idea that some inflammatory process was present. The liver was found to be of a mottled purple color, soft and elastic in consistency. A trochar and cannula were inserted deeply into the substance of the organ, but the enlargement was found uniform throughout. The child died in twelve hours. The investigation of this case would seem to show that from the clinical standpoint primary sarcoma of the liver in children, although of rare occurrence, presents definite characteristics, which, although simulating an acute infective condition of that organ, are sufficiently distinctive to warrant a diagnosis of a malignant condition being made.

The Opsonic Power of the Serum with Reference to the Meningococcus of Cerebrospinal Fever Occurring in the Belfast Epidemic.—A series of sixty-three determinations of the opsonic power of the serum in cases of cerebrospinal fever occurring in the recent Belfast epidemic is tabulated by T. Houston and J. C. Rankin. The deductions which the authors seem inclined to draw from their tabulated results are as follows: (1) From the sixth day onwards all the cases examined (with one exception on the seventh day) showed an opsonic index of over 4; several of the cases from the second day onwards also gave an opsonic index of much above 4. (2) The opsonic index seems to be a more delicate test of infection than an agglutinative experiment (dilution 1 in 3, incubator temperature, limit 15 minutes); the agglutinative effect was never noticed until the index reached five times the normal, while after that, with one exception, it was always well marked. (3) The combination of this agglutinative effect and the opsonic determination will furnish in this disease a specific test of great value in diagnosis. The low opsonic power always found in normal or non-infected sera, so that even when moderately thick emulsions are used two or three cocci were the maximum found in any leucocyte, and the uniform absence of all agglutinative effect in all preparations containing normal serum forms a striking contrast with the very high opsonic effect found in preparations containing the serum from all cases of the disease on or after the sixth day and in several cases before this date, such preparations always showing leucocytes packed with cocci and also dense clumps of cocci not yet ingested. In fact, the picture is so characteristic that a diagnosis could in the majority of cases be made by simply mixing some washed corpuscles, serum from the patient, and meningococci, and incubating the mixture for a short time without the use of any control. Usually opsonic determinations for purposes of diagnosis require most careful and accurate counts, while in the case of this disease a glance at the preparation is usually sufficient. (4) From the very definite nature of the results obtained it would seem likely that this method will prove of value: (a) in diagnosing sporadic cases of the disease; (b) in settling the etiology of posterior basic meningitis in infants, and (c) in determining the nature of a doubtful coccus. In the presence of an epidemic it will always be possible by this method to decide whether or not a coccus isolated from a case is the true meningococcus. Several pathologists are of opinion that some strains of the meningococci may be Gram-positive. This test would, the author believes, definitely settle the nature of such a coccus. In this epidemic two Gram-positive cocci isolated from the blood and one from the cerebrospinal fluid proved not to be meningococci when tested by this method, although at first sight they closely resembled it. (5) Two of the main elements on which the process of immunity in this disease depends are the opsonic and agglutinative powers of the serum. A therapeutic serum therefore having no opsonic or agglutinative power on the meningococcus could not be expected to have much value as a remedial agent in this disease. Several samples of serum on the market were tested by the author and found to have neither opsonic nor agglutinative power.

Berliner klinische Wochenschrift, April 29, 1907.

Exophthalmic Goiter and Pseudoleukemia.—Caro suggests that possibly exophthalmic goiter and pseudoleukemia may have something in common and offers the opinion that the pseudoleukemic stage may be the result of the general condition of intoxication that we term Basedow's disease. He relates the history of a case in point in which death took place under evidences of hyperthyroidism after a partial strumectomy. An evidence of the severity of the autointoxication is the fact that the patient's urine taken before the operation and injected into a guinea pig produced no symptoms, but the same quantity taken during the period of hyperthyroidism and injected into another guinea pig produced death in a comparatively short time. Another noteworthy feature of the case was the high percentage of iodine present in the thyroid gland.

Münchener medizinische Wochenschrift, April 23, 1907.

The Röntgen Ray Treatment of Exophthalmic Goiter.—Freund prefers the medical treatment of this condition to surgical procedures and states that he believes the *x*-ray treatment to be the most satisfactory of all. He describes five cases of his own in which either great improvement or an apparent cure was effected by this means. In three of the cases no other remedial measures were employed, so that the complete relief of the symptoms that resulted must either be attributed to the action of the rays or it must be taken for granted that the condition had undergone spontaneous retrogression, the latter being an assumption which the author does not believe is justifiable. In another case the symptoms disappeared only after the radiotherapy had been begun, and in the fifth case, although great improvement in the subjective conditions had been effected, the ultimate result is not yet certain. The author believes that the Röntgen rays fulfill the causative indications in exophthalmic goiter, since they cause the abnormally active thyroid gland to diminish in size. They always exert a beneficial influence on the body weight and on the nervous manifestations, while the other symptoms, such as heart murmurs and exophthalmos, may also be caused to disappear. The prognosis is best in dealing with soft vascular goiters, which may completely subside under the treatment, while in the cases with hard nodular growths this is less likely to occur. The effects are more satisfactory the shorter the duration of the case has been.

A Case of Drug Eruption with Unusual General Manifestations.—Gregor, in speaking of drug eruptions, reports a case that is unusual on account of the severity of the general symptoms that accompanied it. The patient was a woman forty-two years of age, suffering from paranoia, accompanied with marked motor excitability, in order to control which various sedatives and hypnotics were administered. In consequence of the administration of two doses, given twenty-four hours apart, of 2 g. each of chloral hydrate, an eruption appeared, covering most of the body and consisting of dark red maculopapular lesions, which in some spots were hemorrhagic. About the face large bullæ filled with serous fluid developed, and it was something over two weeks before the symptoms had entirely subsided. The appearance of the rash was accompanied by a rise in temperature, which on the eighth day reached 39.8° C., and other manifestations were hemorrhagic bronchitis, conjunctivitis, and marked somnolence.

Deutsche medizinische Wochenschrift, April 25, 1907.

The Staining of the Spirochæta Pallida.—Giemsa contributes a very detailed disquisition on the theoretical and practical considerations involved in staining microorganisms and discusses particularly the demonstration of the *Spirochæta pallida*. He says that of the many methods that have been devised for this purpose the most satisfactory for routine clinical use is the modification of the Giemsa stain, suggested by Preiss. Giemsa, however, presents a further improvement of this method, which he considers superior and by means of which he says it is possible to secure satisfactory preparations in about three minutes. The tissue juice obtained under proper precautions is smeared on a slide and is fixed by passing three times through a flame. The slide is held in a clean forceps and

the freshly prepared staining fluid, consisting of 10 drops of the stock Giemsa solution in 10 c.c. of distilled acid-free water, is poured on it. The slide is held about 5 cm. above the flame until steam begins to rise, and is set aside for fifteen seconds. The stain is poured off and the film is immediately flooded again; the warming is repeated, the slide is set aside for fifteen seconds, and the procedure is carried out four times in all, except that the last time the stain is allowed to act for a minute. The preparation is quickly washed off in running water and is then ready for examination. It is of the greatest importance that all the glass ware and also the forceps used be scrupulously clean and the presence of even the minutest traces of acid must be avoided.

The Treatment of Ischemic Muscular Contractures.—Kleinschmidt says that Volkmann's original teaching in regard to the paralyses with contractures following the application of tight bandages to the extremities was that the muscular lesion was the result of deficient oxygenation. The paralysis was a direct consequence of injury to the muscle itself and a primary affection of the nerves was to be excluded from the etiology of the condition. Kleinschmidt believes that this view must at least be modified owing to animal experimentation that has been carried out by several authors, and considers that it is no longer possible to maintain that affections of the nerves play no part in the development of the condition. In addition to the restricted supply of arterial blood the stasis in the veins is an important factor, and in some instances the condition may be caused in severe injuries, such as fractures, without any compressing bandage having been applied. Particularly in fractures about the lower end of the humerus should careful investigation be made in order to determine whether the large vessels have been injured or are compressed. The treatment of contractures of this sort may be carried out according to two methods: One of these consists in resecting portions of the long bone or bones involved in order to shorten the distance to be covered by the muscle or its tendons, and the other consists in lengthening the tendons by a plastic operation on each one. The author prefers the former method, as the latter especially in injuries of the forearm is likely to require operation on a large number of tendons. He describes one case in which resection of the radius and ulna for this condition was performed with very good ultimate functional result, although the patient's recovery was delayed through the non-union of one of the resected bones. To correct this condition at a secondary operation a portion of periosteum was taken from the patient's own tibia and wrapped like a cuff about the two juxtaposed fragments, union promptly following this procedure.

French and Italian Journals.

Study of Four Cases of Hereditary Syphilis in the Fetus.—C. Fouquet has studied the pathological findings in four fetuses that died of hereditary syphilis at birth. The author gives us his conclusions. The more we search for the *Spirocheta pallida* in the tissues the more are we convinced that it is the pathogenic agent in syphilis. All the organs may contain the organism in cases of hereditary syphilis, even when macroscopically they appear healthy. The abundance of the parasites in a viscus bears a relation to the extent and gravity of the lesion in that viscus. In three cases in which there was an infection a short time before pregnancy, parasites were very abundant. When syphilis in the parents was of long standing the lesions were less marked and the parasites fewer. In many cases the parasites are so abundant that the product of conception succumbs before birth to a true syphilitic septicemia. Not all of the parasites die, and it is allowable to ask what becomes of them. In all probability their number and virulence grows less under the influence of antisyphilitic treatment. Some become dormant either as spirilla or in some unknown form and are capable at any time of taking on new activity. When the organisms reach the ductus coledochus they set up a true edematous inflammation of the bile ducts, which may be the cause of icterus in the newborn. In the kidneys, especially in the glomeruli and uriniferous tubules, they may be present in the urine. When in abundance in the spleen they explain the destruction of the red corpuscles, and the anemic and pseudoleukemic forms of syphilis. In the testicle they explain the infection of the spermatoid. A practical conclusion is that every child of syphilitic parents should be treated, whether they show any evidence of syphilis or not, since the parasites may be dormant.—*Bulletin de la Société d'Obstetrique de Paris*, January 17, 1907.

Curves of Weight and Temperature in Gastrointestinal Diseases of Infants.—Lucien Rivet has made a study of the curves of temperature and weight in infants afflicted with gastrointestinal affections as they were seen in the Children's Hospital. He gives us the conclusions derived from his studies and the use of different methods of feeding. The water diet is the best method of combating these diseases, and at the end of twenty-four to forty-eight hours the substitution of cereal gruels. Vegetable soups retard the appearance of emaciation, but do not prevent it, and may cause retention of chlorides and anasarca. The emaciation may last a long time after the disease is cured and may progress to a cachectic condition. Secondary infections must always be taken into account since they may produce true septicemia or gland suppurations. Flesh may be gained under any diet, but the best is breast milk. In other cases raw meat or cereals are useful. In debilitated subjects with an hereditary taint it is difficult to cure the lesions under any diet, but they go on to cachexia and emaciation.—*Revue Mensuelle des Maladies de l'Enfance*, February, 1907.

Meningo-Cerebellar Syndrome in Tertian Malaria.—Ficucci records a case in which a child of fifteen years of age, with alcoholic heredity, subject to epilepsy, was attacked by symptoms of general weakness, rigidity, and pain in the cervical region of the column. König's sign, anisocoria, staggering walk with a tendency to fall backward and to the left, intense headache, and vomiting. He had quotidian fever, which fell after ten hours with sweating. All the symptoms mentioned were worse during the fever, remitting between the attacks. The blood examination showed tertian parasites. After two weeks' treatment with quinine the symptoms disappeared. Lumbar puncture and the ophthalmoscope gave no grounds for a diagnosis of meningitis. The intimate connection of the symptoms with the fever, absence of paralysis, clearness of the mind, excellent effects of the quinine, and quick recovery of the patient supported the diagnosis of malarial infection, and excluded tubercle and meningitis of the cerebellum.—*La Riforma Medica*, March 2, 1907.

The Employment of Antidiphtheritic Serum in the Diphtheria of Birds.—Battier reports an epidemic of diphtheria which attacked birds housed in his aviary. Three of the birds had already succumbed to the disease when it occurred to the writer to try the effect of antidiphtheritic serum on the remaining birds. The result of the injections of 1 c.c. of this serum were excellent. Besides this treatment the throats were cleansed with antiseptic lotions. This treatment put an end to the epidemic and the birds recovered. The incident is interesting from several points of view. From the standpoint of comparative pathology one may ask if human diphtheria is not a modified form of the diphtheria of birds, the human antidiphtheritic serum having an effect on the latter. From the viewpoint of general pathology the observation shows the tonic effect of the antidiphtheritic serum. Finally by this treatment these epidemics which are so common and of such importance to the bird fancier can be quelled.—*Le Bulletin Médical*, December 29, 1906.

Latent Appendicular Alterations in Cases Cured Medically—P. Fiori describes cases of appendicitis that were supposed to have been cured by medical means in which there were continuous symptoms that indicated that the cure was only apparent. In three of the patients the symptoms were slight, while in the fourth they were of severe nature. In the slight cases the symptoms lasted but a few days, while in the severe one treatment extended over a month or more. In the slight cases the recurrence occurred in two or three months after the first attack, and the author calls our attention to the dangers of operation in the interval and the inadvisability of allowing the patient to believe himself entirely cured when the cure is only apparent and operation may be needed at any moment. Late observations demonstrate the accord between the clinical symptoms and pathological findings and the advantages to be derived from examination of the blood.—*La Riforma Medica*, December 22, 1906.

Poisoning by CO and CO_2 and Pneumonic Infections.—Cesare Biondi and Francesco Leoncini, having observed two cases of accidental poisoning by CO and CO_2 in which a pneumonic infection was precipitated by the poisoning, have experimented on dogs to ascertain whether there were evidences that the asphyxia produced by gas poisoning continued for some hours would so reduce the resistance of the tissues as to render them peculiarly susceptible to the action of the pneumococcus. The animals were subjected to inhalations of CO and CO_2, and afterwards injections were made into the trachea of a moderately virulent culture of the bacillus of Fraenkel. The conclusions at which the authors arrived were that both of these gases so reduce the resisting power of the lung tissues as to make the animal an easy prey to the infection. Animals treated by the same injections without gas poisoning did not take pneumonia.—*Rivista Critica di Clinica Medica*, December 8 and 17, 1906.

Hysterical Tachypnea with Organic Respiratory Affection.—Mercurio Candela says that in hysterical cases the severe symptoms frequently appear to be due to organic causes. This is especially so with respiratory symptoms. Hemoptysis, dyspnea, and tachypnea may occur. Hysterical dyspnea is due to four causes—spasm of the glottis, paralysis, or contracture of the diaphragm, spasmodic condition of the bronchi, and thoracic hyperesthesia, or gastric disturbances. These symptoms supervene in debilitated persons. Glottic spasm is not rare, and is so severe in some cases as to necessitate tracheotomy. The attack comes on suddenly, with frequent, shallow respiration, and incomplete movements of the abdomen. The patient cannot speak or swallow, but is conscious. The pulse becomes quick and the extremities covered with cold sweat. In paralysis of the diaphragm there is retraction of the epigastrium and hypochondrium and absence of abdominal movements. Spasm and contracture of the diaphragm is rarer. It may be clonic, or in the form of hiccough, and vomiting may occur. Tachypnea should not be confounded with dyspnea, as the first may occur without the second being present. The patient breathes very rapidly without any difficulty of respiration, and while lying quite calm and comfortable. Respirations may be as fast as 180 to the minute, and attacks may appear several times a day and last for some hours. Temperature and pulse will show no variation. Suggestion or distraction of the patient's mind will stop the attack, and it disappears in sleep. The author describes a case of this kind in which the hysterical symptoms had continued for some time in a man, when an organic disease of the pleura supervened which caused his death.—*Giornale Internazionale delle Scienze Mediche*, January 31, 1907.

Experimental Chronic Tuberculosis in the Rabbit.—Askanazy has recently performed some interesting experiments on animals in relation to the production of chronic tuberculosis. Since the discovery of Koch, innumerable inoculations have been made in rabbits and guinea pigs in order to produce experimental tuberculosis. Askanazy in his experiments has especially insisted upon one condition as being necessary for the attainment of success. In order to provoke processes closely resembling the affection in man, he considers it important to inoculate very few bacilli and to seek to produce pulmonary phthisis without appreciably affecting any other organs. Askanazy has injected extremely small quantities of the bacilli of the bovine type in the vein of the ear of a rabbit. The animal seemed in good condition for several months, but finally it began to lose flesh. At the end of eight months it died. Autopsy revealed the existence of a chronic tuberculosis of the lungs without tuberculous focus in any other organ, save a few miliary tubercles in the hypertrophied right kidney. The left kidney had been previously extirpated.—*La Presse Médicale*, January 2, 1907.

The Galvanic Current of High Intensity in Trigeminal Neuralgia.—Francesco Blasi, after having tried the continuous current of ordinary intensity in trigeminal neuralgia, and found it successful in obtaining a cure only in the slighter cases, began the use of a current of high intensity, used with great care to prevent any shock due to interruption of the current. He obtained the best of results in the exceedingly severe cases that are not relieved by any other form of treatment and that render the life of the patient unbearable. The apparatus in use must be capable of giving a current of very high intensity, but of the greatest smoothness. The ordinary machines are useless for this form of treatment. The current must be increased very smoothly and gradually and reduced in the same way. The positive pole is placed over the painful point or over the entire surface supplied by the trigeminus, and should be a large flat plaque. Several thicknesses of gauze must be placed over the skin so as to prevent electrolytic effects on the skin. The sittings should be from twenty to thirty minutes long when the current is very intense, or of one hour if of less intensity. It has a calming, paralyzing action on the nerves. In the neighborhood of the electrode there develop by secondary action acids which act on the ultimate ramifications of the sensitive nerves, diminishing irritability.—*Annali di Elettricita Medicale Terapia Fisci*, December, 1906.

Prophylaxis of Syphilis.—G. Petges considers prophylactic measures against syphilis in the light of recent discoveries and experimental researches. As to the excision of the chancre, it may lessen the amount of the secondary phenomena, and thus by preventing the patient from taking a thorough mercurial treatment early in the disease, may precipitate late manifestation of great severity. For these reasons it is not to be advised. Previous application of mercurials, that is, before a dangerous contact, has been shown to be of use in experimental cases. Friction with an ointment of calomel, thirty-three parts to one hundred parts of lanolin, an hour before inoculation has prevented infection. This may be of use to physicians, nurses, and laboratory workers who must handle dangerous material, but as to the general public taking any practical advantage of such prophylaxis there is very small prospect. A false security would be worse than doing nothing. The only true prophylaxis, then, must be by abstention from dangerous contact.—*Gazette Hebdomadaire des Sciences Médicales*, February 3, 1907.

Uterine Fibroma Complicated with Grave Anemia.—Paul Petit tells us that when a patient is near the menopause and is suffering from fibroma uteri, if there are no signs of acute malignant degeneration, and no marked symptoms of compression, it is wise to abstain from operation, even if there is a severe anemia. Expectant treatment by rest, medication, and electrolysis to restrain hemorrhage are the best measures to use. If, on the contrary, the patient is in active genital activity and there are serious symptoms, it is best to operate. If she is anemic and there is degeneration of the internal organs, as a result of frequent and severe hemorrhage, it is necessary to temporize and to use supportive treatment until the patient is in a sufficiently good general condition to bear the strain and shock of operation. Hydrochlorate of hydrastine is the best hemostatic, used by hypodermic injection. Locally tampons of a solution of chloride of zinc, fifty per cent., are an efficient hemostatic, cause no pain, and are exceedingly well borne. When the patient is prepared for operation, if the tumor is hard, benign, hemorrhage is only menorrhagic, and development abdominal, a double castration will produce rapid atrophy. If the serious conditions mentioned are present a hysterectomy should be done.—*Gazette des Hôpitaux*, February, 1907.

Chloroanemia of Infants.—Méry says that there are certain cases of anemia which arise without any appreciable cause, or which seem to arise from digestive troubles, and yet are not cured by changes in foods, that are much better affected by medication containing iron. The best form to administer is the protoxalate of iron. The symptoms are pallor of skin and mucous membranes, apathy and intellectual slowness, and weakness, but without emaciation. There is no enlargement of the glands or spleen. There may be a slight elevation of temperature and insomnia. There is a marked decrease of the hemoglobin, while the number of blood corpuscles is not much changed. In the infant, soon after birth, the amount of iron that is stored up in the tissues is much greater than in the adult. There is little iron in milk, and this stored-up iron is used in place of that which would be furnished by the food. This iron is probably contained in the hemoglobin to a great extent, while some of it is in the oxydases, or blood ferments, and here it exercises a very complicated function.—*Journal de Médecine et de Chirurgie Pratique*, February 10, 1907.

Spontaneous Cure of Tænia Nana.—Scipione Riva-Rocci states that tænia is less common in infants and children in Italy than in other countries. Concetti found but thirteen cases among 40,000 children observed during six years. This small proportion is not so remarkable as it seems when we remember that it is the custom to treat these cases at home without the aid of a physician. Tænia is the rarest of all tapeworms according to the published literature. But the author found that in many cases the parasite became unrecognizable a few hours after the passage of the stools, all that was left being shreds that appeared very much like the ordinary shreds of mucus that are observed in gastrointestinal diseases or that may be mistaken for oxyuris. The parasite becomes rapidly decomposed, and even microscopic examination of stools will not reveal the true nature of the threads. Preservation of the feces by solutions of formalin were not successful in preserving the parasite intact. The author describes a case that came to him in a healthy child that had manifestations of an acute gastrointestinal catarrh, and it was the microscopic examination of the stools that showed the presence of tænia nana. In some of the stools examined it was found that the parasites were so changed that they were unrecognizable. This was the case in stools passed after the second day of the disease, although no anthelmintic had been given. There were absolutely no symptoms that could be referred to the presence of the worms and no symptoms of a chronic gastrointestinal trouble. The disease was recovered from without treatment, and observation extending over four years has not shown any return of the worms. The author refers the cure of the disease to the production by the acute catarrh of the intestine of some substance that was poisonous to the parasite.—*Rivista di Clinica Pediatrica*, January, 1907.

Book Reviews.

DICTIONNAIRE DE MÉDECINE ET DE THÉRAPEUTIQUE MÉDICALE ET CHIRURGICALE, Comprenant le Résumé de Toute la Médecine et de Toute la Chirurgie. Par les Docteurs E. BOUCHUT, Médecin de l'Hôpital des Enfants Malades, Professeur agrégé a la Faculté de Médecine de Paris, et ARMAND DESPRÉS, Chirurgien de l'Hôpital de la Charité; Professeur agrégé à la Faculté de Médecine de Paris. Septième Édition, Revue et Mise au Courant de la Science, par les Drs. G. MARION, Professeur agrégé a la Faculté de Medicine de Paris, Chirurgien des Hôpitaux, et F. BOUCHUT. Paris: Felix Alcan, 1907.

IN the seventh edition of this encyclopedia of medical science, the revisers have brought the subject matter thoroughly up to date, the revision being most carefully done in the articles relating to bacteriology, opotherapy, orrhotherapy, hygiene, and electrotherapy. In the surgical articles the newest operative measures have been fully described, and many new instruments and prosthetic appliances have been pictured. The therapeutic indications for each disease are given with great care, and other subjects fully treated are those included under the heads of obstetrics, ophthalmology, dentistry, materia medica, and mineral waters. To the reader of French the book will prove very useful as a work of ready reference, and as a dictionary to define various French terms occasionally employed in English medical literature.

L'ÂME ET LE SYSTÈME NERVEUX. Hygiène et Pathologie. Par AUGUSTE FOREL, Ancien Professeur de Psychiatrie a l'Université de Zurich. Paris: G. Steinheil, 1906.

THIS is a semipopular treatise on the mind and nervous system, with special reference to the prophylaxis of psychical disorders. Professor Forel's writings on this theme have already had a wide circle of readers. His recent book, particularly "La Question Sexuelle, Exposée aux Adultes Cultivés," has attracted wide attention, and is one of the best examples of semipopular medical writing "for intelligent adults." Beginning with a sketch of the elements of psychology, the general anatomical facts pertaining to the brain, the cord and the nerves, Forel leads the reader by very easy gradations into the mysteries of mental pathology. He dwells upon the causes of nervous and mental disease, and thus brings the reader to the rules for their prevention. Here he speaks of every phase of life, of school life, family life, etc., and preaches the doctrine of moderation in living, in work, and in pleasure, as a mode of preventing insanity and nervous affections. He closes with a chapter on the sociological or public aspect of the hygiene of the nervous system.

The book should be translated into English. It would make most interesting reading for our cultured patients, and also would bring its useful teachings more generally before the American medical profession.

THIS LABYRINTHINE LIFE. A Tale of the Arizona Desert. By GEORGE ALEXANDER FISCHER, Author of Beethoven: a character study. New York: B. W. Dodge & Co., 1907.

THIS volume describes camp life in the desert. It is not only the tuberculous, but also the overworked and those on the verge of nervous prostration, who might benefit much by a sojourn in the open air of the desert. But the conditions must be favorable, and many hesitate to avail themselves of this method of treatment through ignorance of the conditions involved; and some who do undertake it make a failure of it for the same reason. What these conditions are will be found fully discussed in this tale of the Arizona desert. Physicians will be benefited by reading the volume, and many families will welcome the information so entertainingly provided therein.

A TEXT-BOOK OF OPHTHALMIC OPERATIONS. By HAROLD GRIMSDALE, M.B., F.R.C.S., Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery to St. George's Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital; and ELMORE BREWERTON, F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital. Chicago: W. T. Keener & Co., 1907.

THE volume is one of 340 pages, is well printed and quite fully illustrated by simple, rather crude, original, and very effective drawings. Only two or three of the illustrations are borrowed from other works. The authors have entered upon their task without indulging in the time-honored custom of writing a preface, and have omitted appendices. The subject is treated in a masterful, terse, direct manner. The work is not exhaustive, the operations on the eye and its adnexa that are of greatest value only being described. A short bibliography is found at the end of each chapter. Fifty-one pages are devoted to a description of the anatomy of the extrinsic ocular muscles, physiology, and the operations on these muscles. Then follow chapters on operations for ptosis, operations on the lids, enucleation and its substitutes, operations on the lacrymal apparatus, bones of the orbit, cataract, after cataract, for glaucoma, operations on the cornea, sclerotic, and iris. The value of each procedure, according to the opinion of the writers, is given. Much consideration is given to the more modern methods. The book is evidently written by men of experience, and its teachings can be relied upon. It will find its widest usefulness as a ready reference work for the busy ophthalmic surgeon.

EXPLORATION DE L'APPAREIL URINAIRE. Par le Dr. GEORGES LUYS, Ancien Assistant du Service des Voies Urinaires à l'Hôpital Laribosiere; Lauréat de la Faculté de Médecine de Paris. Paris: Masson et Cie, 1907.

THE diagnosis of affections of the urinary apparatus is becoming more and more nearly an exact science, thanks to the new methods of precision which are now used in the exploration of the urinary passages. Among those who have done the most to further this branch of diagnostic science—Nitze, Leiter, Albarran, Kelly, Valentine, and others—the author of the work before us holds an enviable place, his modification of the urethroscope having done much to popularize the use of this valuable instrument in France, and his ingenious method of separation of the urine having greatly facilitated the diagnosis of renal lesions. In this book Dr. Luys treats in turn of all the methods employed in the examination of the urinary tract, describing in detail the various instruments and procedures and illustrating them with numerous figures in the text and five excellent colored plates of the urethroscopic and cystoscopic images. The book is divided into four parts: Exploration of the urethra, exploration of the bladder, exploration of the ureter and renal pelvis, and exploration of the kidney itself. The work treats not only of instrumental examination, but of every method—chemical, manual, clinical, and instrumental—which may aid the surgeon in his investigation of the urinary organs. It is, indeed, a complete treatise on the diagnosis of diseases of the urinary tract, valuable alike to the specialist and to the general practitioner. It is the most complete, as it is the most recent, work of the kind published in any language and is one which no genitourinary surgeon and no diagnostician can well dispense with.

AIDS TO MEDICAL DIAGNOSIS. By ARTHUR WHITING, M.D., M.R.C.P., Physician to the Tottenham Hospital and Assistant Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest; Lecturer in, and Dean of, the North-East London Post Graduate College. New York: William Wood & Co., 1907.

THIS little volume is written from the clinical, rather than from the pathological, standpoint; and appeals to the reasoning powers, instead of taxing the memory with a multitude of diagnostic minutiæ. The book is not intended for beginners, but for those who already have some knowledge of systematic medicine. To such it will prove useful in affording a help in the differentiation of diseases presenting somewhat similar symptoms.

AIDS TO DENTAL SURGERY. By ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S. Eng., and DOUGLAS GABEL, M.R.C.S., L.R.C.P. Lond., L.D.S. Eng. Second Edition. New York: William Wood & Co., 1907.

THIS compend covers the subject of general dental surgery, omitting all purely manipulative procedures. While obviously intended for dental students, the book contains material that may be of interest to the physician.

AIDS TO THE DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN. By JOHN MCCAW, M.D., R.U.I., L.R.C.P. Edin., Physician to the Belfast Hospital for Sick Children. Third Edition. New York: William Wood & Co., 1907.

THIS is a very complete epitome of the Diseases of Children. In addition to the chapters on the diseases of the various organs and systems of the body, there are important introductory sections dealing with the anatomy and physiology of infancy and childhood, and with the hygiene and diet of infants and children. The volume contains more information than is generally found in compends; important facts are duly emphasized, and there are several tables containing much matter in a small space. In this new edition will be found articles on Friedreich's ataxia, thrombosis of the cerebral sinuses, influenza, congenital hypertrophic stenosis of the pylorus, food fever, Still's disease, rheumatoid arthritis, acute pyelitis, and a chapter on the diseases incidental to birth. The writer has carefully gleaned from the best current literature on pediatrics, and has produced a book which will be of real service to students and practitioners.

Society Reports.

AMERICAN PEDIATRIC SOCIETY.

Nineteenth Annual Meeting, Held in Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Special Report to the MEDICAL RECORD.)

PRESIDENT B. K. RACHFORD, M.D., OF CINCINNATI.

Tuesday, May 7—First Day.

The Use in Practice of the Theoretical Resources Provided by Percentage Feeding.—Dr. CHARLES HUNTER DUNN, Boston, said the chief step in advance had been the chemical recognition of the component elements of milk and the attempts to imitate nature as exactly as possible; the second great step was the recognition of the individual idiosyncrasies of each baby. The fact remained, however, that the subject of percentage feeding still presented difficulties to the general profession. The failure of modified milk feeding must be due either to limitations in the value of the resources or their improper application, and the writer suggested that it was due to the latter, and presented a plea for more careful use of the methods already in our possession. He thought the difficulties due to two factors: the inherent unsuitability of cow's milk to the digestion of the infant, and the variability of the digestive powers of different infants. Too much stress had been laid upon the first and too little upon the second; we were too apt to attribute the chief rôle to the unsuitability of cow's milk. He referred particularly to the use of the so-called split proteid feeding, and thought that by using whey a very close conformity to human milk could be had. The cereal diluents, he said, contained starch, which was not indicated by nature as desirable for the infant, and in practice the giving of these diluents was often protested against by nature, although, of course, in many the starch would be digested. When the starch digestive function had been developed of course they could be used. The same arguments as those against the indiscriminate use of cereal diluents were applicable to the widely advocated use of the alkalies, lime water, sodium bicarbonate, etc. Any of these artificial methods might have a place in certain individual cases, but must be due to the individual idiosyncrasies of digestion.

Some Conclusions from our Knowledge of the Proteids of Milk.—Dr. THOMAS S. SOUTHWORTH, New York, spoke of the early misconceptions concerning the proteids of milk and the gradual steps of enlightenment which began only with chemical analysis. The endeavor was made to imitate breast milk closely by the so-called modified milk, but it was soon found that many infants were not able to digest the modified milk except when modified to each individual case. There were many difficulties in the way of knowing the composition of breast milk, and therefore of comparing it with cow's milk, and our chief knowledge of cow's milk was derived from commercial, not medical, investigation. The writer referred to the close analogy between cheese-making and human digestion of milk; the important compounds formed with casein by ferments, alkalies, and acids, and the necessity for the recognition of these compounds, both as chemical entities, and of the part they play in facilitating the digestion of cow's milk. The real difficulty in infant feeding was not with the digestion of casein but of paracasein. Lactate of casein was readily digestible, as shown by the use of buttermilk, which had had less vogue in this country than abroad. Decalcified casein was easier of digestion, and sodium citrate made milk more digestible by decalcifying it. The writer thought a new departure was necessary if students were to learn to feed intelligently and be enabled to overcome the difficulties they met with in practice. An understanding was necessary of the physiological and the pathological digestion of the elements of cow's milk if empiricism was to give way to intelligent scientific methods in infant feeding.

Cane Sugar Feeding in Its Relation to Some of the Disorders of Childhood.—Dr. CHARLES G. KERLEY of New York read this paper. The study was undertaken as the result of an impression the writer had received by the observation of many children that cane sugar was not without harm to many. There was a class of cases defined as sugar susceptibles, usually children of rheumatic or gouty ancestry, with one characteristic peculiar to all, a tendency to recurrence and to chronicity. He included those who had recurrent persistent colds, asthma, urticaria, eczema, rheumatism, and recurrent vomiting. Seventy-eight cases comprised the series, fifteen from his own patients whom he had cared for from infancy. Recurrent vomiting in 8; eczema, 7; asthma, 4; frequent colds, 17; chorea, 11; rheumatism, 4; rheumatism and endocarditis, 6; urticaria, 2; recurrent bronchitis, 6. More sugar was taken than was for the best interest of the individual cases because of the craving of child life for sweets, and because the sugar-eating habit is so easily acquired. In the majority there was sugar incapacity. When a child was presented for treatment cane sugar was excluded from the diet and a small quantity of saccharine substituted. They very soon adapted themselves to the deprivation of sugar from cereals, and it did not appear to influence their well being or growth. In those suffering from rheumatism, recurrent vomiting, eczema, and asthma, there was also interrupted medication. The most satisfactory results were obtained in the affections of the upper respiratory tract. Abstinence from free sugar in the diet broke up the tendency to recurrent colds in children in whom the removal of the tonsils and adenoids had been without benefit. The writer concluded that free sugar was sufficiently toxic in certain individual infants to produce perversion of function, and in some to allow bacterial invasion, as in acute articular rheumatism and endocarditis.

Dr. THOMAS MORGAN ROTCH, Boston, thought these investigations of Dr. Southworth of great importance as tending to put the subject of percentage feeding on a proper basis.

Dr. FREEMAN, Boston, considered the use of whey fluid one of the most valuable aids in difficult cases, and thought it should be ordered from the laboratories where that was possible. It was important that it had been shown that these recurrent colds in children might be due to indigestion and not to exposure.

Dr. L. EMMETT HOLT, New York, had been following out Dr. Dunn's suggestions with reference to the routine use of whey mixtures for very young infants, and had been surprised to see how it relieved chronic constipation. The proteids could be raised gradually, the fats being kept low, with relief of indigestion and avoidance of troublesome symptoms. He agreed with Dr. Freeman that the mixtures should be ordered from the laboratories. He agreed with Dr. Kerley as to the ill effects of free sugar in the diet of many infants.

Dr. CHARLES G. KERLEY had used the whey mixture extensively for two years, and felt that while it was a very useful measure, applicable in a considerable number of cases, it was by no means a solution of the infant feeding problem, its chief fault being that children did not gain on it. He thought it could not always be relied upon.

Dr. J. P. CROZER GRIFFITH called attention to the recent studies upon the difficulty of digesting foreign albumins, and said the albumins of the cow were necessarily not the same, and not so digestible as those of the mother; there were certain principles in the mother's milk necessary to the digestion of many children, and they could not get along without it.

Dr. F. S. CHURCHILL, Chicago, did not see how anyone who had used the split proteids or whey mixtures could help being enthusiastic believers, because the majority of babies so fed invariably did well. Whey mixture was such a simple food that few babies could fail to digest it.

Dr. Walter Lester Carr, New York, said Dr. Kerley's statement was borne out by his own experience, that whey had a decided place in the feeding of premature infants and congenitally weak children, but that after using it for a time it seemed impossible to get a gain of weight. In eliminating the sugar it must be borne in mind that faulty oxidation might be one of the features.

Dr. Eaton deprecated the habit prevalent in some parts of the country of feeding babies according to a set of tables, without regard to the individual idiosyncrasies. He had used the whey mixtures with great satisfaction.

Dr. Saunders had used the whey mixture for many years with great satisfaction. One of the mixtures with which he had had most rapid gain was that of whey and condensed milk.

Dr. Crandall's experience bore out what Dr. Kerley had said as to the use of the whey mixture.

Dr. Dunn, in closing, called attention to the fact that some of the patients that seemed to do well on condensed milk had done even better when fed on a laboratory prescription of the same composition.

Dr. Southworth added his testimony to the value of the split proteid feeding; he had had excellent results with it.

A Case of Hemothorax; Aspiration, Recovery.—Dr. W. P. Northrup of New York reported this case, the patient having been seen three times by a well-known member of the society, who pronounced it bronchitis. He saw the case after the child had been ill two months. A poorly developed child of five months, pale, respirations 80 a minute; left chest flat; heart displaced to the right; no fever. Taking the infant on a pillow on its back, nothing happened as long as it lay quiet, but when turned toward the right the child had an attack suggesting the cessation of all vital functions. *X*-ray showed the chest filled with an opaque fluid. Two ounces of a black fluid was aspirated, when the pulse improved and the heart returned to its normal position. The fluid was blood, which coogulated quickly in the bottle. A year after the aspiration the patient is doing well, the only cause for anxiety being rapid respiration.

Anorexia Nervosa in Children.—Dr. F. Forchheimer of Cincinnati presented this paper, which referred to the several previously reported cases under somewhat different names, the condition having been usually looked upon as one of the manifestations of hysteria. According to the present state of our knowledge, we were justified in calling it a neurosis. As a rule, the children who have the disease have grown up without discipline, being allowed to choose their own diet. Female, 7 years; mother and father both neurotic; child always had its own way; at the age of 6 made up her mind that she would not eat but certain articles, practically nothing but cheese; none of the stigmata of hysteria were present; she was intelligent and consistent in her responses. Under proper treatment she soon recovered. Female, aged 12; mother and father neurotic; child brought up on artificial food; would only eat pickles and olives; if they tried to get her to eat anything else she vomited. Was very much run down, irritable and cross, backward in studies, cried easily, and slept badly. Under proper treatment she gained fifteen pounds in a few weeks. Male infant, one year of age; mother and father neurotic; father had had syphilis; child had never been ill in any way; breast-fed. From the ninth month attempts made to feed artificially. The child would not take any food. Was taken to the hospital and for four days nothing given by the mouth; then feeding began, but in vain; child would take water, but nothing else. Gavage used for two weeks, when the child recovered. Boy three years old, only child of parents married late in life. Neither of the parents believed in disciplining the child. For some time the boy had been cutting off articles of diet until he would touch nothing for several days, except a piece of fried bacon or a piece of banana. Had a degree of emaciation that the writer had rarely seen surpassed; three weeks later the child died from starvation. The writer believed all these cases could be cured by proper treatment and discipline, especial stress being laid upon discipline. Gavage should be held out as a last resource.

Dr. Charles G. Kerley, New York, had had a case of a four-year-old girl, who always vomited food, even at the table, but who when allowed to eat in the kitchen never had these attacks. The child was finally cured by removal to the house of her aunt and association with other children.

Dr. Putnam, Boston, had often succeeded in the milder forms of this disease by having the parents desist from saying anything about food or trying to force the child to eat.

Dr. J. P. Crozer Griffith referred to a case, the child of a physician, some months over a year of age, who could not be weaned, and in which gavage had to be used, and now at the age of four they still had difficulty in getting the child to take food.

(a) Three Cases Illustrating Typhoid Fever in the First Year of Life. (b) A Case of Articular Rheumatism in an Infant. (c) A Case of Congenital Biliary Cirrhosis.—Dr. J. P. Crozer Griffith, Philadelphia, presented these cases, three cases of typhoid fever, one of five months and the other two of nine months. In the first case there was an excellent opportunity of studying the beginning of the temperature record, and death occurred from intestinal hemorrhage. There was absence of the step-like rise characteristic of the adult's chart. There was positive Widal, rose spots, and enlarged spleen. In the second case, nine months, there was nothing unusual except the instance of relapse, with the opportunity of studying the temperature from the beginning to the end of the relapse. It had been the custom of the mother when putting the baby in the tub to cleanse the mouth with the spigot water. Typical spots and enlarged spleen. Third case, nine months; ordinary course; rose spots and enlarged spleen; the history suggested the possibility of persistent house infection. The child was fed partly by breast and partly by unboiled cow's milk; the bottles had been boiled, but the nipples kept in unboiled cold water. The case of articular rheumatism was a baby five months old, with rheumatism of hands and ankles. Treated with orange juice to exclude scurvy, without effect; under the use of salicylates it gradually recovered. The case of biliary cirrhosis, five months old, jaundice said to have been present from birth; child lost weight steadily. After being brought to the hospital there was intense jaundice; liver much enlarged; everything possible done to make it gain in weight, but in vain. Black material passed from the bowel, which appeared to be decomposed blood. Child became steadily worse and died: autopsy showed typical cirrhotic liver with the duct of the gall-bladder entirely obliterated.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held April 16, 1907.

Dr. Warren Coleman in the Chair.

A Case of Larva Migrans.—Dr. N. E. Brill reported this case. The patient was seen on October 25, 1906, when he entered the hospital because of advanced emphysema and endocarditis. On the dorsum of his hands was noticed an eruption, and, when questioned regarding it, it was found that two and a half years before he had been working in the fields in Florida. One noon he felt an itching sensation on the ankles of both feet, along the inner aspect of the malleoli, and, looking at his ankles, he found an elevated pimple about one-eighth of an inch in diameter and of the same height. The next day the pimple had progressed forwards and upwards for about two inches. The progress of the eruption was steadily onwards and up-

wards until the eruption showed a long line running from the ankle to the knee. It then continued on both legs upward until it reached the groin. It stopped there on the right side. On the left side, however, it went up over the left side of the abdomen, over the thorax and across to the right side, then down the right side of the trunk, down the abdominal region to the axilla, then under the axilla to the back, and then across the back to the left shoulder, down the left shoulder to the arm, then the forearm, and finally to the hand. The eruption appeared to be of parasitic nature. In looking up the literature on the subject Dr. Brill found that the case reported was exactly similar to one reported by Lustgarten under the title of "Creeping Eruption of Lee."

The history of this disorder dated back to 1874, when Dr. R. J. Lee made a communication to the Clinical Society of London with the title of "A Case of Creeping Eruption," the nature of which he could not determine and about which he could get no information. Three dermatologists were appointed, W. Howship Dickinson, Tilbury Fox, and Dyce Duckworth, who were to make further investigations regarding it, especially on the microscopical findings, but their results were negative. In 1884 Lee again presented to the Clinical Society of London a second case appearing in an adult, and he thought that the linear eruption might be due to an "active parasite or animalcule," as he called it. After that no mention was made of this disease until 1890 when Crocker reported a case similar to Lee's. In 1895 Neumann of Vienna showed a wax model representing "a new skin affection," and in the discussion Peterson referred to a communication which showed that Samson had reported "a case of creeping eruption" and had asked in an open letter whether anybody in Russia had seen such a case. He had seen such a case in Southern Russia. These observations were contained in *Vratch,* dating from 1895. In answer to his letter several communications were received, and in one it was stated that in 1888 Sokolow had seen these cases and had isolated from them a parasite which he said was a worm which resembled the larva of a fly. This parasite from Sokolow's patient was submitted to Prof. Cholodkowsky and an entomologist and it was proven to be the larva of the bot fly. In 1898 Kaposi reported a case in Austria and he called it "hyponomoderma," a "skin passage," or tunnel. In 1893 Crocker gave it the name of "larva migrans." In 1902 a doctor in Philadelphia reporting three cases, called the disease "creeping disease of Lee." In 1903 Stelwagon reported another case. In 1904 Hamburger of the Johns Hopkins Medical School reported an additional case occurring in a boy of four years, and recognized it as the creeping eruption of Lee. In 1905 another case was reported from Russia and was called the "linear creeping epidermatitis." The case reported by Dr. Brill he claimed to be the only one reported in the literature of New York.

The eruption was elevated and measured about 2x2 millimeters. It always extended in a linear way, and never spread laterally and preserved the same diameter throughout. It sometimes progressed seven inches in twenty-four hours; at other times it might go no measurable distance. In the case Dr. Brill reported it extended 2.5 c.m. The patient was in the hospital four weeks; when he left the eruption had advanced from the thenar eminence to the back of the first phalanx. Most of these cases appeared in children and usually upon the exposed parts, such as the ankles, buttocks, and hands. In children the bare buttocks on damp ground favored its development. In Dr. Brill's case the man wore low shoes and worked in the field. Only sixteen cases had so far been reported in the literature since 1874.

Dr. Harlow Brooks said that three years ago he reported a case which he believed to be due to the direct infection from the bot fly. The man gave a history of having worked in Panama where the bot fly was frequently encountered. When he entered the hospital there were two raised circular lesions which looked like boils, and from the top of them the head of the larva was recognized; when these were dug out the lesions healed.

Dr. Alexander Lambert said he had seen a case which had extended from the clavicle to the elbow, over the humerus, and upper part of the body. There was a black oozing. When the "worm" was cut out it looked like a chestnut worm and very fat. In this worm were two black "stickers" and, when the worm was stirred up, the man would squirm. On the isthmus it was called "castanea del monte."

Dr. Brill said that only in the Russian cases had the larva been extracted.

A Study of Blood Pressure in Compressed Air Workers.—Dr. Harlow Brooks read this paper. (See page 855.)

Dr. Alexander Lambert said that his experience was confined more to the higher air than to compressed air. But when the bridge was in course of construction across the Harlem river a friend of his was in charge and he complained that the veins of his legs were markedly varicosed. So in order to learn the conditions he went for the first time into compressed air. The air was compressed about twelve or fifteen pounds above the pressure of the atmosphere. He stayed down only a short time, and came out slowly, and he learned that the veins were but little affected. Then with the same pressure they were let out as fast as they could be gotten out and the only effect noted was a sudden distention of the internal saphenous vein. It made a tremendous difference. Yet no trouble was encountered when they came out slowly. Dr. Lambert said that these men were very careless about it. The application of an elastic bandage soon relieved him of his complaint. His other experience was with two or three patients who came to him with attacks of angina pectoris and asked if it would be safe for them to go to Colorado Springs, which was situated 6,200 feet above the sea level. At first he said they should not go, believing that it was wrong that they should go and that their condition would be aggravated. One man listened to what Dr. Lambert said and then went and spent the summer there. He felt so much better and improved so that Dr. Lambert said his eyes were opened when he saw the patient in the fall. Two doctors, friends of his, in Colorado Springs were interested in this patient and made studies of the blood pressure on Pike's Peak, which had an altitude of 14,000 feet. The blood pressure was much lower on the peak than in Colorado Springs. As one increased the altitude there was a decrease in the blood pressure. So long as one did not overexert and was ordinarily careful as regards exercise, he would be fairly comfortable. Dr. Lambert said that it was a question of oxygen, and that it should be remembered how quickly the red cells increased in high altitudes within one month. From observations made in South America it was noted that the red cells increased up to six or seven millions. This was apparently a physiological endeavor to gain more oxygen to the tissues. At 9,000 or 10,000 feet altitudes even animals suffer from quick exertion or exercise. Dr. Lambert said he had seen a black deer quickly aroused when he approached near; the deer stood with legs thrown forward, with tongue out, and unable to move, although he was seen. When the animal got its breath it ran away. The animal was simply gasping for breath on account of the high altitude.

On Some Therapeutic Applications of Adrenalin.—Dr. George B. Wallace read this paper. He said that, with the exception of the local action of adrenalin, its hemostatic action, knowledge of the therapeutic effects was in an unsatisfactory state, and marked differences of opinion existed concerning the benefits, or lack of bene-

fits, following its use. The purpose of his paper was to attempt to define some clinical applications of adrenalin in the light of experimental facts. He briefly recalled some of the main facts brought out by animal experimentation, the most striking of which was on the circulation. When a fraction of a milligram of adrenalin was placed directly in the blood stream there occurred a remarkable rise in the blood pressure of not over ten minutes' duration, due chiefly to the intense vascular constriction by a stimulation of the sympathetic, vasoconstrictor nerve endings. It was the splanchnic vessels which reacted most strongly and a fact of importance was that the pulmonary vessels did not share in this constriction, a fact which was taken as proof of the non-existence of vasomotor nerves in these vessels. These effects were seen when adrenalin was placed directly in the veins, but it was generally agreed upon by pharmacologists that they were entirely absent when it was given by the mouth or by subcutaneous injection. Another fact established was that adrenalin had no dilating effect upon the bronchioles. The effects on the central nervous system were not very striking. As in the case with all new drugs of any promise, adrenalin had been given a very extensive and indiscriminate trial clinically. He then considered a few of the diseases in which it had been used. In general there seemed to be no specific vascular abnormality in which adrenalin was especially employed, other than the indefinite one of circulatory weakness. The reports of its beneficial effects in circulatory collapse from a sudden injury and in cardiac dilatation from a long continued cardiac disease, and in pulmonary edema, were not by any means entirely satisfactory. The majority of the attacks of asthma were immediately checked by subcutaneous injections of adrenalin. An understanding of the therapeutic application of adrenalin could best be obtained by definite knowledge of the range of action of adrenalin when given by subcutaneous or intramuscular injections. With this in view a number of experiments had been performed on animals by Dr. Diamond and himself, in which they confined themselves especially to the effects on the circulation of subcutaneous or intramuscular injections. An appreciable rise of blood pressure in these animals, especially in the case of a dog, from a subcutaneous injection of adrenalin might be considered an exception and not the rule. With intramuscular injections quite a different effect was seen. In the rabbit intramuscular injections acted practically like intravenous injections, the rise coming on quickly, being marked and persistent only for a few minutes. They were of the opinion that the injection was in truth an intravenous one, that the manipulation resulted in the tearing of a small vein, and that some of the adrenalin thus gained entrance directly into a vein. This was in harmony with the fact that the rise was by no means constantly obtained, and further explained its short duration. They had endeavored to control their results by injections into man; and in considering the results obtained, one was tempted to conclude that subcutaneous injections of adrenalin caused a rise in blood pressure in man. In one case, one of myocarditis, an injection of 1 c.c. of water caused the pressure to rise from 92 to 108 mm. Adrenalin injected in the same amount raised the pressure from 92 to 110. Plainly in this case there was no difference discernible between water and adrenalin. On the whole, there seemed little reason for explaining them as due to the absorption and subsequent action of the adrenalin injected. As a matter of fact, the more negative animal experiments were much more satisfactory and convincing. The animal was unconscious from the anesthetic, and the effects of suggestion, mental activity, and reflex stimulation were largely eliminated. They had given adrenalin subcutaneously in a few cases of pulmonary edema, from pneumonia and cardiac failure, and in no instance was any improvement noticed. Concerning the clinical bearing of these and other experiments, one conclusion would be that in circulatory or cardiac disorders requiring a stimulant treatment, but little dependence could be placed on adrenalin given by subcutaneous injection, and it would be more desirable to use instead some drugs of proven value. In cases of pulmonary edema, its general use would seem of no benefit. Finally in cases of acute asthma there seemed to be no question that adrenalin might relieve the attack. It should always be borne in mind in using adrenalin for any period of time that there was a possibility of inducing not only local necrosis, but permanent pathological conditions in the liver and arterial walls as well.

Dr. Egbert Le Fevre said that he would take some exceptions to Dr. Wallace's findings from a clinical standpoint. First in relation to the circulatory system. Since its introduction, in spite of its uncertainty of action, it had been extensively used in the hospital. He agreed that in cases of myocardial disease, or primary valvular lesions with consequent myocardial degeneration, with failure of the circulation on account of muscular weakness, adrenalin failed to improve, and generally produced unfavorable results. On the other hand, in those cases where there were disturbances of the circulation not dependent upon cardiac power, but dependent upon loss of control over the circulation, it had stood him in good stead better than any other drug. In acute diseases of toxic type, as in collapse during the second, third, or fourth week of typhoid fever, where without previous diseases there were evidences of degeneration in the heart itself, the patient going into collapse, with marked cyanosis, in those cases where they usually depended upon camphor dissolved in oil, the use of adrenalin had saved many lives. In the past two years he had been unfortunate enough to see four cases of that condition where, under ordinary circumstances, imperfect results would have followed the use of such cardiac stimulation as from hot plates, etc., marvelous results followed the use of adrenalin. Dr. Wallace had stated that no good effects followed the use of adrenalin in the pulmonary edema of pneumonia. Dr. Le Fevre said that pulmonary edema should be divided into two classes. First, where late in the disease there was a gradual but progressive failure of the heart, and with that some failure in the vascular control, in these cases better results were obtained from such agents as camphor, caffein, or digitalis than from adrenalin. But, on the other hand, in those cases where, early in the disease, without evidence of cardiac failure, they had sudden attacks of edema, adrenalin was better than other drugs. During the past three months Dr. Le Fevre had at Bellevue Hospital five cases in which he was able to show the immediate effects of adrenalin in this type of edema. In vascular collapse, not cardiac *per se*, adrenalin was indicated. With regard to asthma he agreed that in the spasmodic types of breathing that occurred in acute cardiac and renal disease, and in other forms of toxemia which also occurred in asthma, which once were called spasmodic asthma, adrenalin acted but little. But in the cardiac and renal diseases with intercurrent attacks, that were nearly like true asthma, there was some effect to be had from adrenalin, but not the marked effect one would get in true asthmatic conditions. He said he had seen a number of cases of asthma where the use of adrenalin was attended by unusual symptoms, especially the early blanching, and here a question arose as to the cause of the blanching. Just how adrenalin acted was still a mystery. In asthma, with spasm of the bronchioles, no effects resulted from the administration of adrenalin. But in cases of angioneurotic edema, with the peculiar condition of the nose, the sneezing, and profuse discharge, etc., the giving of adrenalin would be accompanied by a blanching of the mucous membrane and much relief given. The question, and an important one, arose

as to the danger of producing changes in the blood-vessels of chronic asthmatics by the use of adrenalin, given in amounts necessary to give relief. The case in which he had used it longest extended over four and a half years, and nothing of a permanent nature could be detected. Another case had used it three and a half years. There was no doubt that adrenalin was preferable to morphine for use in these asthmatics.

Dr. W. Sohier Bryant said he had been using the suprarenal gland for ten years, and very extensively in nasal work, and the variability of its effects was something none seemed to understand about. He was fond of using it for diagnostic purposes to determine the nature of the cause of asthma. If there was a local cause the adrenalin controlled it immediately. In those cases the asthma was a reflex disturbance caused by some pressure upon or in the nose.

Dr. George B. Wallace said that no doubt there were some types of asthma in which adrenalin had no effect whatever. The question that most interested him was how this agent produced its effect. As a whole the effect upon the circulation was bad. The clinical cases in which adrenalin was expected to do good were rare; in ten cases there might be one case which showed improvement, while the others would not.

The Comparative Actions of Isopral and Chloral.—Dr. R. A. Hatcher presented this paper. He said that a student of materia medica could not fail to observe that many substances came into notice, rose to popularity, and sunk back into obscurity, only to give place to others which followed the same course. This observation should tend to make all conservative. While they were tardily coming to appreciate the indecency of permitting themselves to be made the dupes and unpaid agents of the makers of worthless compounds which were forced upon their notice in high sounding, but often meaningless, phrases, they should be more guarded in accepting too optimistically the statements of those who had an interest in making reports upon compounds sold at fancy prices; they should remember that the enthusiast and the investigator who sold the report were prone to accept insufficient evidence as the basis for highly colored reports, if, indeed, their reports were not pure fabrications. Isopral was being extensively advertised as a safe hypnotic of the chloral group, and as acting more efficiently than chloral in one-half the dose, and without effect on the heart and nervous system. The use of isopral by clinicians was apparently based upon the pharmacological investigations of Impens, who gave figures purporting to show that isopral was much safer than chloral hydrate. It did not seem to Dr. Hatcher that his conclusions were in any way justified, and the table taken from Impens' article was shown for comparison with results obtained by him in experiments upon a number of animals, including 13 dogs, 10 rabbits, 8 cats, and 2 guinea pigs. His conclusions were that he believed that his experiments on rabbits and cats and Impens' experiments on rabbits showed that there was no essential difference between the action of isopral and hydrated chloral in effective doses on the respiratory centers, while his experiments on dogs showed that isopral was more than twice as active in depressing the vasomotor and respiratory centers and the heart. Dr. Hatcher's figures for the relative toxicity were almost precisely the same as those given by Impens for the relative efficiency of the two drugs for the dog.

Dr. A. N. Richards discussed the paper.

Dr. Hatcher closed the discussion.

Chloride of Ethyl in Neuralgias.—The local application of chloride of ethyl spray has sometimes not only relieved, but also cured some forms of neuralgia. Hemicrania, lumbago, and supraorbital neuralgia have all been cured in this way.—*The Hospital.*

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held April 15, 1907.

The President, Dr. Thomas E. Satterthwaite, in the Chair.

Report of the Committee on the Death of Dr. George B. Fowler.—Dr. Egbert H. Grandin, Chairman. (Read by the Secretary. See page 906.)

Symposium on Milk.—The President, Dr. Satterthwaite, said that a word or two of introduction seemed necessary, especially in view of the fact that he had recently received a letter asking if the object of the meeting was to advocate the municipal pasteurization of milk. His reply was that this Milk Symposium was planned months ago, when public attention was first called to the city milk question. There was not, and never had been any intention or desire on the part of the Association to advocate pasteurization, inspection, modification, certification, or in fact anything new, but it was intended and hoped that through the cooperation of the best experts obtainable, the milk question would enter on a new phase, rising above the level of personal, political, or local considerations. He felt that the whole subject would be reviewed from a common sense standpoint, and that some light would be thrown, directly or indirectly, on such features as bovine tuberculosis and infant mortality; the inspection of dairy farms and their products; pasteurization, its benefits or disadvantages, and its applicability; the adulteration of milk; the proper bacterial standard for milk; the certification of milk; raw milk and bottle-fed babies, and so on. The milk question presented a number of difficult problems that could not be entirely solved in a day or a year, so that it was too much to expect immediate harmony in conflicting views. More facts were needed for the complete solution of the question. There was no doubt, however, from the published accounts, that much of the city milk was impure, and also that the mortality among bottle-fed infants was too high, and that our best efforts should be directed toward checking it.

On the Bacteriology of Milk.—Professor H. W. Conn of Middletown, Conn., Director of the Bacteriological Laboratory of the Connecticut State Board of Health, discussed this phase of the subject. He stated that there was entirely too much misapprehension concerning the relation of bacteria to health. While some bacteria were harmful, others were perfectly harmless, while still others were distinctly useful, and among the latter were those of the lactic acid variety, which developed in milk, and might prevent the growth of other and harmful organisms. To the manufacturer of cheese and butter they were indispensable. While there were those who would advocate the destruction of all bacteria in milk, on the same principle as that advanced by the man who would kill all birds because a hawk occasionally kills chickens, yet as a matter of fact, from the standpoint of the bacteriologist, there were only certain bacteria in milk that were to be feared. These were, first, the tubercle bacilli; second, the typhoid fever bacilli; third, the diphtheria bacilli, and, fourth, the germs of scarlet fever, which were thus far unrecognized. Of these four, only the first was positively known to come from the cow; the other three were from some form of human contamination. In addition to these four, the speaker said, there was a type of diseases which was characterized by intestinal disturbances, such as were commonly known as summer complaint, cholera infantum, etc., and though they were distinctly traceable to the use of milk in many instances, their causation was as yet unknown. While they were probably due to toxic products contained in the milk, we had no certain knowledge on that subject, but we did know that lactic acid bacteria were not responsible for this type of troubles. Professor Conn said that three chief methods of milk purifica-

tion had been advocated and were more or less in use. Each of these had its advantages, and each possessed certain weaknesses. The first was that of proper dairy inspection. This was fairly new, although it was first suggested about fifteen years ago, and first adopted by milk supply companies in Berlin and London. While dairy inspection was of extreme value, it did not furnish a guarantee that the milk was free from the germs of tuberculosis, typhoid fever, diphtheria, or scarlet fever. While it might accomplish much, it could not cover the whole question.

The second method was a bacteriological standard. The bacterial standards of milk adopted by different cities varied widely. One city, for example, placed its bacterial standard at 500,000 per c.c.; another city at 100,000, and another for special purposes at 30,000. The speaker said that in his own city of Middletown, Conn., it would be a very easy matter to obtain milk with a bacterial standard as low as 10,000, while in New York City it was doubtful whether a standard of 1,000,000 per c.c. could be satisfactorily maintained. That did not imply, however, that the milk in Middletown, Conn., was one hundred times better than that in New York; on the contrary, it was probably not one iota better. Buttermilk had a bacterial content of two, three, and even five hundred millions to the c.c., and still there were many physicians who did not hesitate to recommend it as a wholesome article of food. As a matter of fact, these countless numbers of bacteria in buttermilk and sour milk were practically all of the harmless and even useful lactic acid type, and thus sour milk usually represented a pure culture of lactic acid bacteria. It was not the number of bacteria upon which the healthfulness of the milk depended, but the kind. The wholesomeness of the milk depended upon whether its bacteria belonged to the harmful or harmless types, and it was a difficult, or even an impossible matter for any bacteriologist to distinguish between the different kinds; while it could be done, the methods were too slow and unreliable to be of practical application. Hence too much reliance should not be placed upon bacterial milk standards. Moreover, they did not always work fairly. They were often unjust to the milk producer, and we in the cities were too prone to lose sight of the other end of the milk route. No milk standard could guarantee that a certain sample of milk was entirely satisfactory. Its bacterial content might fall below 500,000 per c.c. or any other standard, and yet it might be filled with typhoid or tubercle bacilli. It might, on the other hand, contain twenty or thirty millions of bacteria to the c.c. and be perfectly harmless. Under existing conditions a bacteriological standard placed the emphasis on the wrong spot. We should emphasize the type of bacteria and not their number. Some day, perhaps, that could be done; up to the present time it had not been done, simply because it was impracticable to do it. Coming to the third method of guarding the milk pasteurization, Professor Conn said that much could be said for and against it. In the first place, the fact should be borne in mind that pasteurization was the only method within our reach at the present time by which we could *guarantee* that any sample of milk was free from the danger of the germs of specific diseases, such as typhoid fever, tuberculosis, etc. But, in order to accomplish that, the milk must be properly pasteurized. Pasteurization which simply raised the milk for a moment to a moderate degree of heat accomplished little in the way of destroying the resisting pathogenic bacteria. It must be done thoroughly, and in the proper way if the milk was to be guaranteed as free from the tubercle bacillus. Another fact to be borne in mind was that pasteurization destroyed the lactic acid bacteria and left others alive, which afterwards developed rapidly, being unhindered by the lactic acid bacteria. Therefore, after pasteurization, the milk must be utilized without much delay. Again, it had been said that pasteurization placed a premium on carelessness in the dairy, because, if the milk was to be thus treated, the farmer naturally might think it would make no special difference whether he was cleanly or not. While this objection might have some weight, it might be overcome by proper dairy inspection. Some believed that pasteurization decreased the digestibility of milk, but this, he said, depended on the temperature to which the milk had been subjected. Prof. Conn stated that he had reason to believe that in the near future there might be placed upon the market a type of milk known as concentrated milk, which had about four-fifths of its watery content removed by exposing it to a temperature of not more than 140 degrees for a period sufficiently long to destroy all the pathogenic germs. By this method of treatment, the bacterial content of the milk was reduced from any number of millions to a few thousands, and the milk itself brought into a condition in which bacteria would scarcely thrive. Prof. Conn said he had been experimenting with this concentrated milk for several months, and he could state positively that when kept at a temperature of 50 degrees or below it would remain unchanged for five or six days without any appreciable increase in the number of bacteria, and that when subsequently mixed with three times its bulk of water it could not by any ordinary means be distinguished from fresh milk.

Clean Milk.—Dr. Mary E. Pennington of the Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C., said that because of the great difference in the production of milk in various parts of the country, and the time and conditions intervening between drawing it from the cow and its delivery to the consumer, a bacterial standard was exceedingly difficult to fix. If such was maintained, it must be regarded in the light of an indication as to what was going on at the dairy quite as much as an index of the condition of the milk itself. Clean milk was that from healthy cattle, wholesomely fed, kept in clean, light, airy surroundings, and drawn by clean milkers. It should be collected in covered buckets, and then, as quickly as possible, be cooled and bottled on the farm away from the disease-bearing dust of the city. Being of all foods the one most subject to deterioration, every effort should be made for its rapid transportation to the consumer, and for the continued maintenance of a temperature below 55° F. during this interval. Milk so produced and cared for did not contain polluting organisms from the barn, which were generally those of cow manure, nor from dirty hands, nor from foul air and water. If kept cold, the bacteria would scarcely increase at all during the first twenty-four hours, by which time, even in the large cities, it should reach the consumer. If dirt entered, neither art, science nor patented machinery could remove such dirt, and leave intact the original properties of the milk. Any process having that end in view was objectionable, because it placed a premium on dirty, diseased milk, which was always more easily obtained than the clean variety, and hence could be sold at a greater profit by the dealer. Pasteurization, as practised commercially, could not be guaranteed to kill off pathogenic organisms, such as tubercle bacilli, typhoid bacilli, streptococci, etc. It did kill the lactic acid formers normally found in milk, because they were more easily destroyed by heat, but, on the other hand, it left the heat-resisting spore formers and other organisms which commonly caused profound chemical changes in the milk without first curdling it, and therefore without any indication to the housewife that the milk was not fit for food. It did not protect the milk from reinfection by dirty air, employees, and containers. Furthermore, milk was often heated two or three times before it was fed to the baby, by which time it contained not only the life products of millions of organisms which might be toxic, but also their dead bodies and excreta. The speaker emphasized the importance of bending all energies toward the education of the people, including the dealers, to know, demand, and pay for clean, good milk.

Some Points on the Chemistry of Milk.—By Professor L. L. Van Slyke of Geneva, N. Y., of the Department of Chemistry, N. Y. State Agricultural Experiment Sta-

tion. The chief purpose of this paper was to point out some of the common and widespread misconceptions regarding the chemistry of cows' milk, and add a few words regarding some of the dairy problems that had been investigated, and some of the unsolved problems that might be of interest to physicians. After discussing normal milk and its composition, the speaker said that this varied widely, but naturally less in milk derived from herds of cows than in that taken from individual cows. Milk, as it often came into a city market, varied in composition much less than milk from individuals or from single herds. When, therefore, we spoke of the composition of normal milk, without any qualifying statement, we were dealing with quantitative relations that might be about as definite and fixed as the quotations of the stock-market. The average of about 5,500 American analyses of milk, mostly made at the State Agricultural Experiment Stations and under known conditions of production, gave approximately the following figures: Water, 87.10; solids, 12.90; fat, 3.90; casein, 2.50; albumin, etc., 0.70; sugar, 5.10; ash, 0.70. After referring to the relation of casein to albumin in cows' milk, and the action of acids and rennet on casein, Professor Van Slyke said that the following were some of the problems that had been under investigation: (1) Different breeds of cows and the composition of milk; (2) a study of the relation of milk to the manufacture of cheddar cheese; (3) the ripening of cheddar cheese; (4) casein and its compounds; (5) chemistry of the souring of milk; (6) kumyss and carbonated milk. Some unsolved problems that still called urgently for attention in the way of rigid chemical investigation were (1) the action of rennet or pepsin upon the casein of milk, (2) the chemistry of casein, especially in relation to inorganic salts in milk; (3) the chemistry of paracasein, the product formed by rennet coagulation; (4) the relation between the casein of human milk and the casein of cows' milk. In concluding his remarks, the speaker said he had tried to indicate in his paper (1) that there were positive errors in literature regarding the composition of milk, which needed correction; (2) that work had been done and was being done in other connections which found practical application to some of the problems of medical practice, and (3) that there yet remained for solution problems of profound and far-reaching importance.

Municipal Regulation of the Milk Supply.—Dr. GEORGE W. GOLER, Health Officer of the City of Rochester, N. Y., presented this paper. The speaker first emphasized the importance of milk as an article of diet, and said that before taking up the question of its municipal control, he wished to present the milkman's view of the case. Of the several millions of milch cattle kept in this country, 50 per cent. were said to be kept at a loss, 25 per cent. returned no profit, and only 25 per cent. were profitable to their owners. The business of milk production and distribution was not generally, save by the large concerns, conducted in a systematic manner. However practical the men engaged in the work might be, they were not scientifically trained in the different steps of tillage, planting, storing, and feeding, nor in properly housing and caring for cattle, nor in handling and transporting milk. The men were all engaged in handling the most perishable of foods; the only one that did not rise and fall in price with the demand for it, and the cost of its production. Men in the milk business worked every day in the year, in the heat and in the cold, on Sundays and holidays. The demands of the public compelled work and delivery at early and unusual hours, so that fresh (?) milk might be on hand for breakfast. The speaker then discussed in detail the municipal regulation of the milk supply, beginning with the inspection and control of the dairy, the proper method of the transportation and delivery of the milk, and the strict enforcement of the city milk ordinances. The latter, he said, required a sufficient number of inspectors to really inspect, and to collect from each wagon at least one monthly sample for bacteriological and chemical examination, with at least a bimonthly sample from each store offering milk for sale. There should be a daily inspection of the incoming milk at each railroad station for (a) condition of and housing of cans and bottles of milk in shipment; (b) condition of empty cans reshipped; (c) temperature of milk; (d) inspection of railroad samples to guard the retailers against fraud on the part of the wholesalers. Thus the city provided for the bacteriological and chemical examination of the milk supply, the wagons and stores, and inspection. The country end of the work was of even greater importance. The territory from which the city drew its milk supply must be mapped, the dairies plotted, the roads examined, the railroad facilities noted, and the routes laid out so that every farm shipping milk to the city might in the beginning be subjected to systematic bimonthly inspection. No milk must be permitted to enter the city until the seal of inspection had been placed upon it by the inspector.

State Regulation of the Milk Supply.—Dr. E. B. VOORHEES of New Brunswick, N. J., Director of the New Jersey Agricultural Experiment Stations, stated that the objects to be attained by State regulation of milk supplies should be (1) to provide a healthy and wholesome food product and (2) to encourage the producer in his efforts to make a clean and healthful product. This control should be both restrictive and educative; restrictive in prohibiting certain methods of practice which resulted in an unclean product, and educative because the matter of control was reasonable. The laws that had been enacted in the past had not been altogether reasonable, and because many unnecessary, foolish, and impracticable methods of control had been adopted by State and municipal authorities, much misapprehension existed in the minds of both producers and consumers concerning the usefulness of any control, as well as the possibilities and probabilities of danger from the use of milk that had not been subjected to such control. The producer had rights upon which unwise and unjust regulations infringed; he had undoubtedly suffered in the past, and was now suffering from exaggerated notions in reference to the dangers of using milk, and methods of prevention which had been incorporated into law. On the other hand, it was surely right that the State should exercise proper supervision over the possible sources of danger, mainly in the matter of the production and sale of the milk, and along the following lines: (1) The health of the animals; (2) the food and water supply of the animals; (3) the stabling of the animals and care of milk on the farm; (4) the sale of milk of varying composition. In the first three directions the control had reference directly to the conserving of the public health; in the fourth it had reference entirely to the sale of milk as a commodity, and the regulations should not be prohibitive, but permissible. The State should also make such regulations for the retailer as shall guarantee proper care in transporting and storing of the milk and its distribution, as well as the requisite cleansing and return of the vessels in which the milk had been transported, although in all cases the regulations should be so reasonable as to make it possible to have them complied with. Dr. Voorhees, after discussing in detail these various State regulations, said the whole matter of milk control was largely one of education and fair dealing. The State could assist in securing it by limited and reasonable restrictive measures, whose execution was in the hands of intelligent officers.

Milk as a Food.—Dr. HENRY D. CHAPIN said that milk was such a commonplace article of diet that it was somewhat difficult to approach the subject from a purely scientific standpoint. Such an investigation would show that milk was supplied to young animals for a certain period after birth, and that it was a food, because growth and increase in weight occurred when no other form of nourishment was taken. A study of the processes of re-

production would show that milk was not the only form of food supplied by the mother. Before birth occurred three different methods of feeding were employed by the mother and three different kinds of food were supplied, these different methods of feeding gradually passing from one into the other. The young animal, before birth, was continuously changing its form and structure, and the form of the food and the method of supplying it changed as fast as the changes in the young animal took place. Milk was not supplied at birth, but colostrum, which was gradually displaced by milk, and the latter, in turn, was displaced by solid food. Milk was the last of five special forms of food supplied by the mother during a period of very rapid development, and it was especially adapted to young animals just before they were ready to subsist on solid food. Comparative examinations of the milk of different species of animals showed that they were not alike in composition or in their behavior with pepsin and acid. The digestive processes of these different species of animals were also unlike, which led to the conclusion that nature purposely made milks unlike because they were intended to be suitable for animals with different nutritive requirements and different digestive processes. Milk was a special form of food supplied during the period in which the digestive organs were developing; milk was a complete food, but this statement was correct only when applied to mother's milk, for the milk of some species contained so much less of the various ingredients than the milk of other species that it would be a starvation diet for some young animals, even if they had the proper digestive properties. The attention of the medical profession could not be too strongly directed to the fact that pure cow's milk was used as a food only in feeding adults and older children, and here it caused little or no trouble. The feeding of pure, natural, fresh cow's milk to infants was not common, especially when they were young. In feeding infants, mixtures or new compounds derived from cow's milk were generally employed, many of which had none of the digestive properties of cow's milk. The properties of pure cow's milk as a food were pretty well understood. What the practising physician needed to become familiar with was the properties of the derivatives of cow's milk he used in his practice many times more frequently than he used pure milk.

Dr. Ransford E. Van Gieson of Brooklyn said that careful attention to the papers of the evening had only convinced him more strongly of the fact that we had still a great deal to learn concerning the chemistry of the proteids of human and cow's milk. For example, the difference between cow casein and human casein was very great, both in its physical and chemical properties. As regarded the composition of cow's milk, the only figures to depend on were those derived from an average analysis of a large number of animals. While the pasteurization of milk had its drawbacks, it also possessed undeniable advantages, especially during the heated term, and to that extent it might be regarded as a necessary evil.

Dr. Edward F. Brush of Mt. Vernon, N. Y., said he had been interested in the milk question for many years. While much had been written and said regarding the dangers of typhoid and tubercle and other bacilli in milk, they were not the only factors to be considered. During the hot weather, cows were not infrequently tormented by flies or dogs, or all were to feed on poisonous weeds, and under such conditions the milk of these animals might contain toxins which were a potent factor in the causation of diarrheal diseases. The dairy cow was subject to almost all the ailments to which the human being was subject, and the speaker recalled several instances where he had been able to convince himself that epidemics of scarlet fever were conveyed through the medium of cow's milk. Dr. Brush said he did not agree with one of the previous speakers that the cow was naturally a clean animal, but in spite of the fact that we utilized her milk during life and her flesh after death there was no reason why she should not be given preference to the horse as regarded stable care and pasturage, the contrary, however, was quite the rule. In speaking of the tuberculin test in cattle, Dr. Brush said that while he did not doubt its value, the work in the beginning was too often intrusted to inexperienced and at times ignorant men, with little else than a thermometer to guide them, and he knew of instances where excited and nervous, but otherwise healthy cattle were sacrificed as the result of their overzealous efforts. On the other hand, every possible ill which the cow was heir to had been attributed to tuberculosis. This work should be intrusted to skilled veterinarians, who were capable of making a correct diagnosis and instructing the farmer how to breed his cows.

Dr. William H. Park said he did not agree with Prof. Conn that the great majority of bacteria in ordinary milk were harmless. The lactic acid variety covered a multitude of types, including the colon bacillus which was not at all harmless. The bacterial standard of milk, to which several of the speakers had referred, was employed chiefly to detect whether the milk was clean or not, and how long it had been on the market. In the present stage of our knowledge regarding milk bacteriology, it was scarcely possible to pick out the different types of bacteria. The essential features in the proper care of milk were to keep it cold, to keep the dirt out and to keep the time down. The term "commercial pasteurization," which one of the speakers had employed, was a rather indefinite one. One firm, for example, might pasteurize milk by exposing it to a temperature of 160° for one minute, while another might accomplish the same purpose by exposing it to a temperature of 140° for thirty minutes. In connection with pasteurization, the time and temperature must be considered.

Dr. Charles E. North said the problem of the milk supply in New York City was unique and rather peculiar, as he had learned from personal experience. The man who sold the milk in the city did not own either the farm or the cow, and had utterly lost control of the supply. On the other hand, it was difficult to teach the dairy farmer how to produce the kind of milk the public demanded. Clean, raw milk was what the public wanted, but under present conditions it was absolutely impossible for the average producer to supply it. To obtain it, we required a new kind of farmer—men of more intelligence and capital. At present, we were menaced by a flood of dirty and contaminated milk, and in order to protect the public from the disease germs that it contained it was advisable to resort to pasteurization. He believed that a large part of our milk supply would require pasteurization for a long time to come.

Mr. George L. Flanders of Albany, N. Y., an Assistant Commissioner of Agriculture of the State of New York, said he had listened to a number of discussions on the question of pure milk, particularly from a bacteriological standpoint, and they had all impressed him strongly with the view that, in order to obtain pure milk, the proper place to begin was at the source of the supply. In the State of New York there were 1,800,000 milk cows, and much work had been done throughout the State during the past fifteen years by the Department of Agriculture in trying to educate the milk producing farmer how to care for the cows and handle the milk. As a result of this work, the people in the cities of the State to-day were receiving better milk than ever before. One of the great drawbacks, however, in producing the result desired had been that the middleman had been able to manipulate the prices so that the producer could scarcely afford to follow the instructions as to the best methods of producing pure, clean milk. In reply to a criticism made by Dr. Brush that the work of examining cattle had been intrusted to men who were ignorant and inexperienced, Mr. Flanders said that perhaps Dr. Brush was unaware of the fact that these men were all college graduates and experienced veterinarians.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

OHIO STATE BOARD OF REGISTRATION AND EXAMINATION.

December 11, 12, *and* 13, 1906.

PHYSIOLOGY.

1. How are foods classified? Describe each class.
2. Where and by what secretions are nitrogenous foods digested?
3. Describe the process of blood coagulation.
4. Describe a heart beat.
5. What part of digestion takes place in the duodenum?
6. What changes does the blood undergo in respiration, and how is it accomplished?
7. What conditions hasten and what retard absorption?
8. Describe a serous membrane, and name its office.
9. What is meant by the term blood pressure?
10. How is the heat of the body maintained?

OBSTETRICS.

1. Name the varieties of ectopic pregnancy. Give briefly the symptoms and signs by which it may be recognized.
2. How determine before labor the presentation and position of fetus without making a vaginal examination?
3. How, during pregnancy, may death of the fetus be recognized?
4. Name some conditions which would warrant the induction of premature labor.
5. How distinguish one shoulder from another when the elbow and hand cannot be reached?
6. What conditions would cause you to make a craniotomy or embryotomy rather than a cesarean section?
7. How should labor be induced at about the seventh or eighth month?
8. Give briefly the pathology of so-called milk leg.
9. In about what period of time should the second stage of labor be concluded? Why?
10. Give briefly the symptoms of rupture of the uterus and outline its management.

DISEASES OF WOMEN.

1. Classify uterine hemorrhage and give some of the causes.
2. Give treatment for nausea and hyperemesis of pregnancy.
3. Give some of the causes and treatment for pruritus vulvæ.
4. Give some of the aids and hindrances to involution.
5. Name three diseases of mammary glands; give their treatment.

DISEASES OF CHILDREN.

1. Symptomatology and treatment of rickets. From what must it be differentiated?
2. How would you treat a child, age two years, who is suffering with vomiting and diarrhea?
3. Diagnosis and management of chorea in children.
4. Diagnosis, prognosis, and treatment of inherited syphilis.
5. Give the period of incubation of whooping cough, measles, scarlet fever, diphtheria, chickenpox, and mumps.

SURGERY.

1. Define surgical diseases; give an example with treatment for same.
2. Classify fractures and dislocations of the shoulder.
3. How do you dress a fractured clavicle?
4. Describe technique of surgical treatment for empyema.
5. Describe technique of cholecystostomy.
6. How frequently should you catheterize an unconscious patient?
7. Describe operation for varicocele.
8. What is the danger of surgical treatment of corns and bunions in old people, and why?
9. Give a simple formula for hypodermoclysis and what conditions call for its use.
10. Give symptoms and treatment of intussusception of bowels.

CHEMISTRY.

1. Define acid, base, and salt.
2. What inorganic salts enter into the formation of bone?
3. What is chemical affinity, cohesion, and adhesion?
4. What are the properties of an acid? of an alkali?
5. What is an oxide?
6. What is chloroform? How made?
7. What is the difference between fermentation and putrefaction?
8. What is the antidote to carbolic acid?
9. Describe a method of preparing oxygen.
10. Name three mineral poisons and give their antidotes.

MATERIA MEDICA AND THERAPEUTICS.

1. Upon what does the activity of hydrogen peroxide depend? How is it employed in medicine?
2. For what purpose is cold employed as a therapeutic agent; how does it produce its effects?
3. In what way may exercise act as a therapeutic agent?
4. What is heroin? Describe its physical properties and physiological action; give some indications for its use.
5. Write a prescription for a patient suffering from cystitis with ammoniacal urine.
6. Describe the lethal effects of hydrocyanic acid.
7. Write a prescription for a patient with broken cardiac compensation.
8. How does quinine produce its effect in malaria?
9. From what is eserine obtained? Describe its action.
10. How graduate the dose of a remedy to the age of a patient?

ANATOMY.

1. What vessels unite to form the inferior vena cava? Describe its course and termination.
2. Give the origin, course, and branches of the axillary artery.
3. Describe the medulla oblongata.
4. Give the distribution of the pneumogastric nerve.
5. Describe the larynx.
6. What are Peyer's glands? Where are they found?
7. Describe the gall-bladder, giving its location and relations.
8. Give the names of five muscles of the shoulder and arm.
9. What is the diaphragm? Where is it situated? Mention the principal opening in the diaphragm.
10. Give the origin, insertion, and action of the deltoid muscle.

PHYSICAL DIAGNOSIS.

1. How discriminate organic from functional murmurs of the heart?
2. Give pathological significance of aortic murmurs.
3. State pathological significance of herpes labialis.
4. State indications suggested by the reflex vomiting.
5. What are the indications suggested by hiccough?
6. State pathological significance of blood in the stools.
7. State physical signs of an effusion in acute pleurisy.
8. Describe the methods of palpation to ascertain the condition of the kidneys.
9. State pathological significance of the general distention of the abdomen.
10. State pathological significance of rigid recti muscles of the abdomen.

PRACTICE AND PATHOLOGY.

1. Name some of the causes of constipation, and give dietetic and hygienic treatment.
2. Describe the changes that follow generalized arterio-sclerosis.
3. Differentiate between catarrhal jaundice, gallstones in the common duct, and malignant growth affecting common duct.
4. Locate the lesion in paralysis of the right arm and leg, and left side of the face.
5. Describe the process of healing by the blood clot dressing, *i.e.* where the cavity is allowed to fill with blood and is then closed.
6. How do carcinoma and sarcoma differ from each other?
7. Diagnose and give treatment of erysipelas.
8. Diagnose and give treatment for dysentery.
9. What is acne? How do you treat it?
10. Give symptoms, diagnosis, and treatment of epilepsy.

***It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.**

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

OHIO STATE BOARD OF REGISTRATION AND EXAMINATION.

December 11, 12, *and* 13, 1906.

PHYSIOLOGY.

1. Foods are classified as follows:

I. Inorganic { Water. / Salts

II. Organic { Non-nitrogenous { Carbohydrates / Fats ; Nitrogenous—Proteids.

2. Nitrogenous foods are digested in (1) the stomach, by the pepsin of the gastric juice; and in (2) the small intestine, by the trypsin of the pancreatic juice.

3. When blood is withdrawn from the blood-vessels of the living body, it first becomes viscid, then sets, and is converted into a jelly-like mass. This is due to the formation of fibrin. The jelly contracts forming the clot; and at the same time the serum is squeezed out from the clot. Various circumstances and conditions will hasten or delay the process of coagulation. In man, the blood generally becomes viscid in from two to three minutes; it forms the jelly-like mass in from five to six minutes; a few minutes later the serum begins to appear; and the whole process is completed in from twenty-four to thirty-six hours. The clot then floats on the serum. The process is thus summed up by Halliburton: In the plasma a proteid substance exists, called Fibrinogen. From the colorless corpuscles a nucleo-proteid is shed out, called Prothrombin. By the action of calcium salts prothrombin is converted into fibrin ferment, or Thrombin. Thrombin acts on fibrinogen in such a way that two new substances are formed: one of these is unimportant and remains in solution; the other is important, viz., Fibrin, which entangles the corpuscles, and so forms the clot.

5. The proteids are converted into proteoses and peptones, the starches are converted into maltose, fats are emulsified and saponified, and the casein of milk is curdled.

6. The respiratory changes in the blood: (1) In the *lungs,* the blood is changed in color, gains oxygen, loses carbon dioxide, loses heat, and loses watery vapor. (2) In the *capillaries of the body,* the blood loses oxygen and receives carbon dioxide.

7. Substances in a liquid or gaseous state are absorbed more readily than solids. The more dense the fluid the slower the absorption. The more tense and full the blood-vessels the slower the absorption. The more rapid the circulation the quicker the absorption.

8. The pericardium may be taken as an example of a serous membrane. It consists of two layers, a visceral and a parietal. The free surface is covered with a single layer of endothelium, which rests upon a connective tissue stroma. Between the endothelial cells are stomata. Serous membranes are supplied with blood-vessels, lymphatics, and a few nerves. The office of a serous membrane is to secrete a fluid for the lubrication and protection of the organ or organs with which it is in contact.

9. By the term *blood pressure* is meant the pressure on the blood due to (1) the ventricular systole, (2) the elasticity of the walls of the arteries, and (3) the resistance in the capillaries.

10. The heat of the body is *maintained* by the thermotactic centers in the brain and cord keeping an equilibrium between the heat gained or produced in the body and the heat lost. Heat is *gained* to the body by (1) the muscles, during contraction; (2) the secreting glands; (3) the brain, during mental activity; and (4) by the ingestion of food and hot liquids.

Heat is *lost* to the body by (1) the skin, through evaporation, radiation, and conduction; (2) the lungs; and (3) the excretions (feces and urine).

OBSTETRICS.

1. The varieties of ectopic pregnancy are: (1) Tubal, (2) interstitial, (3) ovarian, and (4) abdominal.

In differentiating this condition from a normal pregnancy, the following signs and symptoms are of most reliance. "When extrauterine pregnancy exists, there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility. Nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy. Pains are often very severe, with marked tenderness within the pelvis. Such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating. This tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The os uteri is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 *are positive signs.*" (*American Text-Book of Obstetrics.*)

3. Symptoms of death of fetus are: cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements are absent, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time, crepitus of its cranial bones may be elicited.

4. Conditions warranting the induction of premature labor: (1) Certain pelvic deformities, (2) placenta prævia, (3) pernicious anemia, (4) toxemia of pregnancy, (5) habitual death of the fetus toward the end of pregnancy, (6) hydatidiform mole.

5. "*Diagnosis of one shoulder from the other when the hand and arm are not tangible:* 1. Observe the opening of the axilla: it always points toward the child's feet. If the feet be, therefore, toward the *right* side of the pelvis, the *head* will be toward the *left* side.

"2. The scapula, its spinous process especially, will indicate whether the child's back be toward the pubes or toward the sacral promontory.

"3. A moment's reflection will show that a child lying across the pelvis (let the reader imagine *himself* to be lying across it), with its *head* in the *right* iliac fossa, and its *back* to the *pubes, must* be presenting its *left* shoulder to the pelvic brim—the 'position' of the 'presentation' being, necessarily, right cephalo-iliac (dorso-anterior). If the axillary opening show the head to be in the *left* iliac fossa, and the position of the scapula show the child's back to be toward the mother's sacrum, it will still be the left shoulder presenting, the *position,* however, being left cephalo-iliac (or dorso-posterior).

"The same data and deduction may be used for the right shoulder and its two 'positions.'" (King's *Obstetrics.*)

6. "Embryotomy is indicated to-day in but two conditions: First, in all instances in which the fetus is *dead* and delivery of the unmutilated fetus would increase the danger for the mother. Second, upon the *living* fetus in obstructed labor due to monstrosity; and in exceptional cases in which the mother's condition, from hemorrhage, repeated attempts at delivery, sepsis, or shock, is such as to render embryotomy by far the safer operation." (Edgar's *Obstetrics.*)

8. Milk leg may follow puerperal sepsis in which there is a thrombosis of the iliac or femoral vein. Sometimes it occurs after a uterine phlebitis, in which clots are carried from the uterine sinuses to the hypogastric veins, where they cause obstruction to the blood flow in the crural veins. The trouble may also begin as a crural phlebitis. It is thus due either to cellulitis or to thrombosis.

9. The second stage of labor usually lasts from one and a half to two hours. While this is the average time, the process may be much prolonged. It may last twenty-four hours without serious consequences. No rule can be laid down as to when interference should be permitted. Each case must be taken on its own merits. If labor is unduly prolonged, much damage may be done to the maternal tissues, sloughing, fistulæ, etc., may result; and the fetus may also suffer. Shock, exhaustion, and greater liability to sepsis are also more likely to occur.

DISEASES OF WOMEN.

1. The following (from Gould and Pyle's *Cyclopedia of Medicine and Surgery*) is a useful classification of uterine hemorrhages, and also gives the causes of the same:

1. *Hemorrhages Complicating Pregnancy, Labor, or the Puerperium:*

A. Hemorrhages of Pregnancy: caused by (1) placenta prævia; (2) premature separation of a normally situated placenta; (3) apoplexy of the decidua or placenta.

B. Hemorrhages of Labor: caused by (1) placenta prævia; (2) premature separation of a normally situated placenta; (3) relaxation of the uterus; (4) laceration of the cervix; (5) rupture or inversion of the uterus.

C. Hemorrhages of the Puerperium: caused by (1) retained secundines; (2) displaced uterus;

(3) displaced thrombi; (4) fibroid tumors; (5) hypertrophied decidua; (6) carcinoma.

II. *Hemorrhages Occurring in the Non-Pregnant Woman:*

A. In Virgins Before the Age of Thirty: caused by (1) uterine congestion, the result of cold or exposure; (2) endometritis; (3) polypi and fibroid tumors.

B. In Married Women Before the Age of Thirty: caused by (1) subinvolution; (2) laceration of the cervix; (3) endometritis; (4) retrodisplacements of the uterus; (5) polypi and fibroid tumors.

C. In Women After the Age of Thirty: caused by (1) carcinoma of the cervix; (2) carcinoma of the body of the uterus; (3) sarcoma of the uterus.

3. Pruritus vulva may be *caused by:*—parasites; diseases of the vulva, as inflammation, edema, vegetations, congestion, irritating discharges, lack of cleanliness, diabetic urine; it may also be of nervous origin, or idiopathic.

Treatment consists in removing the cause, if possible; cleanliness, fresh air, tonics, and general attention to hygiene; local applications of solution of biehloride of mercury, 1:2,000; or carbolic acid, 1:100; or lead and opium; dusting powders of bismuth subnitrate, calomel, or zinc oxide are also useful.

4. The following are some of the *aids to involution:*—good health before labor; a labor not too long or fatiguing; absence of inflammation, sepsis, or laceration; a sufficient amount of rest after the confinement; neither too early rising after the labor, nor too long lying constantly upon the back; nursing the baby; and the administration of ergot. The opposite conditions are *hindrances to involution.*

DISEASES OF CHILDREN.

5. The period of incubation of whooping cough is from three to fourteen days; of measles, ten to fourteen days; of scarlet fever, a few hours to seven days; diphtheria, a few hours to seven days; chickenpox, about fourteen days; mumps, fourteen to twenty-one days.

SURGERY.

1. A surgical disease is a disease that is amenable to surgical treatment, *e.g.* a boil.

6. Every four to six hours.

8. Gangrene may ensue; due to the enfeebled circulation.

CHEMISTRY.

1. An *acid* is a compound of an electro-negative element or radical with hydrogen, part or all of which hydrogen it can part with in exchange for an electro-positive element, without the formation of a base.

A *base* is a ternary compound capable of entering into double decomposition with an acid to produce a salt and water.

A *salt* is a substance formed by the substitution of an electro-positive element for part or all of the replaceable hydrogen of an acid.

2. Calcium phosphate, calcium carbonate, calcium fluoride, magnesium phosphate, and sodium chloride.

3. *Chemical affinity* is that force which holds together the atoms in a molecule.

Cohesion is the force by which molecules of the same kind are held together.

Adhesion is used with two meanings: (1) the force by which unlike molecules are held together. (2) The force which binds together the surfaces of masses when in contact.

4. The properties of an *acid* are: (1) It contains hydrogen; (2) part or all of its hydrogen can be replaced by a metal (or its equivalent), and a salt is thereby formed; (3) it can change the color of many organic substances; (4) when soluble in water it has an acid or sour taste.

The properties of an *alkali* are: (1) It is strongly basic; (2) it is alkaline in reaction; (3) it will saponify fats.

5. An *oxide* is a compound of oxygen with another element.

6. Chloroform is a substitution product of methane. Three of the four hydrogen atoms of methane are replaced by three atoms of chlorine; hence the formula is $CHCl_3$, and the proper name would be Trichlormethane.

Chloroform can be obtained by heating chloral hydrate with an alkali:

$$C_2HCl_3(OH)_2 + KHO = CHCl_3 + HCOOK + H_2O$$

7. *Fermentation* is the decomposition of organic matter containing carbon, hydrogen, and oxygen only. When it also contains nitrogen and sulphur the process is called *Putrefaction.*

8. Alcohol.

9. Oxygen can be prepared by heating potassium chlorate:

$$2KClO_3 = 2KCl + 3O_2$$

10. (1) Arsenic; antidote, freshly prepared ferric hydroxide. (2) Corrosive sublimate; antidote, white of egg in moderation. (3) Phosphorus; antidote (physiological), old French oil of turpentine.

MATERIA MEDICA AND THERAPEUTICS.

1. The activity of hydrogen peroxide depends upon the readiness with which it gives up oxygen to oxidizable substances with which it comes in contact.

It is employed in the form of the solution:—Aqua Hydrogenii Dioxidi, which contains about ten volumes of available oxygen.

2. Cold is employed:—for its local effect on inflammatory processes; for neuralgias; as a local anesthetic; to reduce the body temperature; to relieve cardiac palpitation; in meningitis; for insomnia; by rectal injection in dysentery.

"Cold causes relief of pain in inflammation by producing contraction of the local blood-vessel walls. As a result inflammatory exudates do not occur, congestion is relieved, and as the pressure on the nerve filaments ceases the pulsating pain of inflammation passes away." (Hare's *Practical Therapeutics.*)

3. The following from Parkes' *Practical Hygiene* will answer this question: "The effects of exercise on the body are as follows: (1) Increased force and frequency of the heart's action, and the increased circulation of the blood through all parts of the body. (2) The pulmonary circulation being quickened, more carbonic acid and water are taken to the lungs and eliminated. The amount of air inspired and expired is largely increased, and the oxygenation of the blood is consequently accelerated. (3) The action of the skin is heightened, and perspiration becomes marked, large quantities of sweat being poured out of the sweat glands. The evaporation of the sweat from the surface of the body regulates the temperature and prevents any rise above the normal. (4) The water and salt of the urine are decreased owing to the large cutaneous secretion, but the nitrogen (in the form of urea, uric acid, and extractives) is unaffected. In the period of rest following excessive exercise, the nitrogen elimination may be slightly increased. (5) The voluntary muscles are brought into active play; the circulation of the blood through them is accelerated; waste products are rapidly carried away for excretion; while the material for new tissue is brought to them."

4. Heroin is a derivative of morphine; it is formed from morphine by substituting acetyl for its two hydroxyls. It is a colorless, odorless powder; crystalline, with a somewhat bitter taste, and is insoluble in water. The hydrochloride, however, is soluble in water.

Its action is to quiet the respiratory centers; and it is used chiefly for quieting cough.

5. ℞ Hexamethylenaminæ ʒij.
Aquæ destillatæ q. s. ad ʒiv. M.
Sig.:—One teaspoonful every three hours.

9. Eserine is *obtained* from Physostigma.

Its *action* is:—(1) to contract the pupil; (2) to stimulate involuntary muscle fibers; (3) a mild nervous sedative; (4) it increases peristalsis.

10. Let x = the age of a patient; then $\frac{x}{x+12}$ = the fraction of the adult dose which the patient should receive. Thus, a patient of four years old should receive $\frac{4}{4+12} = \frac{4}{16} = \frac{1}{4}$ of an adult dose.

PHYSICAL DIAGNOSIS.

1. *Organic murmurs* are due to stenosis or incompetency of one or more of the valves of the heart.

Functional murmurs are not due to valvular disease.

Organic murmurs may be systolic or diastolic; may be accompanied by marked dilatation or hypertrophy, and there will probably be a history of rheumatism or of some other disease capable of producing endocarditis. Whereas a murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a *hemic* or *functional* murmur, and denotes as a rule an impoverished condition of the blood.

2. *Aortic murmurs* may signify: (1) aortic stenosis; (2) aneurysm of the arch of the aorta; (3) aortic regurgitation. In the latter case the murmur is diastolic; in the two former, it is systolic.

3. *Herpes labialis* may signify:—(1) slight feverishness; (2) coryza; (3) bronchitis; (4) pneumonia; (5) digestive disturbances; (6) cerebrospinal fever; (7) approaching menstruation; and (8) it may be a neurosis.

4. *Reflex vomiting* may indicate:—meningitis; pregnancy; astigmatism; irritation of the fauces; worms; uterine, tubal, or ovarian disease.

5. *Hiccough* may indicate:—several of the gastrointestinal disorders; epilepsy, hysteria, meningitis, cerebral tumors; gout; diabetes; typhoid; alcoholism; nephritis.

6. *Blood in the stools* may indicate:—(1) traumatism; (2) acute inflammation of the bowels, as in enteritis and dysentery; (3) chronic heart or liver disease; (4) scurvy, purpura or infectious fevers; (5) rupture of an aneurysm; (6) ulcers in the intestine; (7) intussusception; (8) the passage of blood from the stomach in hematemesis; (9) hemorrhagic infarction of the bowel from embolism or thrombosis of the mesenteric artery; (10) piles, fissure, or fistula. (From Steven's *Practice of Medicine*.)

9. *General distention of the abdomen* may signify:—Tumors, ascites, pregnancy, tympanites, peritonitis, cretinism, enlarged mesenteric glands.

10. *Rigid recti muscles* may signify:—appendicitis or peritonitis.

PRACTICE AND PATHOLOGY.

2. In the smaller blood-vessels the lumen may become nearly obliterated (endarteritis obliterans). There may be cardiac hypertrophy; thrombosis may occur; the thrombi may become organized, or emboli may be formed; connective tissue hyperplasia is apt to occur.

4. The lower part of the pons, on the left side.

6. *Carcinoma* is derived from the epiblast or the hypoblast; possesses a stroma, in which are both blood-vessels and lymphatics; metastasis occurs by the lymphatics.

Sarcoma is derived from the mesoblast; it has no stroma and no lymphatics; metastasis occurs by the blood-vessels which are in contact with the cells.

BULLETIN OF APPROACHING EXAMINATIONS.†

STATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery.	Montgomery	June	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July	1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July	9
California	Chas. L. Tisdale, Alameda	San Francisco	August	20
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July	9
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W. C. Woodward, Washington	Washington	July	11
Florida*	J. D. Fernandez, Jacksonville	Jacksonville		
Georgia	E. R. Anthony, Griffin	Atlanta	October	8
Idaho	J. L. Conant, Jr., Genesee	Boise	October	1
Illinois	J. A. Egan, Springfield	Chicago	June	19
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	May	28
Iowa	Louis A. Thomas, Des Moines	Des Moines	June	11
Kansas	T. E. Raines, Cotcordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	22
Louisiana	F. A. La Rue, 211 Camp St.	New Orleans		
Maine	Wm. J. Maybury, Saco	Augusta	July	9
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	18
Massachusetts*	E. B. Harvey, State House, Boston	Boston		
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	W. S. Fullerton, St. Paul	St. Paul	June	4
Mississippi	J. F. Hunter, Jackson	Jackson		
Missouri	J. A. B. Adcock, Warrensb'g	Mexico	July	9
Montana*	Wm. C. Riddell, Helena	Helena	October	1
Nebraska	Geo. H. Brash, Beatrice	Lincoln	May	28
Nevada	S. L. Lee, Carson City	Carson City		
N. Hamps're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	June	3
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo		
N. Carolina*	G. T. Sikes, Grissom	Morehead City		
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July	2
Ohio	Geo. H. Matson, Columbus	Columbus	June	11
Oklahoma*	J. W. Baker, Enid	Guthrie	June	11
Oregon	B. E. Miller, Portland	Portland		
Pennsylvania	N. C. Schaeffer, Horrisburg.	Philadelphia, Pittsburg	June	25
Rhode Island	G. T. Swartz, Providence	Providence	July	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	11
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville		
Texas	T. T. Jackson, San Antonio	Austin		
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City	July	7
Vermont	W. Scott Nay, Underhill	Burlington	July	9
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A. Barbee, Point Pleasant	Charleston	July	9
Wisconsin	J. V. Stevens, Jefferson	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenne	June	10

* No reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State

Medical Items.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 18, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
Florida, Duval Co., Jacksonville	April 27–May 4	1	
Santa Rosa County	April 27–May 4	3	
Georgia, Augusta	April 30–May 7	1	
Illinois, Belleville	April 20–27	1	
Springfield	May 2–9	2	
Indiana, Elkhart	May 4–11	1	
Indianapolis	April 28–May 5	5	
South Bend	April 28–May 11	8	
Iowa, Ottumwa	April 28–May 4	7	
Kansas, Lawrence	April 1–30	2	
Kentucky, Louisville	May 2–9	3	
Louisiana, New Orleans	April 27–May 4	9	
Massachusetts, Chelsea	April 27–May 4	1	
Lawrence	April 27–May 4	4	
Pittsfield	May 4–11	1	1
Michigan, Detroit	April 28–May 11	9	
Holly	Dec. 10–April 3	75	Estimated
Minnesota, Stillwater	April 1–30	8	
Missouri, St. Joseph	April 27–May 4	10	
St. Louis	April 27–May 4	1	
New York, Buffalo	April 27–May 4	2	
New York	April 27–May 4	3	
Niagara Falls	April 27–May 4	2	
North Carolina, Gerrnaboro	April 27–May 4	3	
Ohio, Toledo	April 27–May 4	2	
Pennsylvania, New Castle	April 1–30	1	
South Carolina, Charleston	April 1–30	1	
Tennessee, Memphis	May 4–11	1	
Texas, Bell County	May 6	3	
San Antonio	April 27–May 4	1	
Virginia, Richmond	April 27–May 4	1	
Washington, Spokane	April 27–May 4	13	
Wisconsin, Milwaukee	April 27–May 4	7	

SMALLPOX—FOREIGN.

Austria, Trieste	April 13–20	2	
Brazil, Bahia	Mar. 23–April 13	17	
Para	April 13–27	4	
Rio de Janeiro	Mar. 30–April 14	1	1
Canada, Sherbrooke	April 1–30	44	
Vancouver	April 20–27	1	
Chile, Coquimbo	April 13		Present
Iquique	April 13		Present
China, Hongkong	Mar. 23–30	20	16
Columbia, Barranquilla	April 6–13		1
Cuba, Habana	May 3	1 on S.S. *Alphonso*	
Egypt, Cairo	April 8–15		
France, Paris	April 20–27	8	1
St. Etienne	April 1–15	1	
Germany, General	April 13–20	18	
Great Britain, Aberdeen	April 13–20	1	Imported
Liverpool	April 20–27	7	
India, Bombay	April 9–16		4
Calcutta	Mar. 30–April 8		87
Madras	April 6–12		1
Italy, General	April 22–29	18	
Palermo	April 13–20	1	1
Torre Annunziata	April 27	11	4
Turin	April 7–21	5	1
Mexico, Jalapa	April 28–May 5		2
Portugal, Lisbon	April 13–20	37	
Russia, Moscow	April 6–15	15	
Odessa	April 13–20	75	4
Riga	April 13–20	2	
Spain, Barcelona	April 10–20		4
San Feliu de Guixols, Spain	April 20–27		1
Spain, Valencia	April 21–28		
Turkey in Asia, Bassorah	Mar. 16–13		

YELLOW FEVER.

Brazil, Manaos	April 13–20		1
Para	April 13–27	17	8
Rio de Janeiro	Mar. 30–April 14	11	9
West Indies, Trinidad, Port of Spain	April 13–19	2	1

CHOLERA.

India, Bombay	April 9–16		2
Calcutta	Mar. 30–April 6		56
Rangoon	Mar. 30–April 6		7

PLAGUE—INSULAR.

Hawaii, Honolulu	May 10–12		2

PLAGUE—FOREIGN.

Brazil, Bahia	April 6–13	2		1
Para	April 13–27	4		3
Rio de Janeiro	Mar. 30–April 13	3		1
Chile, Antofagasta	April 13	29		-
Santiago	April 13			Present
Taltal	April 13			Present
China, Hongkong	Mar. 23–30	2		2
India, General	Mar. 23–30	62,807	55,681	
Bombay	April 9–16			405
Calcutta	Mar. 30–April 6			200
Rangoon	Mar. 30–April 6			100
Peru, Chepen	April 3–10	6		2
Lambayeque	April 3–10			1
Lima	April 3–10	3		2
Paita	April 3–10	9		9
Trujillo	April 3–10	5		5
Turkey in Asia, Orfah, Tor—Quarantine Station	Mar. 31–April 14	47		47
	Mar. 31	1		1

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Original Articles.

THE PHYSIOLOGICAL ACTION OF THE PANCREATIC ENZYMES, WITH SPECIAL REFERENCE TO HEMATOLOGY, URINOLOGY, AND CLINICAL PATHOLOGY.

By MARGARET A. CLEAVES, M.D.,

NEW YORK.

Digestive ferments should not be regarded therapeutically in any way other than medicinal agents. To that end a study of their action upon the blood and urine is not only of great importance, but of the first consideration.

In trypsin we have a drug possessed of great potentialities, and one which should not be allowed to remain an unchartered derelict on the sea of therapeutics, a perpetual menace, a veritable danger. I have no desire to enter the arena already strewn with eminent pathologists and surgeons, nor do I wish to advance or discuss "cancer cures"; but because of my experience in the enzymic treatment of cancer, supplemented by careful laboratory observation, it is daily enforced on me by those seeking my assistance in an advisory way that many are using the pancreatic ferments, with an impunity that can only be accounted for by a lack of concrete knowledge. The fatal results which are chronicled are not always due to cancer, but often to uremic poisoning from faulty therapeutic technique.

My reason for this paper is not to discuss the merits or demerits of the treatment advanced by Dr. John Beard, but to call attention to the dangers and discouragements of the treatment. That the seeming advantages of the treatment outweigh these dangers, from my point of view, goes without saying, or I would have discarded the pancreatic ferments as therapeutic agents. A secondary and very considerable consideration in my mind is that trypsin opens up a new field to the experimental physiologist and clinician in a certain class of diseases hitherto not linked together.

Despite the fact that it is impossible to do otherwise than to leave many gaps, it seems but logical to embody my clinical experience in a tentative report on the physiological action of the pancreatic ferments.

Enzymes.—Before entering upon a consideration of the physiological action and reaction induced by the trypsin treatment, it is first necessary to take up in detail the occurrence, nature, function, and action of enzymes. The facts cited must of necessity be fragmentary, as the sum total of the knowledge concerning enzymes is still in the stage of debatable theory.

Enzymes, of which trypsin is an example, are in some degree characterized by the following reactions and characteristics: They are exclusively of cell life, and no cell is without them; hence the deduction that enzymes are of necessity an accompaniment of proteid. Practically the only attempt to fix definitely the action of enzymes is that embodied in the theory of Arthus, who ascribed their qualities simply to natural laws. He finds an analogy between the enzymic properties of a cell and magnetism, basing his deduction upon the facts that enzymes and magnetism are both destroyed by heat, dissolved by acid, each impossible of isolation, and both are recognized by deeds rather than by perceptible matter.

The following formulas give the synthetic and general chemical reaction of enzymes:

$$C_3H_5—O—OC—C_3H_7+H_2O=C_2H_5OH+HOOC—C_3H_7$$

Ethyl butyrate + water = ethyl alcohol + butyric acid.

If water be added to ethyl butyrate the above equation takes place. The reverse equation is true, except that the reaction is never complete, but the reaction is so slow in the reverse equation that unless a catalytic agent is present the time required is very long. This is well brought out in Wells' Chemical Pathology,[1] the latest and best authority on the subject.

Synthetically, Taylor[2] was able to build up triolein by the action of lipase upon oleic acid and glycerine, and it is known that the intestinal wall splits proteids, which are rebuilt in other parts of the body. This must be done by enzymes, which reverse their usual action, and synthetically build up complex proteids from simpler bodies.

All enzymic action depends on the fact that the chemical reactions accomplished are everlastingly reversible and tend to an equilibrium. The action is also catalytic, and the tendency to find an equilibrium before a complete chemical reaction takes place must be remembered in connection with the administration of trypsin.

As a classical example of the synthetic action of enzymes the formation of hippuric acid from benzoic acid and glycocoll may be given. It is probable that enzymes can only act as dehydrating agents and oxydizers, or in establishing the reverse of these processes.

There are certain phenomena which enzymes and toxins have in common. Both act on cells to produce immune bodies known as antienzymes and antitoxins respectively; a specific enzyme acting on a suitable cell will produce a specific antienzyme just as surely as diphtheria will produce antidiphtheritic toxin. Toxicity is also a characteristic of the enzyme when injected into a body. Fiquet[3] gives the first action of trypsin as rendering the blood uncoagulable, but afterward the opposite effect is observed. Wells[4] in using trypsin and lipase found an acute inflammatory condition. A marked difference between enzymes and toxins is that strong solutions of enzymes are able to resist the action of the milder

germicides, when a weak solution of the enzyme is rendered inert.

Enzymes exist in the cell as inert bodies, zymogenic in form, and their activities only come after they are discharged from the cell, for example, in the case of trypsinogen, which is acted upon by the enterokinase of the intestinal wall to form active trypsin.

It is probable that enzymes are of stereochemical configuration in their construction; that is, they are built up on a central element having a definite valence, and hence, that all enzymes are capable of entering into chemical action with only those substances that attract and have an opposite isomeric form. Emil Fischer has proved that a different enzyme is needed for example to differentiate and act on two sugars, no matter how closely they are allied.

The pancreas yields three enzymes: Trypsin, amylopsin, and lipase. Of these trypsin is as exclusive in its action on the proteids as lipase is on the action of fats, and the third, amylopsin, acts on the carbohydrates.

Cases.—For the purposes of this paper the conditions treated of will be classified as follows, and a single case from each class will be selected for illustrative purposes: (1) Intestinal surgical interference; (2) postoperative; (3) inoperable; (4) metastases; (5) nonmalignant.

(1) Intestinal Surgical Interference.—Rectal adenocarcinoma. The original operation was performed seven years since and artificial anus formed; microscopical examination made by J. H. Wright of the Massachusetts General Hospital. Two subsequent operations, one to reunite the intestine (failed); the second fourteen to fifteen months since to change the lateral incision in the intestine to a cross cut, on account of the pocketing of the feces in the colon. At that time the mesenteric glands were found enlarged. This enlargement was regarded by the surgeon as malignant. At the time treatment was instituted, ten months since, the entire pelvis was filled with plaster-of-paris-like induration, as is common in the female pelvis. There was an ulcerated area about 1½ inches above the internal sphincter of a ragged nodular feel, the examining finger and irrigating catheter passing to the depth of four inches only. A condition of profound neurasthenia of long standing existed. Morphine had been taken off and on for two years, almost constantly for one year, one to two grains in twenty-four hours. There were obstinate constipation, loss of appetite, strength, and flesh, pain, discharge, odor, sense of weight, bearing down, and a sinking feeling in the pelvis, with inability to stand or walk save for a few moments only, and very short distances. In addition there were more or less constant fluctuations of temperature, exhausting night sweats, and intense sciatic and sacral pain. Length of life was estimated by the surgeon at one year, but the patient grew rapidly worse, leading the family physician to put it at from two to three months.

The enzyme treatment has been kept up for ten months, at first vigorously, later less frequently. At the beginning of treatment continuous irrigation of the cut off sigmoid flexure dislodged old fecal matter which, upon examination, showed tubercle bacilli. The masses are absorbed, there is absence of weight in the pelvis, absence of pain; no opiates have been used in eight months; there is no odor, no discharge, appetite fair, food is taken in sufficient quantities, the functions are normal, sleep good, good mental vigor, better than for over a year; the patient looks after his personal and professional interests and presents no evidence of progressive malignant disease; weight fluctuates, at present gaining.

At intervals of from four to six weeks during past six months there have been discarded from the rectum pieces of tissue, not necrotic, which have been found by Dr. Wm. M. Higgins to be destitute of malignant characteristics and showing the structure of an adenoma. The disused bowel has been carefully irrigated and is now empty of its fecal contents.

(2) Post Operative.—Carcinoma of uterus and bladder wall. Panhysterectomy, January 9, 1907, bladder wall torn and reunited; service of Dr. Louis J. Ladinski, N. Y. Polyclinic Hospital, by whose courtesy I was enabled to supervise the postoperative treatment, which was begun January 19, 1907; twenty days after operation, characteristic tryptoglycogenic reaction. (See Chart No. 1 for temperature curve.)

Result to date: Improved appetite and metabolism, softening of nodular tissues in vagina as in the illustrative rectal case, Class 1. Still under treatment. Odor and pain present at beginning of treatment now in abeyance.

(3) Inoperable.—Uterine. Microscopic examination in service of Dr. Vanderveer of Albany, who curetted one year since for hemorrhage. Adenocarcinoma, infiltration of both broad ligaments. Seen by Drs. Clement Cleveland and Robert T. Morris of New York City and declared inoperable by both. Uterus fixed, hard, cervix indurated, and both broad ligaments infiltrated.

Treatment instituted February 11, 1907. By March 1, induration of broad ligaments was markedly lessened, uterus movable. This case was seen during the eight weeks of treatment four times by Dr. Robert T. Morris, who on April 2 found that improvement had progressed to the point where he was willing to operate. Patient in good condition. Much improved in every way. Operation was arranged for a week later, but patient was called home on account of illness in family and despite the future gravity of the case, decided not to have the operation performed. In addition to the enzyme treatment, vaginal hydroelectric treatments, with the continuous current, were given twice a week. The body superficies was exposed to the action of light and static electricity used pretty constantly. This case showed the characteristic tryptoglycogenic reaction, but followed a very regular course from first to last. The daily range of the temperature was from normal to 99° in the morning, 99° at noon, and 100° at night—occasionally 101° and 102°.

(4) Metastases.—Amputation of right breast was performed in 1903: the patient was seen in 1907. Scirrhus cancer of left breast of extreme malignancy; microscopic examination by Dr. Wm. M. Higgins. One year in duration; metastatic involvement. Operable stage had been devoted to Christian Science. Growth absolutely fixed, involvement of cervical, axillary, mediastinal, subcutaneous, inframammary region, and inguinal glands. An invalid for thirty years. Digestive disturbances of years standing; insufficiency of hepatic and pancreatic function. Under treatment for three months. Pain in breast entirely relieved last four weeks of life save night preceding death, no breaking down of tissue, nutrition improved. Seen by Dr. Graeme M. Hammond of New York City three days before death, who pronounced it the

most healthy looking scirrhus cancer of the breast he had ever seen.

Patient died of exhaustion probably referable to action of toxins on vagus. Consciousness and mental activity to the last. No uremic symptoms.

(5) Nonmalignant.—Abdominal hysterectomy, October 18, 1906, by Dr. J. Riddle Goffe. Through his courtesy I had charge of the postoperative treatment. The indications for treatment were based upon the report of the pathologist, who gave a diagnosis of carcinoma. Later examination by another pathologist showed the section furnished to be benign in character. There was no tryptoglycogenic reaction. (See Chart No. 2 for temperature curve in contrast with Chart No. 1, of temperature in case illustrating Class 2.) Metabolism greatly improved and a gain of twenty pounds in weight.

Preparations.—Of the pancreatic ferments (Fairchild) two are used in every case, viz., an injection of trypsin which is prepared directly from the fresh pancreas gland especially for hypodermic use. It contains the trypsin in its normal association with the other soluble enzymes and constituents of the pancreas secretions. The second—amyolpsin—is a solution of pancreatic diastase (amylopsin) devoid of the proteolytic (trypsin) and fat-splitting (lipase) ferments. It is also especially prepared for hypodermic use.

Methods of administration: (1) Hypodermic, (*a*) into the subcutaneous tissues, (*b*) into the tumor mass; (2) by rectum; (3) by mouth. The administration of the pancreatic ferments is almost exclusively by hypodermic injections, combined with the local application of a pancreatic lotion and a trypsin powder in suitable localities. According to Graves,[4] unless the ferments are directly injected into the growth, no results are obtained. This is in direct opposition to my own observations.

In cases where there is very severe local reaction at the site of injection, rather than discontinue the use of trypsin, I have given it occasionally per rectum diluted in twice to three times its volume of sterilized water. In this way I have secured evidence of the action of the ferments, but not in the same degree as when used hypodermically. There has been slight chill, rise of temperature, tension and rigidity of diseased glands, and a slight but insufficient increase of the eosinophiles.

Macafee[5] reports a case of adenocarcinoma, uterine primary, rectal secondary, in which he gave the enzymic ferments (1) by mouth (2) in the colonic opening. No reaction was noted save once there were nausea, vomiting, and a rash which were controlled by letting up on the oral administration. The patient was markedly improved.

E. v. Leyden and P. Bergell[6] report that injections made directly into a carcinoma in man were

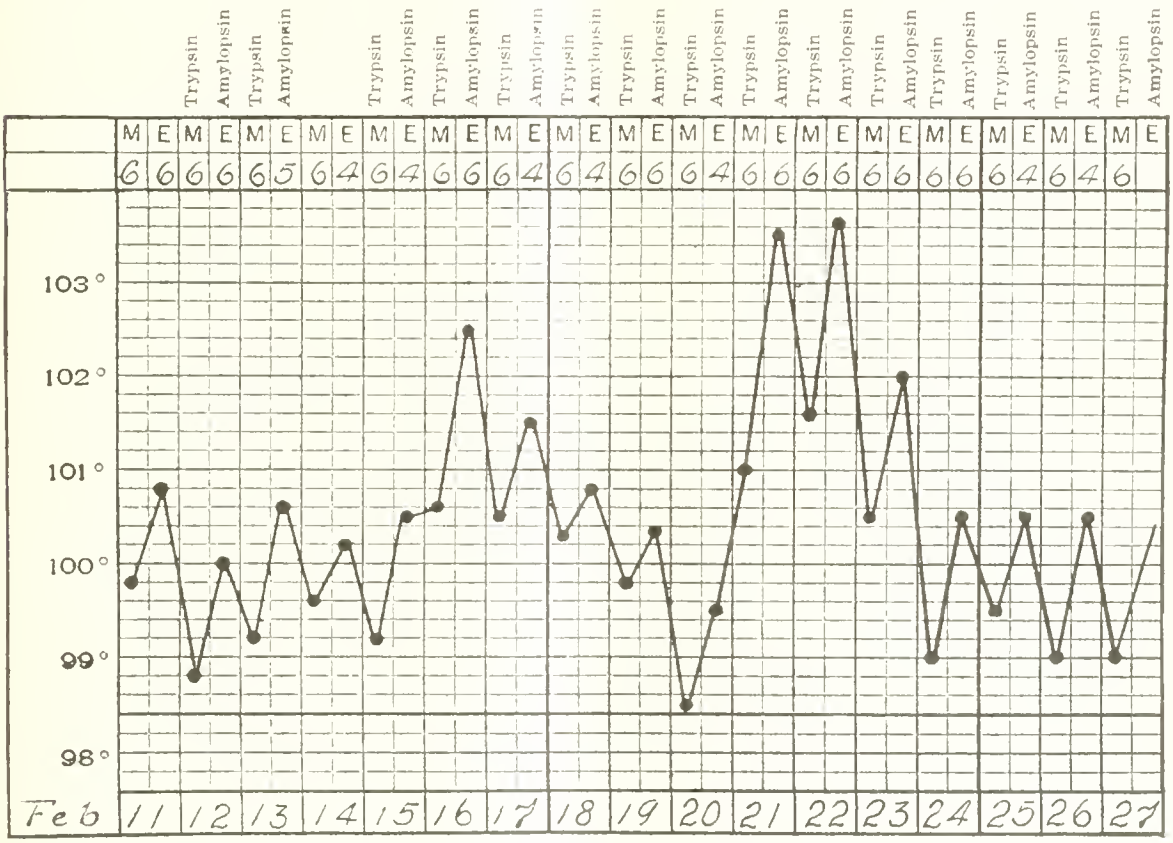


Chart 1. Illustrative Case, Class 2, Carcinoma of the Uterus. The treatment was instituted January 28, 1907; the chart shows the temperature during the third and fourth weeks of treatment; the doses of trypsin and amylopsin were 38 minims each.

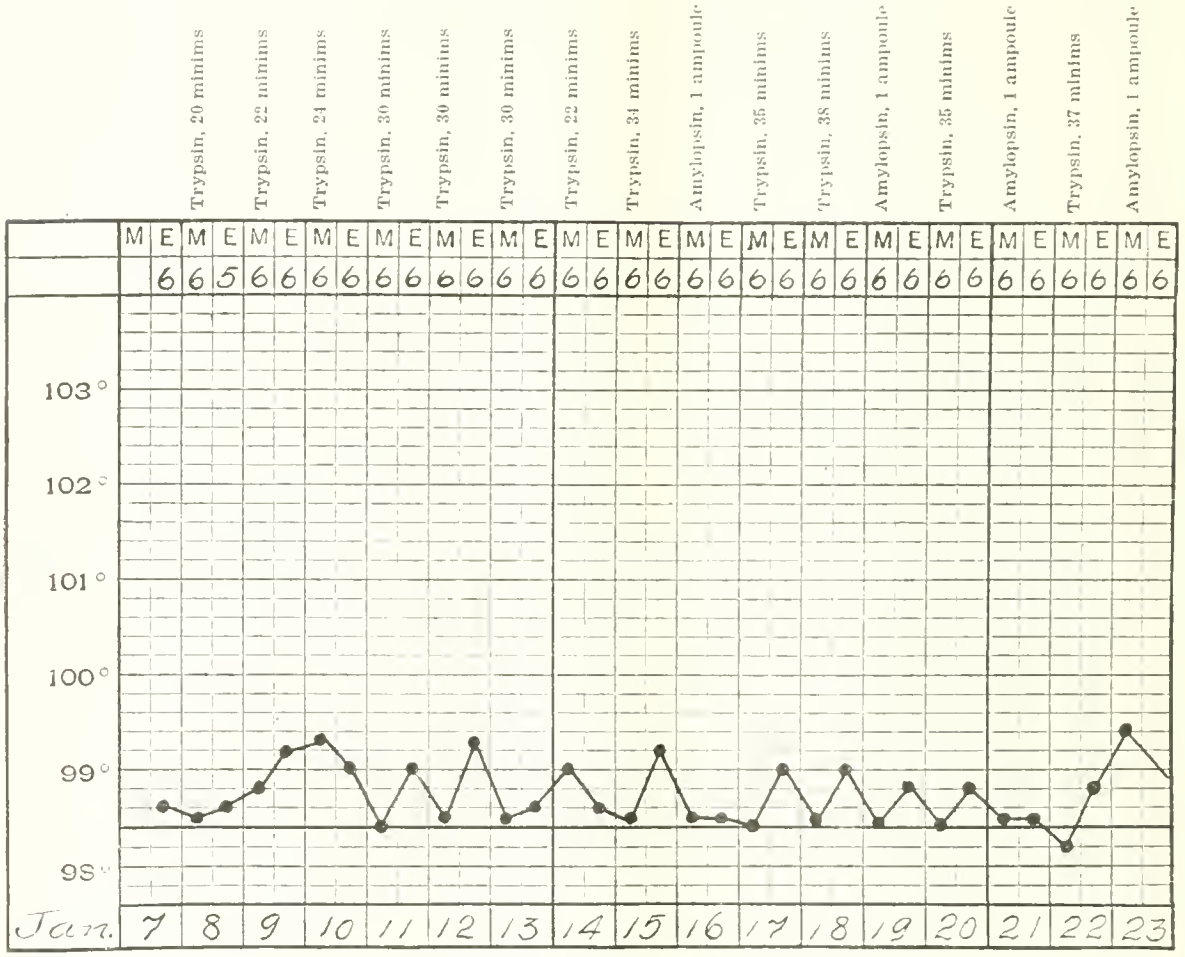
disappointing and that their experimental experience with trypsin shows that larger amounts pass into the blood when it is given by the mouth than when it is injected subcutaneously. In the direct injection into the cancerous tissue, the result was always circumscribed. Given internally in large amounts and over long periods of time, no decisive influence could be demonstrated in cases of inaccessible internal carcinoma. On the other hand, an unmistakable favorable reaction was noted in nearly every case of carcinoma of the stomach not too far advanced and still free from metastases. They also found that a tumor whose cells have been digested by the trypsin in some circumscribed area never reacts to this interference with increased growth either locally or in general. This is justly regarded as significant and is believed by von Leyden to show an actual specific destructive process, even if it is only temporary.

The *dose* of *trypsin* hypodermically varies and is governed by (1) the pathological condition and (2) by the condition of the kidneys before and after treatment is instituted.

In nonmalignant conditions large and long continued doses are well borne, as there is no reaction other than the local one at the site of the injection. This is well shown in illustrative case of Class 5, and also in the experiments of Pinkus[7] upon healthy dogs. In the latter as much as six ampoules of the original strength was given, with the result of improving nutrition and increasing the body weight. The same result was obtained in nonmalignant case of Class 5. This patient was given injections of trypsin of special strength daily for four weeks, in the first week from one-third to one-half ampoule, and afterward from one to two ampoules without rule was followed, and two ampoules were given first daily, and then on alternate days. Again in case illustrating Class 3, from one-half an ampoule to three ampoules of the trypsin injection (special strength) was given daily excepting Sundays and the few days on which amylopsin was given.

If given by rectum, the dose should be twice that of the customary hypodermic dose, and it should be diluted in from two to three times its volume of cold sterilized water. The rectal tube should be carried high up into the bowel for at least nine to twelve inches.

There is no evidence of any localized inflammation within the intestinal tract as with puncture. The method, however, is not advocated save where the discomfort, pain, swelling, and induration following upon hypodermic use is very badly borne


Trypsin, 20 minims
Trypsin, 22 minims
Trypsin, 24 minims
Trypsin, 30 minims
Trypsin, 30 minims
Trypsin, 30 minims
Trypsin, 22 minims
Trypsin, 34 minims
Amylopsin, 1 ampoule
Trypsin, 35 minims
Trypsin, 38 minims
Amylopsin, 1 ampoule
Trypsin, 35 minims
Amylopsin, 1 ampoule
Trypsin, 37 minims
Amylopsin, 1 ampoule
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103°
102°
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Jan. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

CHART 2 Illustrative Case, Class 5, non-malignant. Teatment was instituted December 2[illegible] 1906, the chart shows the temperature from the seventeenth to the thirty-fourth days of treatment.

any amylopsin, without any reaction, and with steady nutritive gain. This was evidenced by the urine analysis as well as by the patient's appearance and condition of improved metabolism, and her gain in weight from December 2, 1906, to February 15, 1907, of twenty pounds. She never had a rise of temperature, nor any save local reaction from the punctures.

In patients suffering from malignant conditions the doses must vary according to the patient's ability to take care of them. Small and infrequent doses seem to bear a definite relation to long and protracted toxic conditions.

In illustrative case of Class 1 the original strength of trypsin injection was used, beginning with five minims and rapidly increasing to two ampoules.

In a rectal case belonging to Class 3, the same and the administration of trypsin and amylopsin is imperative.

Amylopsin.—This, in the present state of our knowledge should be administered in doses of from one to two ampoules from the beginning of treatment to control any bad symptoms, such as nausea, vomiting, pain in the back, drowsiness, high arterial tension, albuminuria, and edema generally. The position of amylopsin is a difficult one to define. There is practically no literature on the subject nor are there any laboratory experiments dealing with amylopsin isolated from other ferments. It is, therefore, difficult to trace how far amylopsin acts as a physiological antidote to trypsin. It does seem to increase the urea output and apparently relieves the distressing symptoms associated with the action

of trypsin, and until further studies and experiments have been made as to its physiological role, it should be administered as indicated, and later in the treatment alternate with the use of trypsin, while still further on it may be given alone. At all times the blood must be regarded as the index, and careful observations must be made of the urine as well as the clinical picture to determine the indications for injections of trypsin, their frequency and strength.

Site of Puncture.—This in my experience has invariably been into the subcutaneous tissues of the back from the infrascapular region, and including the buttocks, keeping well away from the vertebral column and avoiding the use of both sides of the body simultaneously in order that the patient may lie on one side or the other without pain. In ambulant patients the buttocks are not used save exceptionally. On the other hand, where patients are obliged to be in bed, the buttocks may be used as well as the back. In case illustrating Class 1, where collapse occurred in thirty seconds after the injection, the puncture was made by my colleague very near the spinal column, and about the third dorsal vertebra. The explanation seems to be the same as that governing surgical shock. Graves[4] reports a serious state of collapse, following upon and two hours after the first injection of ten minims into a rapidly proliferating squamous cell carcinoma of the cervix uteri which for a time was alarming. He states that the reaction resembled in general character that which sometimes follows the injections of Coley's serum, but was more severe. The explanation in both cases is undoubtedly the same.

Care in Administration.—The greatest care and cleanliness should obtain of (1) the operator's hands, (2) the syringe, and (3) the patient's skin.

Local Reaction.—The hypodermic administration of trypsin in contradistinction to amyolpsin is accompanied by severe local reaction, not dissimilar to that following deep-seated injection of mercury. This varies in different patients.

Absorption of the Ferments.—This seems to take place rather slowly, and patients complain bitterly if the whole back is used indiscriminately for hypodermic injections.

Trypsin *vs.* Amylopsin.—Subjectively there is quickly acquired by patients an ability to differentiate between trypsin and amylopsin (1) at site of injection, (2) in systemic reaction.

With the former the burning sensation at site of injection is intense and inflammatory reaction marked, while with the latter there is very little sensory disturbance following upon the introduction of the ferment into the subcutaneous tissues, so little that patients will say when amylopsin is given: "Oh! put it anywhere; it does not matter." With trypsin it is a matter of grave consideration if the patient's point of view receives the consideration it should. Graves[4] injects directly into the tumor masses and states that there is no evidence in these cases to show that trypsin affects cancer cells by circulating in the blood or that it affects them in any way excepting by direct contact. My experience and laboratory work justify the reverse of this statement.

Tryptoglycogenic Reaction.—The marked eosinophilia of each case treated by the pancreatic ferments, with the exception of illustrative case of Class 5, suggests a comparison of the conditions in which eosinophilia is found. The following conditions are given by Wood[8] as being associated with eosinophilia: (1) Bronchial asthma, (2) skin diseases, (3) intestinal parasites, (4) trichinosis, (5) malignant diseases, especially bone marrow, (6) postfebrile eosinophilia, (7) toxic eosinophilia (tuberculin, cinnamic acid, camphor), (8) hydatid cysts, (9) gonorrhea (occasional), (10) scarlet fever.

To this list now may be added the administration of trypsin. Nos. 3, 4, 5, and 8 are possessed of a common factor in that glycogen is present in pathological quantities as a concurrent element. To trace the connection between the occurrence of eosinophilia in some of the conditions mentioned by Wood[8] would lead too far into the field of speculation, but in view of the fact that malignant tumors are rich in glycogen, and that under the enzymic treatment there is established an eosinophilia, it is logical to conclude that the classical eosinophilia of intestinal parasites is due to the glycogen contained in the epi-

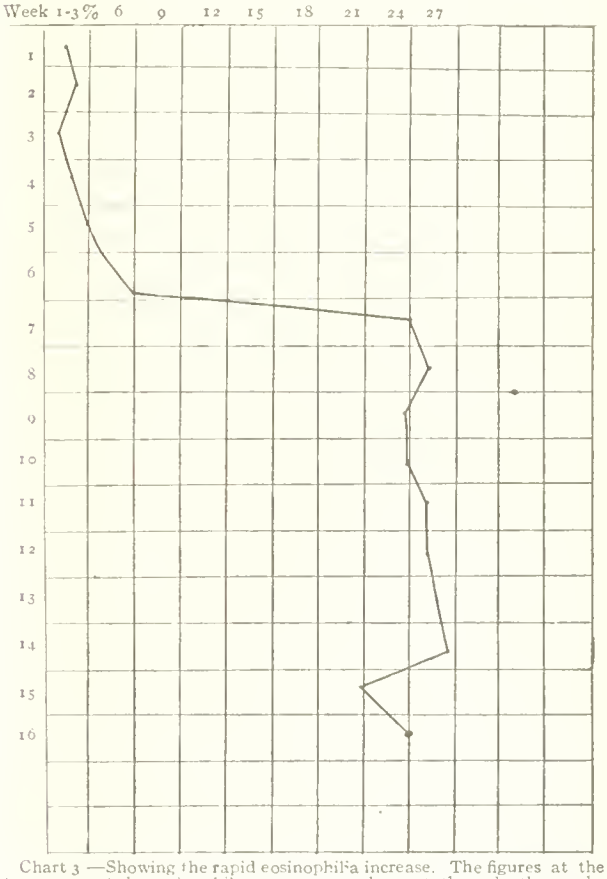

Chart 3.—Showing the rapid eosinophilia increase. The figures at the top represent the eosinophile percentages; those at the side the weeks of treatment. The white cells numbered 14,000 per c.m. approximately throughout the treatment; the red cells, over 4,000,000; the hemoglobin percentage was 90.

There is present a sufficient glycogenic potential to cause the reaction to be exhibited, for example, where a panhysterectomy has been had as an illustrative case under Class 2. The temperature chart of this patient graphically shows the characteristic dermis of these parasites. It is of equal interest to mention here that in hydatid cysts,[9] a cyst very rich in glycogen, as high as 50 per cent. of eosinophilia has been found. Glycogen is also present in all newly proliferating tissues. For example, Bernard[10] has shown it to be present in nails, feathers, etc., and in moulting animals. This is suggestive in view of the fact that in many skin diseases a proliferation of the cutis vera is exhibited.

Systemic Reaction.—In a consideration of the systemic reaction following upon the administration of trypsin, it is necessary to differentiate between those patients having pathoglycogenic accumulations and those without. It is necessary also that the former condition should exist in order that a "tryptoglycogenic" reaction should be obtained.

temperature reaction in a condition characterized by pathoglycogenic accumulations, while the illustrative case of Class 5 shows no such reaction. This latter postoperative case was submitted to me for the enzyme treatment by Dr. J. Riddle Goffe, with the diagnosis of carcinoma, the diagnosis being based on the microscopical pathological findings as reported to him by the pathologist.

In view of previous experience, the absence of systemic reaction caused me to question the pathological findings. I reported this to Dr. Goffe and asked for confirmation of the diagnosis of carcinoma. He kindly sent me the pathologist's report,

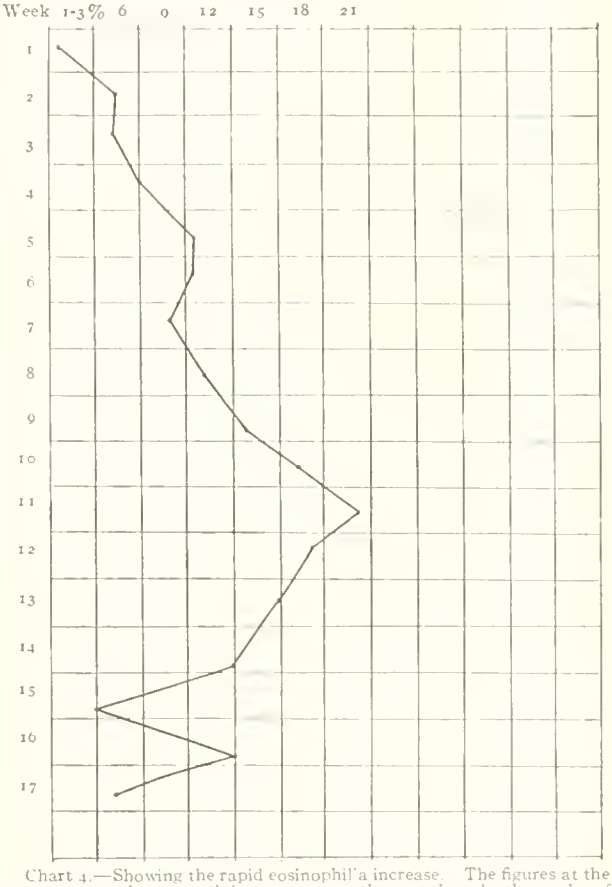

Chart 4.—Showing the rapid eosinophil a increase. The figures at the top represent the eosinophile percentages; those at the side the weeks of treatment. The white cells numbered before treatment, 5,100; during treatment, 12,000; the day before death, 18,000; the red cells, before treatment, 4,312,000; during treatment, 4,864,000; the day before death, 4,000,000; hemoglobin percentage, before treatment, 62, during treatment, 92; the day before death, 95.

which stated that the section taken was a carcinoma. In the continued absence of any tryptoglycogenic reaction, and continued nutritive gain, I asked Dr. Goffe if he could secure me a section, which he promptly did. This upon examination Dr. Wm. M. Higgins diagnosed as benign, a diagnosis which was confirmed by several pathologists in New York City, by the State Cancer Laboratory at Buffalo, and by Dr. John Beard of Edinburgh. This is the only case in which the cardinal symptoms of the tryptoglycogenic reaction were not present.

The only symptoms were the usual local ones referable to the hypodermic injections, together with a possible low-grade nephritis. Owing to the fact that there is a possibility of setting up a subacute nephritis, the burden of proving or disproving this interesting confirmation of Dr. Beard's theory, as to the selective action of the pancreatic ferments, must await the appearance of sufficient wrongly diagnosed cases.

Within from one-half to two hours after the injection of trypsin, in the average case, sooner or later in the treatment the patient exhibits many or all the symptoms of a toxemia, *i.e.* chills, fever, temperature ranging from 100° to 102°-103° F., sweating, rapid pulse, increased respiration, and not infrequently the skin is covered with a rash.

Blood.—In cases of cancer cachexia with the moderate loss in hemoglobin, a marked improvement is shown, although the daily deviations are greater than 5 per cent.

A moderate leucocytosis immediately follows the injection of trypsin, the count running from 9,000 to 14,000 per cubic centimeter within the first week. There is no accumulative effect exhibited by the white blood count. The red blood cells follow the hemoglobin curve closely, giving an index approximating 1 throughout. The distinct and very characteristic eosinophilia increase, as shown in Charts Nos. 3 and 4, seems to be a fair and scientific basis for a tentative working hypothesis as regards the effect of trypsin and amylopsin, and is of the greatest value from a clinical-pathological point of view, especially in connection with Habershon's[11] views on the close alliance, if not the identity, of glycogen and eosinophilia granules. The question of glycogen in tumors has been well worked out by Lubarsch[12] and Gierke,[13] stimulated by Brault's false theory that the malignancy of a tumor varied directly as its glycogenic contents. According to Wells, the two factors that govern the presence of glycogen are the embryonic origin of the tumor and local retrogressive changes. Tumors arising from embryonic tissues containing glycogen are in consequence particularly rich in this carbohydrate. Fully 80 per cent. of tumors in their final stages are associated with glycogen in pathological quantities. Is trypsin the catalytic agent that converts the proteid molecule into glycogen? If so, is this a conservative process, or merely a vagrant chemical reaction which takes place without interfering with the pathological metabolism of cancer?

The presence of an intestinal parasite, rich in glycogen, gives the characteristic eosinophilia picture of clinical microscopy. In cases of hydatid cysts as high as 58 per cent. of eosinophiles have been noted.[9] Attention is constantly being directed in the pages of medical literature to the high percentage of eosinophiles in all those conditions in which glycogen is present in pathological quantities. It is a common bond in all pathological conditions associated with glycogen. These facts, combined with Lubarsch's findings, that glycogen is constant in horny degeneration of a squamous cancer, would most strongly suggest that the eosinophile reaction of trypsin is due to a degeneration of cancerous growth, and should not be constant for all tumors, but vary as their embryological basis.

The only possible explanation of the effect of trypsin on pathological conditions capable of giving a tryptic reaction must be that certain proteid molecules, *e.g.* in cancerous conditions, are capable of being attacked by trypsin, because of their special configuration. This configuration allows the trypsin to act on the proteid disturbing the point of equilibrium in the glycogen proteid synthesis, the equilibrium point as a whole being that of a simpler molecule than the complex proteid molecule of perverted cell metabolism met with, for example, in cancer. That is, if a quantity of food represented by 10x would in the ordinary course of metabolism give 9x proteid and 1x of glycogen as the final result in the unfinished synthetic and catalytic reactions, the injections of trypsin in the given pathological condition will result in 1x proteid and 9x

glycogen, and a consequent faulty metabolic functioning of the cell, and perhaps its death.

From these observations a hypothesis may be formulated, namely, that trypsin acts on intercellular matter of a definite configuration, following the selective law of enzymes, and that the result is a pathological quantity of glycogen throughout the body, manifested especially in the eosin granules and to a certain extent probably stored up in the muscles.

As glycogen is not stored up in dead cells, but rather split off from them, and as it is associated in nearly all cases with accumulation in the leucocytes and muscle cells, it would seem fair to imagine that in cases of trypsin reaction the body is saturated with glycogen. Clinically I would note in this connection that the most marked results have been obtained in cases of adenocarcinoma.

Action on the Sympathetic Nervous System.—As the result of the trypsin treatment of cancer there is produced a profound irritation of the sympathetic nervous system. This is markedly evidenced by interference with the circulation in glandular structures—a breast, for example. The gland becomes swollen, is tense and rigid, both to the observer's touch and the patient's sensation. In adenocarcinoma there is great tumefaction, but there does not appear to be the same tenseness and rigidity as in scirrhus. The redness of the superficial structures still further emphasizes the disturbed circulatory conditions. Where there is glandular involvement, as in illustrative case of Class 4, the entire chain of involved glands, in this instance cervical, axillary, mediastinal, and subcutaneous gland of inframammary regions especially, and occasionally the inguinal also, became extremely tense and rigid during the hours following the use of trypsin.

While the daily urine analyses have not established clearly a definite relation between the treatment and the output of urea, there does seem to have been noted a tendency toward the lessening of the urea following the injection of trypsin, which can readily be explained on the ground of the interference of the circulation in the glandular structure due to the irritation of the sympathetic nervous system; while on the other hand, in a number of instances, an increased output of urea has been observed upon the administration of amylopsin. This data, however, is not sufficient to establish the fact that the output of urea is limited by the action of trypsin or increased by the administration of amylopsin. It is simply rational to believe that the circulatory conditions in the kidney (vasomotor constriction) under the influence of trypsin should limit both the secretion of urine and the output of urea. It is noted by all these patients with intelligence, or by their nurses, that following the use of the trypsin the urine is less profuse and of a darker coloring.

Another and invariable evidence of the irritation of the sympathetic nervous system is shown in the complete relaxation of sphincter muscles, for example, the anal sphincter, the urethral, that of the os uteri, according to the site of the disease.

In illustrative case of Class 1 the anal sphincter has been continuously relaxed since the first two weeks of treatment, now ten months since.

In the illustrative case of Class 3 the os uteri was dilated at the end of two weeks and fully open in eighteen days, the examining finger penetrating freely beyond the internal os. So complete was this dilatation that the contour of the proliferating mass within the body of the uterus could be readily outlined.

Eosinophiles in Pulmonary Tuberculosis.—The behavior of eosinophile leucocytes in pulmonary tuberculosis has been studied by J. M. Swan and H. T. Karsner[14] and they present further evidence as to the behavior of the eosinophiles in cases of tuberculosis, with special reference to the prognostic value of these cells found in the peripheral blood. Differential counts of the leucocytes in the blood of thirty-one cases of pulmonary tuberculosis were made. Of this number twenty-six cases were fatal and five were stationary, or were improving under treatment at the time the observations were discontinued. In all the fatal cases except two the eosinophile cells were below 1 per cent. as a rule, at periods from 102 days before death to the day of death. In the cases which remained stationary, or which were improving under treatment, the eosinophiles, while subject to fluctuations, were present in fair proportion, usually over 1 per cent. From their observations the authors conclude that in cases of pulmonary tuberculosis the eosinophile cells tend to disappear from the circulating blood as the progress of the disease brings the fatal termination nearer, and that as the patient improves under treatment and as the disease shows a tendency to become arrested, the eosinophile cells reappear in the circulating blood.

A preliminary study of the same subject has been made by Opie.[15] While the behavior of eosinophile leucocytes has not been studied in the same careful manner in conditions of intestinal tuberculosis, there can be no question but that they must deport themselves in similar fashion.

In illustrative case under Class 1, therefore, the absolute disappearance of tubercle bacilli from the discharge of the disused bowel may then be explained by the increased eosinophilia of the circulating medium, consequent upon the administration of the enzymic treatment. The enzyme treatment was begun by the introduction of injections of trypsin as originally put out, diluted with two volumes of sterilized water introduced into the disused rectum. The fecal discharge from the cut-off bowel—sigmoid flexure—was much more profuse after treatment in this way for a little over a week, and contained, in addition to the semiconsistent old grayish fecal matter, a number of ovoid bodies, the size of an ordinary almond, which, when dried and opened, had a pithlike appearance. This discharge upon examination (August 10, 1906) revealed the presence of tubercle bacilli. Their presence accounted for the fluctuations of temperature, exhausting night sweats, absolutely tubercular in their characteristics, and in part for impaired appetite and loss of flesh and strength.

On August 10, the trypsin was introduced directly into the circulation by hypodermic injections into the subcutaneous tissues of the buttocks. This was carried on daily with relief from night sweats, improved appetite, and steady diminution of the plaster-of-paris-like induration in and about the rectum and bladder. Later on came the characteristic tumefaction of the rectal tissues, which were in a condition of cauliflower excrescence. Within three weeks from the beginning of hypodermic injections my case book records improved appetite, lessened pain, lessened rectal discharge, better appearance of urine, increased vesical capacity with longer intervals between rises of temperature (normal, 99-100), and disappearance of excessive night sweats. The tumor mass of most recent formation, apparently the result of severe attack of illness characterized by fever, sweating, imperfect functioning, excruciating sciatic pain with exquisite sacral sensi-

tiveness, cheek of affected buttock swollen, hot as well as painful, and later on a condition of complete analgesia extending down the leg and to the genitals, the latter part of July, had disappeared, and discharges of September 6, 1906, from unused bowel showed in the granular detritus or well digested matter a few tubercle bacilli present only.

On September 6, the use of amylopsin was begun, alternating in doses of two ampoules (original strength) with injections of trypsin, two ampoules also of original strength. Examination of rectal discharge a week later (September 14, 1906) showed no tubercle bacilli present; nor have repeated examinations since, now ten months, of the discharges from the disused bowel and urine revealed their presence. If the behavior of eosinophile leucocytes in tuberculosis is constant, as per the observations of Swan and Karsner,[14] then in the eosinophilia, established by the hypodermic use of the enzymes, there is very suggestive evidence as to the rationale of the disappearance of the tubercle bacilli and the rapid improvement in this case. The enlarged mesenteric glands in this case were, I believe, tubercular, not malignant. While one case is not sufficient for proof, one case supported by this scientific fact is sufficiently suggestive to induce the careful and systematic use of enzymic treatment in tuberculosis. The fact remains that this illustrative case of Class 1 shows absolutely no evidence of tuberculosis save inability to make any marked gain in weight, and periods when night sweats are slightly in evidence. Experimental medicine must determine the appropriate place of these ferments in the treatment of tuberculosis. Here it is only necessary to say that laboratory experiments are under way to prove or disprove the generalization of the truth of this isolated observation.

For use in tuberculosis, as in cancer, the injections should be an extract, freshly prepared from the pancreas gland direct and containing the ferments, trypsin and amylopsin. The absolute disappearance in this case, followed upon six weeks' use of trypsin, and four injections of amylopsin. The place of the latter does not seem to be conclusive, although Beard believes it to be the important factor. The disappearance of the tubercle bacilli was coincident with the period of treatment, which has been found to be characterized by the highest eosinophilia curve.

Dr. Edwin Lewis[16] has made an experimental study of a preparation of the fresh pancreas gland, not of trypsin alone, but other associated ferments, in tuberculosis. His results, while not negative, were not conclusive.

Excretion.—Trypsin and amylopsin are excreted mainly by the kidneys, producing a nephritis more or less extensive. Granular casts appear in the urine almost immediately after the first doses of the ferments. The nephritis does not seem to be progressive, the casts and albumin remaining pretty constant unless the dosage is increased. A single superposed dose of three ampoules has been seen to produce epithelial casts. It is difficult to disassociate the predisposition toward indicanuria resulting from the ferment treatment from the characteristic indican of cancer.

The presence of indican in pathological quantities is probably due to an increased absorption of indol from the intestine, and not to an increased tryptophan, as the indicanuria may be controlled by administration of 1-100 of a grain of calomel every hour.

In every instance casts have appeared in the following order: (1) Occasional fine granular, then coarsely granular, (2) hyaline, (3) epithelial. Under the regimen which forms a part of the supplementary treatment and hygiene of these cases, this nephritis is kept pretty well under control.

Conclusion.—The justification of this treatment is to be found in: (1) The pathological findings, (2) relief from pain, (3) absence of odor and necrotic discharge, (4) improved metabolism, (*a*) in cases that do well, (*b*) even in those who succumb, (5) increased mental vigor, and (6) by inspiring the patient with hope.

On the other hand, it may result in shortening life by a few months, but that short span of added existence would be characterized by breaking down of tissues, odor, necrotic discharge, pain, imperfect metabolism, loss of mental vigor, and by utter hopelessness on the part of patient and friends.

Treatment should be undertaken early in every instance and should always be an adjunct to surgical interference in every postoperative case.

Metastases should never be allowed to develop. The importance of removing a diseased organ, as in case illustrating Class 3, must never be lost sight of, and the enzyme treatment should be carried on with a full recognition of the value of skilled surgical interference when possible.

The indications are that the use of the enzyme treatment will have to be continued over long periods of time and perhaps at intervals during life, but as the absence of pain is a constant accompaniment, it would seem logical and better to have a patient with the trypsin necessity rather than the morphine habit.

To illustrative case of Class I. there has probably been administered more trypsin than to any other individual patient, yet daily urine analysis shows that the kidneys are functioning to all intents normally.

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616 Madison Avenue.

Significance of Cytodiagnosis and Therapeutic Value of Lumbar Puncture in Tuberculous Meningitis.—Olimpio Cozzolino has made a careful cytological examination of the blood of eleven cases of infantile tuberculous meningitis, some of which he has treated by lumbar puncture. He gives the conclusions at which he has arrived. He believes that the cytological examination of the blood is of value in aiding to establish the diagnosis, but that other means must be used to make the diagnosis absolute. Polynucleosis is not rare in basilar meningitis, both where the tubercle bacilli are many and where they are few in the blood. Lumbar puncture is of no diagnostic value and rarely gives any therapeutic results.—*Rivista di Clinica Pediatrica.*

EYESTRAIN AND OTHER DISEASES DUE TO CROSSING, CROWDING, AND DAMMING OF THE RETINAL VESSELS.

By GEORGE M GOULD, M D.,

PHILADELPHIA

An ophthalmoscopic glance at the fundus of the normal living eye makes it evident that the vascularization and nutrition of the intraocular tissues, especially of the retina, is not only of prime importance, but that it is the first condition of vision. And the best possible vision is the *sine qua non* of the motility, safety, and success of the dependent organism in the struggle for existence. The retinal function is one of amazing delicacy; it is conditioned upon an unexampled complexity and microscopic fineness of structure, and upon a state of the highest instability of equilibrium of molecular substance. The task of nourishing and reestablishing this function, when temporarily exhausted, is of almost incredible difficulty. Phases of this difficulty throng upon the attention. For example, the eye is a closed system, and the dominating structure, the retina, must receive its arterial supply and discharge the venous blood within the million-stranded bundle of nerves called the optic nerve. To make transparent all the ocular structures from the cornea to the pigment layer of the retina has been a unique and next to impossible necessity, and from nonsuccess follow a score of diseases such as leucoma, cataract, etc. There is one difficulty nature could not overcome: the blood supply of the retina had to be carried by vessels made opaque by the red blood corpuscles and coursing in front of the retina. This was a necessity resulting from the condition of the "closed system" of the globe of the eye.

The normal intraocular pressure, moreover, was required to give the globe its stability of form and make the visual act a constant and certain function. The relation of this tonicity of the globe to the entrance and exit of the blood and lymph and to the passage of the blood through the retinal vessels is one of close adjustment. A too soft globe would plainly lessen the reliability of retinal response and impair the all-important image-forming function; a globe too hard would lessen vascularization, nerve function, etc.—would mean all that the word glaucoma means.

Embryologically studied, one sees how easily the retinal vessels may become anomalous. One might, indeed, describe those of each and every eye as anomalous, so unlike is one from another. But the norm, as shown in noncomplaining eyes, and in the pictures of the textbooks, brings it about that the larger trunks of the vessels do not cross over or under each other in their courses, and that a single vessel does not curl or circle so that it passes above or below itself. If such a crossing takes place the established and necessary intraocular pressure will surely tend to, or actually bring about an impaired passage of the blood within one or both the trunks concerned. Whether the impeded circulation will lessen the supply of arterial blood to the portion of the retina it normally feeds, or whether the normal venous outflow is prevented, will, of course, depend upon the facts in each case, the peculiarities of the crossing, the location of the block, the tension of the eyeball, etc.

Ophthalmologists have evidently not been observant of these blockings or dammings, either physiologically or pathologically. Since I first suspected their existence and pathologic significance I have found them far more common than I had supposed. Although they may be so slight as to produce no serious or demonstrable symptoms, I am sure they may be so severe as to produce the greatest and longest suffering and even the life-tragedy of the patient. If the choking is of an artery, and if it is great, and if supplying the macular region, and especially of the right eye of a righthanded (and righteyed) person, the consequences will be the worst. If the impeded venous outflow is from that region the morbid results will probably be as bad, although different. The farther from the macula is the region of the impaired nutrition, the less will be the likelihood of morbid symptoms. It will be apparent that vessels carrying red blood corpuscles must not traverse the macular or perimacular spaces, and hence that here collateral or anastomotic circulation cannot, as elsewhere in the body, take up the nutrition of the part impaired by the blocked vessels.

And it is also equally plain that the blood supply is not, and by the nature of the case cannot be, wholly cut off (as in embolism or thrombosis), but only lessened.

The symptoms may be intensified, varied, multiplied, or masked by the coexistence of ametropic eyestrain.

Of the illustrative cases with certain and distinct and logically consequent symptoms, I briefly epitomize two:

A woman, aged forty-six, for most of her life had suffered intensely from many of the typical symptoms of eyestrain. Her statements and history as related by herself seemed so exaggerated that I was at first suspicious of hysteria and a morbid pleasure in pain, or in the belief that pain existed. Study of her case and observance of the woman's character in time convinced me that there was absolutely no such mental factor present, and that the suffering was most genuinely neurologic and physical. She had been under the care of many famous ophthalmologists, none of whom had been capable of helping her; none could guess the exact nature of the disease. The patient had loyally and faithfully carried out every kind of treatment, and had worn all possible kinds of spectacles, until each physician in turn confessed himself wholly mystified and unable to give relief. Except from one other I never heard a more pitiful and harrowing tale of suffering patiently borne, of hope renewed with each new oculist or physician consulted, of bitter disappointment as no cure followed. I was to be the last!

Since she can remember the patient has had "difficulty in seeing." The closer description of the "difficulty" makes it clear that it consisted in a failure of the right eye to hold the image, or see as plainly or continuously as with the left eye. It is what I have long been accustomed to denominate as "fading image." All her life, also, the woman has had headache. For the past eight years the worst symptom has been constant pain and tenderness across the brow and a "beating" in the right eye, not lessened by any treatment. At the menstrual period there has been no headache, but an intense pain across the eyes, with nausea but no vomiting. There have long been insomnia, indigestion, constipation, "nervousness," "fidgetiness," with the frequently allied coupling of hypertension and depression of spirits. There has been a long and harrowing history of "rheumatism," "neuritis," and an eight-months'-long constriction of the throat during

which only liquids could be swallowed. There have been many other symptoms which may here be omitted.

She was formerly under the care, for five years, of Dr. ——, a famous oculist, and then another man of equal repute treated her for several years. For a number of years again, another most reputable and learned man also failed to give the patient the least relief. In 1902 he ordered:

R. + Sph. 2.25 + Cyl. 0.50 ax. 80°.
L. + Sph. 2.25 + Cyl. 0.25 ax. 100°.

He plainly thought that the slight exorphoria present was a great factor, because with the above prescription he combined 1.5° prisms each eye bases in. When no relief came he at last advised tenotomy, which the woman, with a wisdom greater than that of the doctor, rightly refused. Even without the foolish prisms the glasses were not correct, overcorrecting the error for distance, and undercorrecting it for near. With failure evident, this oculist advised the patient to consult Dr. —— of ——, an ophthalmic surgeon of wide renown, "who," he added, "always makes a point of disagreeing with me in everything." This was done that the patient might have an entirely independent opinion. She added, with a sickly smile, that "he did disagree in every particular." But the disagreement brought no help, and then another oculist was consulted some nine months before coming to me. He ordered:

R. + Sph. 2.00Prism 2° B. I.
L. + Sph. 1.50Prism 1.5° B. D.

This order was as bad as if it had been made by "the leading oculist of the city."

Without a mydriatic I estimated the error of refraction to be:

R. + Sph. 1.62 + Cyl. 0.62 ax. 180° = 20/50+
L. + Sph. 1.37 + Cyl. 0.37 ax. 180° = 20/30?
2° B. I., 1° B. D. L.

There was also evident subnormality of accommodation. With paralyzed accommodation the errors were found to be:

R. + Sph. 2.00 + Cyl. 0.50 ax. 180° = 20/50+
L. + Sph. 2.00 + Cyl. 0.37 ax. 180° = 20/30?

With all the woman's good will to do as advised she could not and would not try bifocal spectacles, because she had by bitter experience demonstrated that they only increased her symptoms. This fact was a hint to my mind, and one which stuck there, that there was in this case an unsolved problem. I gave proper distance glasses with "fronts" for near, but the "unbearable pain" lessened no whit. In a few weeks the error was not different, and I demanded bifocals, to be used at meals, and in the house. She vowed she "could not see with them." I did not then suspect the reason they increased difficulty and pain, but this became apparent when with search and study I found that she closed the right eye when reading and ignored its image for distance, and that she "had done this for years," as she now confessed. I was now on the heels of the mystery.

At the first visit in using the ophthalmoscope I spoke of a curious loop in the superior temporal artery of the right eye. The patient said: "Oh, everybody has noticed that," but adding that it had no significance. The artery close to the disc turned upon itself, forming a circle about 10° in diameter, and passing under itself proceeded onward toward the macula. But in passing beneath the vessel was flattened by the pressure of the vessel above it, and from that point the artery was pale, half collapsed, and evidently carrying but a small quantity of blood. The macula was stippled and somewhat morbid in appearance, but otherwise the eye ground seemed normal. My glasses had given no relief; there was a decided tendency to shut the right—the naturally dominant and important dextral eye—out of function; no device had given hope; the subnormality of accommodation of the right eye was about 1 D. greater than in the left eye—a significant fact; the amblyopia had not bettered under proper glasses; the symptoms, partly those due to eyestrain, were so peculiar as to arouse suspician that more than ametropia was the matter,—such were the conditions which directed attention to the hitherto neglected looping of the upper macular artery, and the plainly lessened blood supply of the retinal area supplied by it. I at once ordered a blinder worn nearly constantly before this eye. A more certain test would have been a bandage, because, according to the physiologic law of imperative function, the right eye must struggle for life and dominancy during all the years it is dying. In a few weeks the report was that while there was not by any means complete comfort, there had been a decided lessening of the severity of the pain, etc. The most significant fact was this: While the blinder was worn there was comparative freedom from pain, etc., but when it was removed a throbbing pain came on, which did not disappear until the blinder had been worn again for an hour. I then knew my theory was correct and that there was nothing left but to exclude the ailing eye from function. A large black lens was provided to be worn absolutely constantly, and progressive relief is being secured. I do not look for entire happiness in this case, because too great injury has been done, and the exclusion of the right eye from function can never be complete; it must still desire or be forced to partial life and function because it is the right eye, and because its exclusion comes so late in life. The less of two tragedies is chosen, and that is often the command of practical medicine or ethics.

The moral of the tale is that knowledge of the nature and cause of an incurable disease is infinitely better than blind groping in the darkness and false, mischosen, and misapplied methods of cure.

My second case was that of a healthy strong young man of twenty, who began having "inability to use his eyes" when he was about eight years of ago. Since this time there has been a continued blepharospasm, a rapid closing and opening of the lids; the lids are nipped down tight and held almost as long as they are kept open. He has not had any of the usual reflexes such as headache, dyspepsia, "migraine," etc., and no amount of questioning is able to elicit any more definite or satisfying details as to the nature of his troubles than that "things disappear," "fade out," etc., and he could not an cannot read, write, or study. Do what he would he could not use his eyes for constant or near work. From ten to fifteen he went to school for about two months at the beginning of the year, but after that had to stay at home or travel. At fifteen he kept at school for a year, but since then has lost every other year, "not on account of health, but because of impossibility of using his eyes."

Oculist No. 1 was consulted at the age of nine, and his glasses were worn for six months, with no relief.

Oculist No. 2 changed his glasses, and these were

worn two years, but without aiding the patient to study.

Oculist No. 3 was consulted at the age of twelve with some benefit.

Oculist No. 4 changed the prescription, and these glasses were worn for but a little while. He now went two years before consulting

Oculist No. 5, who told him nothing was the matter with his eyes. But on attempting to resume study he was at once compelled to stop.

Oculist No. 6 "tried and tried" to make it possible for the patient to study. Failing, he sent him off to "the leading oculist" of a distant city, who in 1906 ordered:

R. + Sph. 0.75 + Cyl. 0.37 ax. 60° } Distance.
L. + Sph. 1.00 + Cyl. 0.25 ax. 90° }

L. + S. 1.37 and Cyl. } Near.
R. + S. 1.12 and Cyl. }

For a few weeks these felt comfortable, but then the old symptoms returned despite the diagnosis, antique, antiquarian, and though dead never buried, of "gout and rheumatism of the eye."

Oculist No. 7, myself, under cycloplegia diagnosed:

R. + Sph. 0.87 + Cyl. 0.37 ax. 70° = 20/20?
L. + Sph. 1.00 + Cyl. 0.25 ax. 90° = 20/20

with perfect muscular balance.

His greatest complaint, upon persistent questioning, is that he becomes suddenly blind, or nearly so, when looking at anything. Things fade out and become nearly or wholly invisible. Even in the street, in looking at a person, the bodily figure grows dim or invisible; when playing baseball, and watching the course of the ball in the air, it will disappear for a second or more and then again become visible. In order to see anything plainly he has to rub his eyes. In near vision it is more impossible to hold the image. The peculiar and persistent blepharospasm for twelve years, with the rapid fading of the image, seems to point to difficult holding of the retinal function due to faulty blood supply. Competent general physicians have examined him and pronounce him free from all recognizable systemic or organic disease.

Having in mind the case above described, I was quick to recognize the existence in this man's eyes of the anomalies of the network of the retinal veins and arteries. From the point of emergence or entrance at the disc they curled about each other, crossed and recrossed each other, in a manner to strike immediate attention. Description would be almost impossible. The upper temporal artery of the right eye crosses over the vein on the disc, and crosses under the vein twice after leaving the disc. The lower temporal artery crosses over the vein on the disc and does not recover full size and color for 30° below the disc. The upper temporal artery of the left eye passes over the vein on the disc, again passes under the vein on the disc, and once more passes under the vein about 40° from the disc. The lower temporal artery passes beneath the vein on the disc, passes over the vein 20° from the disc, and again over the vein 40° from the disc. The arteries are smaller and thinner and lighter in color on the disc than toward the periphery, whereas the veins are turgid and swollen as they approach the disc. There was noteworthy general venous stasis, and venous pulsation was present. Both eyes were affected in the same way, but the right possibly in a more decided manner. I felt justified in ordering correct lenses, in explaining what I thought the cause of his symptoms, their incurability, and in urging a life-time renunciation of nearly all reading, writing, or near-work occupations.

It seems probable that in such intercrossing of blocked and choked vessels lessening the supply of arterial blood and serum, or preventing the normal out-passing of venous blood and lymph, we have the distinct cause of a new type of ocular disease, and especially of its results, another kind of incurable eyestrain. The same or a similar result may be due to crowding of the vessels at the disc, as they turn, or within the optic nerve sheath itself, with venous pulsation, stasis, impaired nutrition, etc. Is it also not possible that such blocking and crowding may account for the rise of other retinal and intraocular diseases, the etiology of which is at present not clear? Such, *e.g.* as degenerative, pigmentary and atrophic macular diseases, the enlargement of the globe and the lessening of hyperopia, its passage into myopia, the change, during presbyopia, of 90° axes to 180° axes of astigmatism, all of which and more, are possible consequences of the lessened outflow and disturbed nutrition which would follow crossing and crowding of the vessels. Would not such causes constitute precisely the factors needed to clear up the etiology of the mysterious and terrible disease, glaucoma? It appears highly significant that the several greatest ocular diseases, glaucoma, cataract, presbyopia, the reversal of the astigmatic axes, etc., should all be coincidental and fall upon the time of failing life-powers and lowered blood pressure. It is presumable that, etiologically, they may often depend upon the want of vascularization or full nutrition of the intraocular tissues, a process that even in the young has been of most difficult biologic accomplishment.

Even the greatest of all ocular diseases, astigmatism, and other forms of ametropia, with all the morbid results of eyestrain upon the general system, upon education, and social evolution, even these indirectly depend upon the shape of the eyeball, *i.e.* upon its tonicity, blood pressure, and nutrition. Astigmatism is largely dependent upon the pressure of the upper lid, which must rest upon the cornea at the upper border of the pupil, in order to shade the retina and thus aid in the reinstatement of its unstable equilibrium when impaired by every visual act. A greater tonicity would prevent the indentation by the lid, but it would prevent also the transmission of the nerve impulses and the currents of the blood, lymph, and serum; that is, a greater tonicity would be glaucoma.

ACID INTOXICATION OR ACIDOSIS: A FACTOR IN DISEASE.

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More than twenty years ago, visiting the different public and private institutions in this country and Europe and private patients, pursuing my studies in degeneracy, I was struck with the fact that the teeth of diabetics, tabetics, and paretic dements were badly worn away. Destruction of the alveolar process was likewise very marked. Destruction of the teeth in healthy, normal individuals was occasionally noticed. An endeavor was made fifteen years ago to ascertain the cause of this destruction designated as interstitial gingivitis or so-called pyorrhea alveolaris.

In a paper on "Pyorrhea Alveolaris,"[1] I mentioned that the disease had two origins, "local and constitutional." The constitutional form was the re-

sult of faulty metabolism or autointoxication. Since this, further researches have shown acid autointoxication to be a great factor in erosion, abrasion, and interstitial gingivitis.

Figures 1 and 2, the models of the jaws and teeth of two physicians respectively thirty-eight and forty-two years of age, show the destruction of the

Fig. 1

alveolar process. In men at these ages in apparent perfect health, interstitial gingivitis has made rapid progress. Figure 3 shows the condition of the teeth and jaws of a diabetic fifty-five years of age. Figure 4 shows the jaws in their original position. The crowns of the teeth are worn away. The alveolar process is almost entirely destroyed. Some of the teeth have already dropped out and others are loose. The relation of acid autointoxication and mouth acidity is very intimate. The acids taken into the body and those produced by chemical changes within, such as hydrochloric, lactic, acetic, diacetic, β-oxybutyric, uric, and other acids circulate in the system, passing out through kidneys, lungs, skin, and mucous membrane especially of the mouth. If the kidneys do not carry off the surplus acidity, a greater strain is put upon the lungs, skin, and mucous membranes of the mouth. The alveolar process and gums, being doubly transitory, as well as end organs, contain excretive and secretive glands. The gums are the first structure of the body which indicate systemic defects particularly noticeable in mercurial, lead, and brass poisoning, scurvy, etc. The mucous glands normally secrete acid fluid, while the salivary glands excrete alkaline fluid. It not rarely happens, however, that the kidneys fail in their function and the system becomes so saturated with acid that the salivary glands secrete acid saliva. The acid secretion from the gums soon sets up inflammation which causes absorption of bone and the teeth in time fall out. The acid from the glands of the gums and the salivary glands continues to cause destruction of the teeth.

Friction from the lips, teeth, and foreign bodies assist greatly in tooth destruction. Teeth softened by faulty nutrition and acid states are easily destroyed by acids and friction.

Researches into the cause of erosion and abrasion of the teeth and interstitial gingivitis causing destruction of the alveolar process from which all suffered resulted as follows:

1. *Uranalysis of Diabetic Patients.*—Uranalysis by the Columbian Medical Laboratories of three hundred and ninety-four diabetics showed specific gravity, one 1.003, one 1.005, one 1.007, one 1.010, one 1.011, eight 1.012, one 1.013, six 1.014, six 1.015, four 1.016, five 1.017, seven 1.018, six 1.019, seven 1.020, five 1.021, thirteen 1.022, fifteen 1.023, ten 1.024, twenty 1.025, thirteen 1.026, thirteen 1.027, eighteen 1.028, nineteen 1.029, twenty-five 1.030, twelve 1.031, fifteen 1.032, twenty-eight 1.033, sixteen 1.034, twenty 1.035, seventeen 1.036, eighteen 1.037, nine 1.038, twelve 1.039, ten 1.040, eight 1.041, eight 1.042, two 1.043, seven 1.044, two 1.045, two 1.046.

Percentage of Sugar.—Twelve had 0.1 per cent., eighteen 0.2, three 0.3, eleven 0.4, seven 0.5, seven 0.6, one 0.7, four 0.8, eight 0.9, ten 1, one 1.1, eight 1.2, seventeen 1.3, six 1.4, one 1.5, thirteen 1.6, seven 1.7, four 1.8, one 1.9, five 2, three 2.1, six 2.2, three 2.3, seven 2.4, three 2.5, five 2.6 one 2.7, three 2.8, three 2.9, four 3, one 3.1, five 3.2, six 3.3, one 3.4, two 3.5, ten 3.6, five 3.7, five 3.8, fifteen 4, four 4.1, five 4.2, two 4.3, two 4.4, three 4.5, eight 4.6, four 4.7, five 4.8, five 4.9, five 5, two 5.2, ten 5.3, five 5.4, one 5.5 nine 5.6 seven 5.7, five 5.8, one 5.9, nine 6, five 6.1, ten 6.2, ten 6.4, one 6.5, five 6.6, one 6.7, three 6.8, five 6.9, three 7, one 7.1, two 7.2, two 7.3, two 7.4, one 7.6, one 7.7, three 7.8, one 7.9, one 8, one 8.2, one 8.5, one 8.7, one 9, one 9.1.

Degree of Acidity.—Two passed 4 degrees, two 6, one 7, two 8, six 10, five 12, sixteen 14, one 15, fifteen 16, one 17, thirteen 18, twenty 20, one 21, twelve 22, one 23, ten 24, two 25, fourteen 26, sixteen 28, one 29, twenty-one 30, seventeen 32, thirteen 34, four 35, twenty 36, two 37, eleven 38, two 39, thirteen 40, one 41, eight 42, seven 44, two 45, eight 46, two 47, five 48, five 50, five 52, one 54, twelve 56, one 57, four 58, five 60, one 62, one 63, three 64, two 66, two 68, two 70, three 72, one 74, one 75, one 100, two 104, one 120, one alkaline, two neutral.

Acetone.—Of this number of cases only nineteen were examined for acetone. In eleven, acetone was present, in eight absent. Thirty-two were examined for diacetic acid; in six it was present and twenty-six absent. Twenty-four were examined for

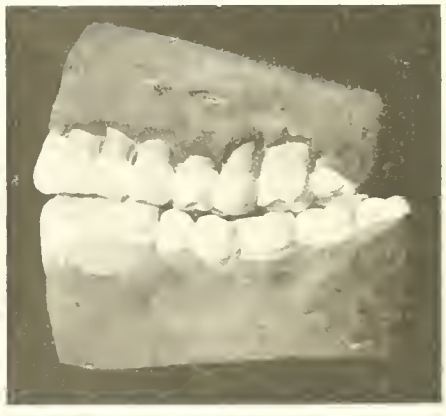

Fig.

β-oxybutyric; in all it was negative. It will be observed that the per cent. of acetone bodies in diabetics is very small.

Uric Acid.—The examination for uric acid of three hundred and seventy patients showed its presence to a greater or less degree in fifty-six and negative in three hundred and fourteen, or about 15 per cent. had uric acid.

Indican.—Of the three hundred and ninety-four examinations, three hundred and twenty showed in-

dican to a greater or less extent. Seventy-four were normal in this respect.

2. *Uranalysis of Tabetic Patients.*—Degree of acidity in thirty-five was as follows: One passed 5 degrees, one 6, one 7, three 9, two 10, one 11, one 14, one 17, two 19, two 20, one 22, one 46, one 48, one 49, one 50, one 56, one 62, one 73, two 76, one 78, one 81, one 82, one 84, one 97, one 99, one 112, four alkaline. Those patients having the alkaline urine had marked erosion of the teeth showing that at some time there had been a high degree of acidity. Cystitis caused the urine to become alkaline. All showed indican to a greater of less extent.

3. *Uranalysis of Paretic Dements.*—Degree of acidity: There were twenty-one males, four females. Three passed 5 degrees, one 7, three 8, two 9, one 10, one 11, one 12, one 13, one 15, two 16, one 17, one 22, one 28, one 34, one 38, one 39, one 44, one 51, one 52, one 70. These patients were in a quiet state. If the urine could have been examined after excitement or an explosion the degree of acidity would have been greater.

4. *Uranalysis of Private Patients.*—Degree of acidity: I examined one hundred and twenty-nine. Three were also sent to me by Dr. J. F. Keefe of Chicago, making in all one hundred and thirty-two. All were from eleven to eighty-four years of age. All showed erosion and abrasion to a greater or less extent. Three passed 2 degrees; three 8, two 10, two 11, seven 12, two 14, two 15, five 16, six 18, two 19, eight 20, five 22, five 24, six 26, four 28, two 29, six 30, two 31, four 32, two 33, three 34, nine 36, two 38, two 40, two 44, five 46, one 47, two 48, two 50, five 52, five 54, four 56, one 58, three 60, two 62, five 70, one 90, one 127, one 132; only four or 3.8 per cent. had uric acid. I quote here from a previous paper, "Interstitial Gingivitis Due to Autointoxication,"[2] my first fifty patients' degree of acidity, one had 11 degrees, two 12, one 14, two 15, one 16, two 17.5, four 20, one 22, one 24, five 30, seven 36, two 40, two 44, one 46, two 56, one 58, one 59, one 60, two 62; 3 per cent. had uric acid, all had indican.

The method of obtaining the degree of acidity of the urine given by Neubauer and Vogel[3] is very simple. The instruments necessary for this work are one burette 50 c.c., one wooden stand, one Barnes dropping bottle, one 10-c.c. graduate, and one small glass. Place the burette in the wooden stand in an upright position; fill the tube with the solution (1-10 normal sodium hydrate) to exactly 0. The degree of acidity is obtained by taking 10 c.c. of urine specimen, measured in the graduate glass, then placed in the small glass; add four drops of phenolphtalien; then add drop by drop NaOH (1-10 normal sodium hydrate) until a slight pinkish color is produced. Having noted on paper the number of c.c. of the NaOH in the burette before and after the pink color is obtained, the number of c.c. displaced multiplied by 10 (in order to find the number of c.c. NaOH necessary to reduce 100 c.c. urine) equals the degree of acidity. Each step in this operation must be carefully performed; each instrument must be kept perfectly clean in order to get good results.

The normal degree of acidity of the urine is from 30 to 40. When the degree is below 30 (the difference between the degree indicated and 30 shows the degree retained in the system), it indicates either renal insufficiency or excessive suboxidation products producing renal strain. In cases in which the degree of acidity exceeds 40, there is excessively imperfect oxidation which, irrespective of the types of acid, underlies, as is now pretty generally recognized, severe constitutional stress allied to that of diabetic acidosis.

The question arises, does the quantity of urine passed in twenty-four hours influence the degree of acidity? Thus, if more than 40 ounces (the normal amount) was passed, the degree of acidity would be low as compared with less than 40 ounces. There is a relationship between the polyuria produced by nerve and other strains in seemingly normal persons. This occurs in students under examination and certain hysterics under excitement. The eliminatory functions of the kidneys are interfered with, but the watery excretory powers are increased. There is real, albeit not nosologic, renal insufficiency producing a condition temporarily analogous to diabetes insipidus. The state is not normal but is not necessarily nosological.

On application of the phenolphtalein, if the urine specimen turns pink, it is alkaline, therefore no degree of acidity can be obtained. Litmus paper (held over ammonia until a deep blue is obtained) is applied to the gums and lips to ascertain if the mucus be acid. Acid mucus was found in every case tested. The circle of evidence, therefore, is complete.

It is not my intention here to discuss the uric acid theory of disease except to point out that modern research has shown that uric acid *per se* is overestimated as a cause of diseases. The theory obtained its impetus through Fothergill, thirty years ago, and reached its climax when Haig[4] of London published his work. Modern research has shown that uric acid is only occasionally found in disease.

Some years ago, uric acid was set forth as a cause of interstitial gingivitis. At that time I instituted a series of experiments in two laboratories.[5] Two hundred and fifteen specimens from mouths with interstitial gingivitis were examined. Only 5.5 per cent. contained uric acid. In three hundred and seventy diabetics, 15 per cent. contained uric acid. Of one hundred and thirty-one private patients suffering with interstitial gingivitis, but 3 per cent had uric acid. In the first fifty patients in another series of experiments, 3 per cent. had uric acid. While the number of patients examined for uric acid is small and covers only a small range of diseases, the statistics may seem to be of little etiological moment to the general practitioner. Since faulty metabolism and autointoxication are associated and since all patients had interstitial gingivitis and many erosion and abrasion, they are of the greatest moment.

Few adult persons have not had an excess of acidity at some period. The slightest change in the action of the liver by which nitrogenous material is not converted into urea and pass out through the kidneys will cause acid excess in the system. Complete oxidation is essential to a normal condition. The organs and tissues of the body act as best they can to bring about this condition. In some systems, the liver has all it can do to care for the waste products of the tissues themselves. That fruit acids may be converted into alkaline substances in the system is true. The liver and tissues become overworked. The acids which are taken into the stomach as food are in excess, they are stored up in the system. The fruit habit (especially grape fruit) so generally indulged in to excess in America is producing havoc with the alveolar process, gums, and teeth.

One case is sufficient illustration of the many

requiring treatment. A twenty-seven-year-old woman had her teeth and mouth put in good condition in January, 1907. February 16, she returned with what she thought a cavity at the cervical margin of the left superior cuspid. Upon examination, I found the gums inflamed and receding, not only at that particular location but about all the teeth. Previous to this, the gums and mucous membrane were in fairly good condition. Litmus test showed the mucus to be very acid. There was no cavity, only sensitive exposed dentine. Much gas was passing from the stomach. Upon interrogation in regard to her food she informed me she had been eating grape fruit every morning for three weeks. Uranalysis of a twenty-four-hour specimen showed the degree of acidity to be fourteen. Sixteen degrees were retained in the system. The recession of the gums and the sensitive dentine were due to the acid retention. The skin, lungs, and mucous membranes try to dispose of the surplus. If these structures are unable to do so, they are expelled as gas, vomit, or fermentative stools. That the acid excess of the system does pass through the mucous and salivary glands of the mouth to produce destruction of tissue, has already been demonstrated. With these illustrations showing destruction of tissue in the mouth the question arises how far does this acidity affect other tissues and diseases of the body? For want of time, merely a few uranalyses in diseases were made.

DISEASE.	DEGREE OF URINARY ACIDITY.
Arthritis (rheumatoid)	One 70.
Backache (severe)	One 10; one 25; two 30; one 35; one 36; one 40; one 50; one 79; one 82; one 87; one 90; one 95; two 100; two 110; one 120.
Bronchitis	One 56; one 58; one 60; one 61; one 67; one 120.
Constipation	One 25.
Coryza (acute), children 3 to 13 years	One 12; two 13; one 14; one 15; one 16; one 17; one 20; one 22; one 26; one 27; one 30; one 36; one 46; one 47; one 50; one 56; three 58; one 70; one 72; one 90.
Cystitis (acute)	One 50.
Diphtheria	One 28.
Dipsomania	One 44.
Eczema (hands)	One 50; one 80.
Enlarged prostate	One 100.
Enterocolitis (chronic)	One 35; one 80; one 110; one 112
Exophthalmic goiter (puberty stress)	One 54.
Fibrillæ tremor	One 21.
Gastric hyperchloridice	One 60.
Gonorrhea	One 120.
Grip	Two 25; one 40; one 50; one 60; one 75; one 76; one 80, one 82; one 88; one 90; one 94; one 97; one 110.
Hypertrophic rhinitis (acute)	One 21; one 25; one 113.
Hypertrophic rhinitis (chronic)	One 32; one 55; one 90.
Laryngitis (chronic)	One 65; one 85.
Middle ear, inflammation of	One 25; one 32; one 90.
Middle ear, chronic suppurative inflammation of	One 90.
Meniere's disease	One 65.
Migraine	One 40.
Myocarditis (chronic)	One 80; one 100; one 112.
Neuralgia following grip	One 20; one 24; one 25; one 27; one 40; one 46.
Pneumonia	One 18; one 26; one 27; one 33.
Pregnancy	One 10; one 12; one 14; one 16; one 18; one 20; one 30 one 50; one 55; one 60; one 62; one 64; one 67; one 82; one 84.
Rheumatism and gout	One 14; one 15; one 18; one 19; one 20; one 24; one 27; one 35; one 52; one 57; one 61; one 67; one 70.
Rheumatism and heart trouble, 8 years of age	One 40.
Scarlet fever	One 33, one 80.
Sciatica	One 55; one 108; one 132.
Sphenoid sinus, inflammation of	One 57.
Sunstroke	One 20.
Tired feeling	One 25; one 40.
Tonsillitis (ulcerating)	One 10; one 12; one 14; one 20; one 27; one 48; one 72.
Tuberculosis	One 10; one 20; one 21; one 30; one 44; one 52; one 56; one 78; one 81; one 88; one 102; one 108; one 115; one 142.
Tubercular hip disease	One 80.
Typhoid fever	One 76; one 88; one 90; one 100; one 120.
Urticaria	One 47.

On comparing the office patients of the dentist with those of other specialists and patients ill at home or in a hospital, it is found that the degree of acidity does not vary to any great extent. A constant abnormal degree of urinary acidity, in an individual attending to his affairs, means that sooner or later an organ or structure is bound to give way. This is particularly true at the senile period of stress (about sixty) when the arteries degenerate. The victim of abnormal degree of acidity is more subject to disease than one with normal acidity. Study of the effects of high degree of acidity in an otherwise normal individual whose teeth and alveolar process are being destroyed has exceedingly interesting results. In the evolution of man, the face, nose, jaws, and teeth are being lost for the benefit of the brain under the law of economy of growth. They, therefore, are transitory structures. The alveolar process exists to hold the teeth. If the teeth be not present or if they be lost in the lifetime of the individual, the alveolar process disappears. The bone appears and disappears twice during life, if the second teeth be lost. The alveolar process, then, is a doubly transitory structure. The alveolar process being an end organ, blood-vessels and nerves extend through it as far as the peridental membrane and stop. The tooth so fas as disease of the bone is concerned is a foreign body. The alveolar process, the most sensitive structure in the human, is the first to be involved when acid or other autointoxication or chronic poisoning takes place.

Lessened blood alkalinity affects the whole alveolar process by setting up an irritation and inflammation of the coats of its arterioles and in the tooth pulp (which is also an end organ), producing endarteritis obliterans, arteriosclerosis, and nerve-end degeneration. I have demonstrated those diseases many times. Disease of the terminal nerves and arteries causes absorption of the bone. The inflammatory process has been termed interstitial gingivitis; the bone absorption, osteomalacia, or senile absorption, although it may occur early in life.

May not osteomalacia in other parts of the body be due to the same cause? The change which has taken place in the blood owing to excessive acidity? The change which has taken place in the blood owing to excessive acidity plays a very important part in the action of the heart, producing high tension. It is supposed to act direct upon the subendocardiac ganglia and also by the irritation directly through the coronary arteries and their

branches to those ganglia situated in the muscular tissue.

Acids in the system must also influence the vasomotor supply causing contraction of the arterioles. In the light of my own researches, another factor must enter largely into the cause of the increased action upon the heart for systolic force, namely, endarteritis obliterans, arteriosclerosis (thickening of the arterial walls), and nerve-end degeneration. Greater pressure is required of the heart to force the blood through the arterioles to their extremities. To ascertain the blood pressure in my patients suffering with interstitial gingivitis, I used Cook's modification of the Riva Rocci sphygmomanometer, this instrument being best adapted for my convenience and exceedingly simple. The armlet used was sold with the instrument and consists of a rubber bag 4½ by 40 cm. The patients ranged from twenty-seven to sixty-seven years of age. With this instrument the normal adult female arterial blood pressure is 115 to 125 mm.; adult male, 125 to 135 mm.

In twenty-six females there were three who ranged between 115 mm. Hg. and 125 mm. Hg. and therefore normal. Three ranged below 115 mm. Hg. and twenty from 133 mm. Hg. to 180 mm. Hg.

In twenty-four males there were eight who ranged between 125 mm. Hg. and 135 mm. Hg. and therefore normal. Three ranged below 125 mm. Hg. and thirteen from 135 mm. Hg. and 160 mm. Hg.

When we consider that thirteen of these patients were under forty-five years of age, the high blood pressure is remarkable.

Other end organs and structures of the body, such as the liver, kidney, eye, etc., are obviously predisposed to affection in the same manner, leading up to sclerosis of the liver. Bright's disease of the kidney, and degeneration of arteries in the brain.

Kidney lesions, due to the eruptive fevers in children, are influenced to a great extent by a high degree of acidity in the system. The effects of high degree of acidity in the mother on the fetus in producing arrest of development at the senile or first period of stress, causing deformities of the child, merit investigation. Wild animals in captivity are very susceptible to deformities; no other etiological explanation has, so far, accounted for them.

An abnormal degree of urinary acidity extending over a period of nine months accounts for many of the neuralgias, toothaches, destruction of teeth by erosion, decay of the teeth and wasting of the alveolar process, skin diseases, and many other lesions so common in pregnancy which cease to trouble after birth of the child. Mental strain due to overwork, grief, shock, etc., check the secretions causing an abnormal degree of urinary acidity which eventually results in diabetes, Bright's disease, and arterial degeneration. There are many other lesions traceable to or influenced by a high acidity of the system.

While uranalysis has only been made in few diseases, enough has been demonstrated to show that an excess of acidity is found in the urine of all diseases. It will be noted that a high degree of acidity is found in the more simple ailments, such as head and backache and cold in the head, as well as in the more severe diseases, such as pneumonia and typhoid fever. Especially is this true in pregnancy. The abnormal degree of urinary acidity or reduced alkalinity of the blood must of necessity interfere with nutrition as well as to prevent the proper action of drugs. Enough has been mentioned to show the relation of an abnormal degree of urinary acidity and the necessity of uranalysis in every case to ascertain the degree. The abnormal degree should be restored to normal as part of the treatment.

Lately some very able papers have discussed acetone bodies in the urine (acetone, diacetic, and β-oxybutyric acid) in relation to the anesthetic administration of chloroform. Deaths have occurred without apparent cause within a few days or weeks after a successful operation.

A number of theories have been advanced as to the cause, such as chloroform poisoning, nephritis, acute yellow atrophy of the liver, acetone bodies, etc; the principal one shown by postmortem being fatty degeneration of the liver and occasionally nephritis. Some other primary cause must exist to bring about the changes in the kidney and liver which would not result from chloroform acting upon a healthy organ.

In my diabetics a small per cent. of cases only presented the acetone bodies. There was, however, an abnormal degree of urinary acidity showing that the liver and kidneys were overworked.

In the case of Drs. Bevan and Favill[6] the degree of acidity was 11.6 degrees, or 18.4 degrees retained in the system (30 to 40 being normal). How long this degree of acidity had been in the urine no one knows, probably a long time. Examination of the teeth, gums, and alveolar process by a skillful dentist would have determined. Such a degree of acidity could not have occurred without a decided impression upon these structures as well as upon the liver and kidneys. The diacetic acid which was present gradually diminished until the day before death, when it had disappeared altogether. This, however, could not have been the case with the degree of acidity, since it would require some days to reduce it to normal.

Autopsy showed "chronic nephritis (minimum degree)" which together with the abnormal degree of urinary acidity would indicate renal insufficiency for a long period. Retention of acid in the system, no doubt, caused the nephritis. The lessened alkalinity of the blood, together with other poisons, due to renal insufficiency, was clearly the primary cause of death, administration of chloroform being secondary.

In 1873, the late Prof. Freer sent a fifty-eight-year-old man to me to have his teeth removed. He had recovered from an attack of Bright's disease sufficiently to have this operation performed. The man walked to my office, had twenty-two loose teeth removed under the influence of ether, recovered from the operation, walked home eight blocks, had regular meals, slept well two nights, became restless on the third, and died without any apparent symptoms on the fourth day. Shock from the extraction of the teeth could not have caused death. The alveolar process was entirely destroyed. The teeth were simply held in position by gum tissue. All were loose and could have been removed without forceps. An abnormal degree of urinary acidity must have been present in this patient.

In 1882, I administered nitrous oxide gas to a twenty-eight-year-old man for the extraction of a tooth. The mouth was held open by means of a cork between the teeth. Before I could get the patient under the influence of the gas the face and lips became blue, a spasm of the muscles of the face and jaws occurred, cutting the cork in two. The muscles of the jaws and face became fixed and rigid

as did all the muscles of the body. After three hours' labor, I was able to take the patient home. He was sick in bed for four weeks and finally recovered.

People often have a bluish appearance of the face and lips with spasmodic action of the muscles of the face while going under the influence of nitrous oxide gas. It was formerly supposed to be due to impure gas. This, however, was shown to be untrue after the process of compressing the gas in cylinders, which must of necessity be pure.

Since, as I have shown, many individuals have an abnormal degree of urinary acidity under which destruction of the teeth and alveolar process results, colds are contracted, headache and backache, and many serious lesions develop in pregnancy to be corrected by making the acidity normal, is here not a positive index for prophylaxis? Should not the surgeon, who operates upon a patient first, if time permit, make the acidity normal? In every disease to which the physician is called, should not the degree of acidity of the urine and amount of indican first be obtained to have some definite basis for work? Will not drugs produce better results in diseases if the urinary acidity be normal? Frequently the treatment of these two symptoms alone restores the patient to health.

I am obligated to the following physicians for their assistance: Dr. Sidney Kuh, Cook County Hospital; Dr. S. M. Robin, Cook County Hospital for the Insane and Poorhouse; Dr. Robert Preble, St. Luke's Hospital; Drs. W. A. Evans and Adolph Gehrmann, Columbus Medical Laboratories; Dr. J. F. Keefe, Dr. J. G. Kiernan, Dr. S. S. Bishop, Dr. E. D. Howland, Dr. J. D. McGowan, Dr. J. C. Gill, Dr. W. K. Harrison, Dr. Bertha Bush, Dr. Vida A. Latham, all of Chicago.

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A CASE OF INTESTINAL OBSTRUCTION DUE TO PERSISTENCE AND ANOMALY OF THE URACHUS; OPERATION; RECOVERY.

By ANTONIO FANONI, M.D.,

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VISITING SURGEON TO THE ITALIAN HOSPITAL, INSTRUCTOR IN GENITO URINARY SURGERY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL

On September 20, 1906, I was called to Portchester to see a man, G. D. S., twenty-five years old, single, carpenter. He had come to this country from Italy in June, and had been in perfectly good health until two years ago, when he was seized with an attack of abdominal pain which lasted two or three days, with constipation and vomiting. These symptoms disappeared after three days, when his bowels moved. In the early part of July, after his arrival in America, he had another similar attack of pain in the abdomen, vomiting partly digested food, but his bowels continued to move. The attack again subsided after four or five days.

He remained well until September 14, when he was seized with abdominal pain more violent than in any previous attack, with vomiting of stomach contents. The pain subsided somewhat after the administration of morphine hypodermatically by a local physician. His bowels did not move in spite of the fact that every possible means suggested by three physicians had been applied. On the day following the onset of the attack the vomiting became stercoraceous and remained so for six days.

When I first saw the patient I was struck by the anxious, hollow-eyed, sallow, wax-like, and drawn face, expressing intense suffering and exhaustion from lack of sleep and nourishment. The skin was dry and the tongue dry and coated. There were spasmodic twitchings of the abdominal muscles. The temperature was subnormal, and the pulse 115. The pain, vomiting, and constipation had persisted since the first day. While I was examining the patient he was seized with excruciating pain and piteously begged for morphine. On palpation I found tympany above the umbilical line and dullness below this line.

The diagnosis was intestinal obstruction, and immediate operation was advised. The patient was at once transferred to the Italian Hospital and was operated on the same evening. His pulse before operation was 128, temperature 100.6° F., respiration 28.

First Operation.—An incision was made on the right side along the external border of the rectus to the pubis, revealing one inch below the umbilicus a coil of intestine so large that it looked like an overdistended stomach. This portion of intestine was held between the anterior abdominal wall and a stout fibrous cord the size of the little finger, showing here and there a fine fringe of peritoneum. This cord was followed downward, and was seen to be attached to the fundus of the bladder. It was followed upward where it was attached to the anterior abdominal wall one inch above and two inches to the right of the umbilicus. This cord had no connection with the liver, and its upper end divided into three branches which spread out in the shape of a fan.

The first thought on seeing this cord was that it was either a remnant of an umbilical vessel or of the urachus. Having satisfied myself that it was not a vital structure, it was ligated at both ends and excised. This at once freed the intestine, which was dark and congested in places, but did not show any gangrene. Owing to the patient's desperate condition, no further attempt was made to handle the intestines, although there was a small spot which looked as though it had been considerably damaged. The abdomen was closed in the usual way.

First Pathological Report.—A specimen of the resected urachal tissue from the upper end of the urachus (the lower and longer part resected was unfortunately lost in the operating room) was sent to Dr. H. T. Brooks of the Post Graduate Hospital for histologic examination. The following is Dr. Brooks' report: "The specimen received from you a few days ago was composed of three layers. (1) A thick, dense outer layer of concentrically arranged fibrous connective tissue; (2) an equally thick, perpendicularly arranged fibrous layer which gradually merges with a (3) internal richly cellular layer. This third layer extends to a centrally located lumen, at which point it is markedly infiltrated with round cells and polynuclear leucocytes. Here, also, are a number of small areas of coagulation necrosis near which occasional giant cells are observed. There is no sign of a mucous lining. The general structure of the tissue resembles a

duct, apparently the remains of the urachus. The pathologic condition appears to me to be an acute suppurative infection upon a probable tubercular basis."

The slides were then also sent to Dr. James Ewing of Cornell University Medical College, the following being the report kindly rendered by Dr. Ewing: "The wall of the structure is composed of dense fibrous tissue circularly arranged and containing a moderate supply of large and small vessels, arteries, and veins. There are no definite remnants of muscular tissue. The canal is lined by a dense layer of thick, granulation tissue in which are many round cells and some giant cells. No tubercles are seen. The histological structure is consistent with an origin from a chronically inflamed patent urachus, which is also strongly indicated by the anatomical relations."

The slides were finally taken to Dr. T. M. Prudden of Columbia University, who agreed completely with Dr. Ewing's statements, subscribing to the same in full.

The patient had a spontaneous movement of the bowels two hours after the operation, and had two additional movements during the night.

Owing to the close relations of the urachus and the bladder, it was thought advisable to cystoscope the patient and see whether anything could be detected that might throw light on his condition. The bladder was normal. The left ureteral opening was in the normal position, but about four times larger than normal. The ureteral catheter passed readily to the renal pelvis and there was no evidence of narrowing. The right ureteral orifice was of about normal size and there was some difficulty in finding it. There was nothing to suggest an inflammatory process. The catheter on the right side also easily passed up to the renal pelvis. After three weeks the patient left the hospital in perfect health. He had gained a good deal in weight, especially as he had been kept under general tonics.

The patient remained well until two months after the operation, when I was again informed by telephone, from Portchester, that he could not move his bowels and that he had cramp-like pains in the abdomen. I suggested purgatives, which proved effective and relieved the pain. About two weeks later he came to my office and told me that every two or three days he had a recurrence of pain and constipation. He feared he would not improve and preferred to remain in New York where he could be under my observation.

On examination a swelling was found in the right hypochondriac region, over the side of the stump of the urachus which had been left in the abdomen. It was thought that some inflammatory process existed in the roots of the urachus, as there was some fluctuation in that region, and that a recurrence of the obstruction might be due to adhesions of the stump of the urachus to the intestine. At all events, every means of moving the bowels was tried for several days without success. As the pain was getting worse, it was decided not to lose any valuable time, but to operate at once in order, firstly, to relieve the obstruction, and secondly, to open the abscess.

Second Operation.—Accordingly, an incision was made in the semilunar line, over the tumor. When the structures down to the peritoneum had been cut through, some cheesy material was found and removed, together with the three remnants of the roots of the urachus. After cleansing the field thoroughly, the wound was packed with gauze and closed, leaving sufficient opening for drainage. Then, protecting the drains with gauze, the incision was enlarged downward for three inches, and after having freed numerous small adhesions, it was found that a band of adhesions had formed between the omentum and the urachal stump, and that a loop of small intestine about fifteen inches long had become gradually constricted by this adhesion, so that the lumen at both the distal and proximal ends of the loop permitted the passage only of fluids. The narrowing at the ends of the loop was largely due to hyperplasia of the wall of the gut, caused by the compression of the band.

As there were no signs of necrosis in the gut, and the blood supply was not markedly interfered with, and as the two ends of the gut to be united differed so greatly in caliber, a lateral intestinal anastomosis was made, the coils of the intestine being placed side by side and joined by a continuous, non-penetrating silk suture and finished in the usual way, without removing the loop of intestine.

Owing to the proximity of an infected focus, a cigarette drain was introduced down to the sutured gut and the abdominal cavity closed in three tiers. The drain was removed after four days and the patient made a rapid recovery, gaining nearly twenty pounds in three weeks. He left the hospital four weeks later in excellent condition.

There was no sign of tuberculosis in either the intestines or the peritoneum. The cheesy masses found in the roots of the urachus therefore seemed to be evidence of a localized tuberculous process.

Second Pathological Report.—Specimens of the urachal stump tissue were again submitted to Drs. Brooks, Ewing, and Prudden for examination, and the following are the reports of these pathologists:

"Microscopic examination of the urachus tissue recently received from you showed the typical histologic structure of tuberculosis and also tubercle bacilli."—H. T. Brooks.

"In a small area in the stump of the urachus removed at the second operation there is granulation tissue containing many typical miliary tubercles with characteristic giant cells. A stain for tubercle bacilli would probably render the diagnosis positive."—J. Ewing.

"The second specimen showed a small area of tuberculous inflammation."—T. M. Prudden.

The urachus is the remnant of the allantois of the embryo, and connects the body of the bladder with the umbilicus. It is widest at the bladder and grows thinner as it ascends. In my patient the urachus was abnormal in several respects. It started at the bladder, was free in the abdominal cavity, and instead of ending at the umbilicus it passed two inches to the right side of the navel to a point one inch above the latter, and there divided into three spreading branches, as already described. The free part of the urachus formed the chord of an arc made up by the abdominal wall and the bladder, and in this arc the intestinal loop was caught.

The history of the patient points to the occurrence of an attack of obstruction in Italy two years before I saw him. The intestine, however, succeeded in freeing itself, and he recovered from this attack. The operation performed after his second attack removed the cause of obstruction.

While in all abdominal work a certain degree of speed is most desirable, this is imperative in intestinal obstruction. For this reason I did not cover the stump of the urachus with peritoneum, and this, perhaps, was the cause of the recurrence of obstruction. Such recurrences are frequently

met with, as the result of adhesions without the presence of any stumps. I felt satisfied when I had removed the cause of obstruction and that I had better chances for a good result in this case if I closed the abdomen as soon as this had been done instead of subjecting the frail, exhausted patient, whose resistance was very low, to a more lengthy operation.

As to the tuberculous condition found in the second specimen of urachal tissue, I have every reason to believe that it was purely local, namely, a tuberculous degeneration of the upper end of the urachus. I cannot say this positively, as the longest piece of urachus was lost at the first operation. If the entire urachus had been diseased, probably there would have been more trouble by this time.

This case, so far as I know, is unique in that the cause of obstruction was an abnormally attached, persistent urachus; at least, a search of the literature has failed to reveal a similar instance. The tuberculous condition of the stump and the good recovery after the operations are features which add interest to the case.

119 West Eleventh Street.

A COMMENT ON THE X-RAY AS APPLIED TO PROSTATIC ENLARGEMENT.*

By L. BOLTON BANGS, M.D.,
NEW YORK.

The following case is a typical, uncomplicated one of enlargement of the prostate. It is presented to illustrate a phase of the "*x*-ray" movement.

The patient is a well nourished, vigorous subject of sixty-four years of age, who gave me the following history of his symptoms and treatment prior to coming under my care. Ten years ago he first noticed a slight degree of dysuria and diminution of the stream of urine. The dysuria gradually increased, and frequency of urination developed, till a little over two years ago he was urinating every hour in the daytime and four times in the night. At or about this time vesical tenesmus also began to be a distressing symptom. He then received treatment, which consisted of the systematic use of the catheter and the passage of sounds. Under this treatment there was gradual improvement. The dysuria and frequency lessened and the tenesmus disappeared. The amount of residual urine at first was not stated, but there was a gradual diminution in its amount till in February, 1905, it varied from ¾ oz. to 3 oz., rarely as much as 3 oz., and his nocturnal urination was usually once, occasionally twice. There being no further improvement, the average residual urine remaining at about 1½ oz., it was suggested to him to try the *x*-ray treatment, which was begun in March, 1905. A month later, in April, 1905, he ceased using the catheter, and had received in all sixteen or eighteen treatments. According to his statement the *x*-ray tube was placed a few inches from the perineum. He declares that he was immediately improved, the intervals becoming from three to four hours, but the nocturnal urination remained once and sometimes twice. Also at this time there was occasionally an annoying urgency and, when his mind was occupied, the interval between urinations was longer; but after such an interval the urgency would be distressing and imperative. In the autumn of 1905 he had another course of *x*-ray treatment; but, notwithstanding this, the return of cold weather caused a mild relapse of his difficulties, and he spent the winter of 1905 and 1906 in Egypt, with relief of the symptoms, but with occasionally a little relapse of frequency and tenesmus. In September of 1906 his symptoms returned with full force, the tenesmus especially to such a degree that he had to sit down to urinate, as his bowels would move at the same time.

Toward the end of December, 1906, the *x*-ray treatment was resumed. He experienced some improvement, but after the twelfth treatment dermatitis of the perineum ensued which caused a temporary suspension of the method. Notwithstanding the treatment and his belief that he was being improved, his symptoms persisted, sometimes with marked severity.

He came to me on the 16th of last March, the last *x*-ray treatment having been given on the 12th of March. At this time he had diurnal urination every two or three hours; nocturnal, twice, and slight tenesmus with occasional severe exacerbations. Rectal palpation found the prostate symmetrically enlarged in all directions, say four times normal; the searcher showed a large median and right lobe intravesically and excluded stone, and by catheter were obtained over eight oz. of sterile residual urine. He is now under observation. He still has notable organic enlargement of the prostate; an average of eight oz. of residual urine; and, unless the bladder is relieved by the catheter, he has severe tenesmus which provokes an involuntary emptying of the rectum.

Inasmuch as from time to time I am hearing of, or reading of, cases of prostatic enlargement purporting to be cured by *x*-ray treatment, it seemed advisable to analyze one which has come under my observation. The explanation of his relief is simple and is quite characteristic of many such cases. The systematic use of the catheter relieved an overdistended bladder with restoration of a certain amount of its functional capacity. This restoration persisted for over a year with intercurrent attacks of mild tenesmus and frequency due, no doubt, to some sudden increase in the volume of his urine, which suggested a winter in a mild and equable climate. Finally, there was gradually a refilling of the bladder beyond the ability of its muscular wall to contract upon its contents, with a relapse of all his symptoms. Such cases should be kept steadily under observation in order to determine how much of the bladder function can be restored and maintained. If sufficient bladder function and asepsis cannot be maintained, prostatectomy should be advised.

20 East Forty-sixth Street.

*Read at a meeting of the Practitioners' Society of New York, April 5, 1907.

Alteration of the Liver in the Newborn Accompanied by Incomplete Pulmonary Respiration.—E. Alfieri has examined the livers of twenty-six new-born children who died during labor or soon after birth, from a few minutes to eight days. He found that the cells of the central zone of the liver lobules were swollen and edematous in all those cases in which the infant died without having respired freely, or from prematurity, or from severe intrauterine asphyxia. Adding to these facts the observations that have been made in animals, the author believes that we are justified in thinking that the retardation of the circulation in the umbilical veins, and its cessation without the establishment of respiration and active pulmonary circulation caused the alterations in the liver. The swelling and edema of the liver cells is an expression of the suffering of the infant in the womb, whether death occurred within the uterus, or the circulation was disturbed after delivery by obstruction of pulmonary respiration.—*La Riforma Medica*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE MANAGEMENT OF THE AMERICAN MEDICAL ASSOCIATION.

DURING the past year the MEDICAL RECORD has on several occasions called attention to certain abuses in the management of the American Medical Association and has insisted upon the necessity of reform in the plan of organization of the Association in order that those who have arrogated to themselves the absolute control of this great body may be shorn of some of their powers. The President-elect of the Association, Dr. Joseph D. Bryant, has also expressed himself indirectly as strongly opposed to this misuse of authority on the part of certain of the officers, and in his annual address before the Medical Society of the State of New York in January of this year took occasion to warn his fellow members of the danger of allowing such abuses to creep into the management of their own organization.

In the May issue of *American Medicine*, a journal whose loyalty to the Association is as firm as our own, appears a temperate but scathing criticism of the management of this afflicted body which should be read and pondered by every member and friend of the Association. The editor says that the defects in the plan of organization of the Association are now becoming apparent and that it is a sorry blunder on the part of the rulers to oppose discussion of its weakness and to attempt to stifle criticism of the manner in which they exercise the power which this plan gives them. The evils of too much officialism, he says, are generally recognized throughout the profession and he quotes the admonition of President-elect Bryant regarding what the latter called "the grave perils begotten by the spirit of paternalism which, not infrequently, is a pernicious by-product of organized power." As an illustration of the lust for power which some of the rulers of the Association have conceived, the writer cites the case of a certain trustee who "is said to have spent in visiting delegates much of the three months preceding the meeting at which his re-election or the election of his successor was due—'mending fences' is the political phrase." It is possible this man was inspired with the belief that his continuance in office was essential to the welfare of the Association, but the uncharitable will be inclined to think that he wanted to continue in power in order to work, rather than work for, the Association.

The encroachment upon the liberty of the individual members of the Association, resulting from "the increasing tendency of the 'leaders' toward mere money-getting, monopoly, and trades-unionism," is dwelt upon, and in this connection President-elect Bryant is again quoted where he says: "If on our part, a spirit of fraternal oppression of any kind should develop as the outcome of organized strength, then indeed will the day of consolidation become one of mourning for the loss in fraternal fellowship and in professional station." In noting further the danger inherent in the plenary powers conferred upon the trustees under the present plan of organization, it is said: "These nine men (with the President and Secretary) may divert portions of the vast accumulations possible under the present policies to ends not in accord with the original aims of the Association nor thoroughly representative of the great body of the profession. One may instance such steps as entering into competition with publishers of books or with the manufacturers of drugs in the name of the Association and by use of its funds. The real aims in such measures may be masked by a specious plea for purity and professionalism." Another evil, one might almost say *the* evil, arising from the enslavement of the great body of members of the Association, whose vocation is science, not politics, is the concentration of power in five officers, four of whom are not elected by the members of the Association or even by the representatives of the State societies in the House of Delegates, but are appointed by the trustees. Two of these officials, the Organizer and the Advertising Manager, hold each but one office. The other lucrative offices, those of General Business Manager, Secretary, and Editor, are held by one man, and it is stated "that the incumbent of these offices is present at all the meetings in an attitude of practically determining all decisions!" It is contended that this triple function cannot be satisfactorily discharged by the present incumbent, for "no one man can by any gifts of nature or acquirement properly perform these diverse duties."

The reforms demanded in the interests of progress by a large and increasing body of the profession, among whom are many members of the Association, and not a few of its officers, including, if his address before the New York State Society had any meaning whatever, the President-elect, are summarized by *American Medicine* as follows:

(1) Verbatim reports of the proceedings of legislative and governing bodies. (2) Itemization and utmost publicity of financial matters. (3) Proper representation in the offices of Secretary, of Editor, and of Business Manager by separate individuals, with proper compensation. (4) Nondiscretionary power of the Editor, with government by the Sections of the published proceedings. (5) The rendering impossible of trades-unionism and monopolistic methods. (6) Provision for general secret ballots upon important questions of policy by means of the machinery of the Association and its journal, through district and county societies. (7) The extension of the referendum and initiative from the optional legislative to the popular and obligatory form. (8) In order to protect apparent minorities, placing the vote necessary for both referendum and initiative upon a reasonable basis. (9) The rights

of individual members must be held inviolate from attack by those in power. (10) The Association and its journal must be enjoined from entering into purely commercial competition to the detriment of its professional rivals. (11) No paid agent of the Association should be permitted to be a member of, or take part in the deliberations of, the bodies governing or directing his actions or compensation.

THE PROGRESS OF THE ANTITUBERCULOSIS MOVEMENT IN NEW YORK.

Since tuberculosis has come to be regarded as a preventable and in most instances a curable disease, the crusade against its spread has become a world-wide movement. In every civilized community it has become an institution, which no longer assumes the character of a visionary dream, but rather the aspect of a practical every-day problem. This modern movement dates back to the year when the germ of the disease was discovered by Robert Koch, although the full meaning of this knowledge was slow to be grasped and fully utilized. In this city a signal advance may be ascribed to the action of the local health board in 1897 in declaring tuberculosis to be an infectious and communicable disease, and requiring a compulsory report of all cases. In a recent article J. A. Miller (*Columbia University Quarterly*, March, 1907) calls attention to the further advances which have been made by the authorities in their sanitary control of the disease, which includes not only a complete register of all the cases of tuberculosis in the city, but also an inspection of the homes of all those who do not come under the care of a private physician. This is part of an educational campaign, which also includes the distribution of circulars and pamphlets in several languages, the regular disinfection after every death from tuberculosis and after every change of residence, and special prohibition in the sanitary code against spitting in public places.

The work of the special committee of the Charity Organization Society on the prevention of tuberculosis has also been a potent factor in the education of the laity. This body has arranged public lectures and stereopticon exhibits, has distributed cards and circulars of information, and by means of a traveling exhibit it has shown in a graphic manner the various aspects of the tuberculosis problem. The sanatorium idea has in recent years been largely developed, and so important has this matter become that both municipal and state institutions have been established for the care and treatment of the incipient cases. These institutions exert a tremendous influence, and their efforts in curing those in the early stages of the disease have been crowned with great success. Under the most favorable circumstances, however, it is quite evident that by this means only a comparatively limited number of patients can be placed under treatment and, among the poor particularly, the vast majority must stay, be it to live or to die. A fight against the disease in these quarters is surrounded with many difficulties, and until a few years ago was considered impracticable, general inspection and occasional disinfection by the health department being all that was attempted. But now we find that special clinics have been established by the larger public hospitals of which the main feature consists in teaching the patient afflicted with tuberculosis how to live and to care for himself. It means practically the application of sanatorium treatment to the unpromising conditions associated with life in the tenements. This advice is reiterated in the homes by the visiting nurse, so that a more or less constant supervision is attained. The results obtained can be characterized only as remarkable, and show the value of concerted effort instead of the desultory advice formerly given. Proper food and air are prescribed instead of medicines, and as even these are a luxury among the poorer classes, the other charitable institutions have combined with the special tuberculosis clinics to supply the deficiency whenever possible. Common sense and humanity are now made the principles of the treatment of this disease, and as these are effective only when co-operation exists between the properly constituted institutions, which strive to furnish this relief, it is a matter of general congratulation that the object has been attained.

THE ANESTHETIST.

In this age of specialists there has been developed a field of work which although of limited application is of extreme importance. Not so very long ago the anesthetist as he now exists was unknown. The administration of an anesthetic in a surgical operation was relegated to the junior staff in the hospitals or to anybody who was willing to undertake the task in private practice. With the advent of the newer anesthetics and the more complicated methods of administering the old, either alone or in combination, the specialist in anesthesia came to the fore, and, although many consider that his days are numbered, he did succeed in instilling into the minds of surgeons the necessity for a more careful administration of the means without which their operations could not be executed. In hospital practice particularly instruction in anesthetics is now regularly provided for, and the junior on the house staff no longer receives his instruction from his predecessor, who is only too anxious to give up the work, but is taught the proper use of anesthetics and their importance by one especially appointed for that purpose. The responsibilities of the anesthetist should be fully appreciated, and in a recent edition of his book on Anesthesia (London, 1907) Hewitt refers to the necessity of legislative enactments to control the administration of anesthetics. As the law now stands in England, and it is probably the same in this country, the legal responsibility in case of accident lies with the operator, and not with the anesthetist. The conditions of half a century ago permitted this, but in the surgery of to-day the rôle played by the anesthetist may be of even greater importance than that played by the operator, and the responsibility should therefore be shifted. In order that this may be done, the anesthetist must be properly qualified.

In order that this important subject may be properly appreciated more attention should be given to instruction on the administration of anesthetics in our medical colleges. A special course of lectures supplemented by appropriate physiological experi-

ments on animals and practical clinical applications should be made part of the curriculum. There are many fads taught which could well be omitted or reduced and a practical branch of this kind substituted. A practical working knowledge of anesthesia should form part of the equipment of every medical graduate, for, as Hewitt very aptly says in his book, "there is just as great a scope for professional skill and judgment when the respiratory, the circulatory, and the nervous functions of a patient are being profoundly modified by a general anesthetic as there is during enteric fever or some other ailment for which the services of an experienced physician are regarded as essential."

Thoracic Injuries and Abdominal Rigidity.

The value of unilateral or double rigidity of the abdominal muscles, the *défense musculaire* of the French writers, as an indication of injury to or inflammation of the abdominal contents is beyond dispute, and some surgeons go so far in doubtful cases as to make its sole presence the indication for laparotomy. Like most clinical signs, however, it requires judgment for its interpretation and it may exist in most pronounced forms entirely independently of any trauma to the structures below the diaphragm. Hildebrand (*Berliner klinische Wochenschrift*, May 6, 1907) reports a number of cases of gunshot wounds of the thorax, in which pronounced unilateral rigidity of the abdominal muscles and even abdominal pain were present without there being any implication of the abdomen in the injury. In order to explain this misleading state of affairs he points out that the abdominal muscles are supplied by the lower intercostal nerves and that a bullet entering the thorax, even though the wound of entrance is high up, very often finds a resting place in the posterior thoracic wall at a much lower point and in close proximity to the intercostal nerves, so that injury or irritation of these readily results. Under these conditions it is easy to understand that reflex rigidity of the abdominal musculature might be produced and also that the abdomen might be the site of referred pains. It therefore behooves the surgeon to keep this possibility in mind in dealing with such injuries, and to remember that abdominal rigidity may easily be present without the slightest damage to this region.

Joint Mice.

While the diagnosis of the presence of detached portions of cartilage free in the knee joint is usually not difficult and the results of the operations for removal of such movable bodies are usually excellent, it is possible in such cases to fall into an error which if not serious in its consequences is at least unpleasant. This consists in removing the offending particle and considering the operation completed without a careful search for other movable bodies. Ewald (*Deutsche medizinische Wochenschrift*, May 2, 1907) reports such a case in which, after easily removing one bit of cartilage from the knee joint of an athlete, when the dressings were for the first time removed on the ninth day the operator was unpleasantly astonished to find another joint mouse plainly palpable at the side of the joint opposite to the incision. This was removed with equal ease and the patient's subsequent complete freedom from symptoms seems to prove that the conditions in the joint had been restored to the normal. In order to avoid such embarrassing contretemps as this Büdinger has recently recommended that in all cases the knee joint be fully explored through a large incision, but the risks attending such a method of operating are so much greater that it would seem preferable to rely on careful palpation at several sessions, combined with radiography, and to extract any body or bodies that can be detected through small incisions that involve practically no danger of subsequent impairment of function.

A New Method for Examining the Heart.

The difficulties in mapping out the heart by percussion are universally recognized and even experienced clinicians are likely to differ somewhat in the results they obtain. This is true particularly of the relative cardiac dullness, and any procedure by means of which the determination of the cardiac outlines is facilitated is to be welcomed. Such a suggestion is made by Stern in the *Münchener medizinische Wochenschrift*, April 30, 1907, who states that he has derived much advantage from examining the heart of his patients in the elevated pelvis position. The right border especially can be determined with greater ease, since the right heart in this position comes more closely into contact with the anterior thoracic wall and the edge of the right lung is pushed somewhat outward. In answer to the objection that this method of examination yields results due only to an abnormal displacement of the organ, Stern avers that since it is possible by this means to obtain more definite outlines for the organ than in the usual positions the procedure affords a useful means of checking up the results obtained by the ordinary method. He also recommends auscultation in this position, and states that the difference in the character of murmurs, or the appearance of sounds previously not audible resulting in this way, may suffice to clear up an otherwise difficult diagnosis. The procedure is also to be recommended in studying venous pulsation in the neck.

News of the Week.

Washington Milk Committee's Report.—The report of the Committee on the Sanitary Relation of the Milk Supply of the District of Columbia embodies the opinion that the advantages of the pasteurization of milk outweigh its disadvantages, and it is recommended that a central pasteurizing plant be established and maintained under the supervision of the Health Department. The committee states that it is so strongly impressed with the manifold dangers connected with the milk supply that until the needful reforms in dairy methods are accomplished it recommends to the public the following as immediate safeguards: 1. Do not patronize a milk dealer at any price whose milk after standing for two hours reveals a visible sediment at the bottom of the bottle. It is evidence of dirty habits, extremely suggestive of danger, and entirely preventable by clean, decent methods without greatly increasing the cost. 2. Subject all your milk to home pasteurization, by simply bringing it to the boiling point, and after cooling keep the milk on ice; this will destroy germ life and reduce the chances of milk-borne diseases to a minimum. 3. Your committee recommends that the result of the recent investigations into the milk supply conducted by the

Bureau of Public Health and Marine Hospital Service, the Bureau of Animal Industry, and the Bureau of Chemistry of the Agriculture Department, with a view of supplementing the work of the Health Department, which on account of its limited force and laboratory facilities could not possibly conduct such an exhaustive investigation, be placed at the disposal of the Commissioners of the District. 4. In conclusion your committee recommends that, until the Health Department shall be in control of a bacteriological laboratory, and a sufficient number of inspectors, the Health Officer request the continuance of the cooperation of the Bureau of Public Health and Marine Hospital Service and the Department of Agriculture for improving the local milk supply. The members of the committee are as follows: George M. Kober (chairman), Emile Berliner, Dr. G. L. Magruder, Dr. C. F. Mason, U. S. Army; Dr. A. D. Melvin, Chief Bureau of Animal Industry; Dr. J. R. Mohler, Bureau of Animal Industry; Dr. M. J. Rosenau, Director Hygienic Laboratory, Public Health Service; Col. R. G. Smith, E. H. Webster, Chief Dairy Division, Department of Agriculture.

The New York City Milk Commission.—The report of the commission consisting of Drs. L. E. Holt, A. Jacobi, Joseph D. Bryant, T. Mitchell Prudden, and Rowland G. Freeman, appointed by Mayor McClellan to investigate the conditions under which milk is sold in this city, has submitted its report, which is based on an investigation of every stage in the passage of the milk from the cow to the consumer. While admitting the advisability of pasteurizing all milk which is open to suspicion, the committee expresses the opinion that what is primarily needed is the extension of the system of inspection at the dairies and milk shipping centers. It is stated that in order to have efficient inspection of the milk business at least one hundred inspectors for the country districts from which the supply is drawn, in addition to the fifteen now available, should be employed.

Result of the Bilibid Prison Inquiry.—Both the committee of scientists and the committee of Filipinos that have been investigating the inoculation of prisoners at Bilibid prison with contaminated anticholera serum have made reports exonerating Dr. R. R. Strong of the Bureau of Science, under whose direction the experiments were being conducted, from all personal responsibility and the Attorney-General has found that there was no negligence on the part of those concerned in the work. Last November thirteen out of twenty-four prisoners who were inoculated with the serum died, as the result, it was afterwards discovered, of contamination of the serum with attenuated plague cultures. Much excitement over the incident was caused among the Filipino population, but the members of the native committee express themselves as satisfied that no one was responsible for the accident and specifically exonerate Dr. Strong. The families of the victims will be provided for by the Philippine Commission.

Plague in India.—The efforts of the British sanitary authorities in India are being greatly hampered in their efforts to restrict the spread of the plague by a story that has been circulated among the natives in the Punjab to the effect that there is no such disease as the plague, but that the recent mortality is all due to the fact that the government has been despatching emissaries throughout the country to poison the wells for the purpose of exterminating the population. The author of the story, who is a Hindu, has been captured by the police and sentenced to two years imprisonment. Thirty-three of his accomplices, who actually dropped mysterious balls into wells, alleging that they did so by the government's order, have been sentenced to eighteen months' imprisonment. The deaths by plague in India during the six weeks ending May 11 were 451,802. In the Punjab alone there were 286,777.

To Systematize the Treatment of the Tuberculous Poor.—The Committee on the Prevention of Tuberculosis of the Charity Organization Society announces that plans have been perfected for the division of New York City into districts with a special tuberculosis dispensary in each district to take care of all consumptives applying for treatment. Under this arrangement the patients are able to obtain more individual care from the visiting nurses, which each dispensary employs, and more regular attendance of the patients is secured. The following dispensaries have entered into the plan: Department of Health, Bellevue Hospital Dispensary, Gouverneur Hospital Dispensary, Presbyterian Hospital Dispensary, Harlem Hospital Dispensary, Vanderbilt Clinic, New York Dispensary, New York Hospital Dispensary, and Health Department, the Bronx. Patients are expected to apply to the dispensary nearest their homes.

Health Conditions in the Isthmus.—The report of the Sanitary Department of the Isthmian Canal Commission shows a decrease in the death rate for the month of April among the employees in the Canal Zone. Among 5,484 white Americans connected with the commission there were only four deaths in April, which gave a death rate of 8.7 per thousand. The decrease in mortality is due chiefly to the falling off of the cases of pneumonia. From this disease there were forty deaths in April, as against fifty-three in March, thirty-nine of the forty being among negroes. There were twenty-one deaths from typhoid, nineteen among the negroes and one among the whites. The number of hospital cases in April was about three-fourths the number in March, while the sick rate is only twenty-one a thousand.

Smallpox.—According to the reports of the Public Health and Marine Hospital Service, in 1906 there were in the United States 12,503 cases of smallpox and ninety deaths, while in 1902 there were 55,857 cases, with 1,852 deaths. In Germany, where vaccination is compulsory and universal, during 1906 there were only twenty-six cases, with five deaths, in the whole empire.

Famine in China.—Owing to the approaching ripening of the new crops the famine in China is said to be broken and the National Red Cross announces that further contributions of money and supplies are no longer needed. The organization has received in money contributions for Chinese famine relief since the work was begun on December 24 last, $320,000, and has received, besides, a large quantity of seed wheat and flour.

Illinois Optometry Bill Vetoed.—Governor Deneen recently vetoed the optometry bill establishing a State Board of Optometry and requiring examination and licensing of opticians. The bill was vigorously opposed by members of the medical profession, and notwithstanding delegations of optometrists and members of the Chicago Optical Society, who were given a hearing before the Governor, he vetoed it.

The Optometry Bill.—The New York Senate has passed the Optometry Bill creating an examin-

ing board for opticians, which really gives to them the right to practise in a limited way a specialty in medicine, as medicine is defined in our new medical law. Year after year the Medical Society of the County of New York has had a Committee on Legislation which has successfully fought these efforts to create new boards, and it was hoped that the law creating a single board for all sorts of practitioners would do away with the need for such effort, but the refracting opticians seem not to be satisfied. The bill now goes to the Assembly for concurrence and an objection on the part of any member of the Assembly will place it in the hands of the Committee on Rules. The physicians of the State are urged to write to the members of this committee asking them to defeat this bill, and also to the Governor, asking him to withhold his signature if the Committee on Rules fail to control it. The following is a list of the persons to whom letters are to be addressed: Hon. Charles E. Hughes, Executive Chamber, Albany; Hon. James W. Wadsworth, Jr., Hon. Ezra P. Prentice, Hon. Edwin A. Merritt, Jr., Hon. Sherman Moreland, Hon. James Oliver, Hon. William A. Burns, Assembly Chamber, Albany, N. Y.

Purchase of Property of Chicago College of Physicians and Surgeons.—A committee was appointed at the meeting of the Illinois State Medical Society, consisting of Drs. C. S. Bacon, J. W. Pettit, and J. Whitfield Smith, to ask Governor Deneen to sign the bill for the purchase of the property of the College of Physicians and Surgeons by the University of Illinois.

Nurses Needed for the Poor.—The New York Association for Improving the Condition of the Poor calls for twenty trained nurses who will volunteer for moderate compensation for its summer work. Some are needed on the staff at Sea Breeze hospitals for children and some for district work in tenement homes. Applications should be addressed to William H. Allen, General Agent, 105 East Twenty-second Street, New York City.

Reception to Professor Killian.—A reception at which Professor Gustav Killian of Freiburg i. B. was the guest of honor was given by Dr. Wolff Freudenthal on last Tuesday evening.

Dr. Follen Cabot, Jr., was elected Professor of Genitourinary Surgery at the last meeting of the faculty of the New York Post-Graduate Medical School and Hospital.

Professor August Bier of Bonn has accepted a call to the Chair of Surgery in the University of Berlin left vacant by the death of Professor von Bergmann. The names of Professor Garrè of Breslau and Professor von Eiselsberg of Vienna had also been mentioned in connection with the position.

Association of Medical Librarians.—The tenth annual meeting of this association will be held at the Marlborough-Blenheim Hotel in Atlantic City on June 3, 1907, under the presidency of Dr. George Dock of Ann Arbor. The secretary is Dr. Albert T. Huntington of Brooklyn.

American Proctologic Society.—The ninth annual meeting of this organization will be held in Atlantic City at the Seaside House on June 3 and 4, 1907, under the presidency of Dr. Samuel G. Gant of this city. The secretary is Dr. A. B. Cooke of Nashville, Tenn.

National Confederation of State Medical Examining and Licensing Boards.—This organization will hold its seventeenth annual meeting in Atlantic City at the Hotel Traymore on June 4, 1907. The president is Dr. Edwin B. Harvey of Boston and the secretary Dr. Murray Galt Motter of Washington, D. C.

Iowa State Medical Society.—Officers as follows were elected at the meeting of this society held in Cedar Falls, Ia., on May 17: *President*, Dr. W. L. Biering of Iowa City; *Vice-President*, Dr. A. G. Shellito of Independence and Dr. H. B. Jennings of Council Bluffs; *Secretary*, Dr. V. L. Treynor of Council Bluffs, reelected; *Treasurer*, Dr. W. B. Small of Waterloo, reelected. The next meeting will be held in Des Moines.

The North Dakota State Medical Association.—At its annual meeting held in Minot on May 15 officers for this association were elected as follows: *President*, Dr. Laughlin of New Rockford; *Vice-Presidents*, Dr. Campbell of Grand Forks, Dr. Countryman of Grafton, Dr. H. A. Beaudoux of Fargo, and Dr. H. W. Phillips of Hope; *Secretary*, Dr. J. H. Rowe of Castleton; *Treasurer*, Dr. J. D. Taylor of Minot.

West Virginia State Medical Association.—At the fortieth session of this society held in Huntington on May 17 officers were elected as follows: *President*, Dr. Flemming Howell; *Vice-Presidents*, Dr. C. O. Henry, Dr. Rader, and Dr. J. Schwinn; *Secretary*, Dr. L. W. Moore; *Treasurer*, Dr. H. K. Owens.

New Mexico Medical Association.—Officers as follows were elected at the meeting of this association held at Las Cruces on May 11: *President*, Dr. R. E. McBride of Las Cruces; *Vice-Presidents*, Dr. Angle of Silver City and Dr. P. M. Steed of Deming; *Secretary*, Dr. G. S. McLandress of Albuquerque and Dr. C. E. Duncan of Socorro.

New Hampshire State Medical Society.—At the annual meeting of this organization held on May 17 in Concord officers were elected as follows: *President*, Dr. John H. Neal of Rochester; *Vice-President*, Dr. John M. Gile of Hanover; *Secretary*, Dr. D. E. Sullivan of Concord; *Treasurer*, Dr. D. M. Currier of Newport.

Polk County (Ark.) Medical Society.—At the recent meeting of this society officers were elected as follows: *President*, Dr. C. Cochran; *Vice-President*, Dr. J. F. Rhodes; *Secretary*, Dr. C. C. Gunnels; *Treasurer*, Dr. D. W. Connelly.

Donation to Chicago Tuberculosis Institute.—Mrs. Keith Spalding of Chicago recently gave to the Chicago Tuberculosis Institute the Edward Tuberculosis Sanitarium at Naperville, Ill., which she founded in November, 1906. She has also promised to give this institution six thousand dollars a year.

Illinois State Medical Society.—The fifty-seventh annual meeting of this Association was held at Rockford, May 21, 22, and 23, 1907. The following officers were elected for the ensuing year: *President*, Dr. Wm. L. Baum of Chicago; *First Vice-President*, Dr. C. W. Lillie of East St. Louis; *Second Vice-President*, Dr. T. H. Culhane of Rockford; *Secretary*, Dr. E. W. Weis, Ottawa, reelected; *Treasurer*, Dr. E. J. Brown, Decatur, reelected. *Delegates to the American Medical Association*, Drs. Frank Billings of Chicago, J. R. Hollowbush of Rock Island, and C. S. Bacon of Chicago. *Alternates*, Dr. G. D. Smith of Elizabeth, Dr. C. B. Horrell of Galesburg, Dr. Robert T. Gilmore of Chicago, Dr. E. B. Montgomery of Quincy, Dr. C. M. Jack of Decatur, Dr. Wm. L. Ballenger of Chicago, and Dr. S. C. Stremmel of Macomb. Peoria was selected as the next place of meeting; time, third Tuesday in May, 1908.

Obituary Notes.—Brig.-Gen. Henry S. Turrill,

U. S. A., retired, of New Milford, Conn., died suddenly of heart disease on May 24 in this city while dictating material for a book he was about to publish. General Turril was born in New Milford in 1842 and was graduated from the Yale Medical School twenty-two years later. He was appointed assistant surgeon to the Seventeenth Connecticut Volunteer Infantry and served through the later part of the Civil War. In 1875 he was appointed assistant surgeon in the regular army and served through the Indian Wars under General A. R. Chaffee. He received the rank of Captain in 1880, that of Major in 1883, Lieutenant-Colonel in 1892, and Brigadier-General about a year ago, just before his retirement.

Dr. Charles Samson Féré, for many years physician to l'Hospice de Bicêtre in Paris, died on April 22 at the age of fifty-four years.

Sir Joseph Fayrer, formerly physician to Queen Victoria and since 1901 physician extraordinary to King Edward, died at Falmouth on May 21 at the age of eighty-three years. In the middle of the preceding century he served in a medical capacity both in the army and the navy and was for a time Professor of Surgery in the medical college at Bengal, President of the Medical Faculty of Calcutta University, and successively Vice-President and President of the Bengal Asiatic Society. He was created a baronet in 1896. He was the author of numerous works on medical topics and of a volume of "Recollections" of his life and times.

Dr. Clarence Tripp Gardner died of nephritis on May 23 at his home in Seaconet, R. I., after an illness of several months. He was born in Providence in 1844 and after having served in the First Rhode Island Infantry as First Lieutenant he was graduated from Harvard Medical School in 1866.

Dr. Guy Davenport Lombard of this city died on May 22 at the age of thirty-five years. He was born in Northampton, Mass., and was graduated from the New York University Medical School in 1896. He served on the Bellevue Hospital interne staff and since 1898 has been Instructor in Histology in the Cornell Medical School.

Dr. Augustus Charles Bernays of St. Louis died suddenly of apoplexy on May 22. Dr. Bernays was born in Highland, Ill., in 1854 and received his medical degree from the University of Heidelberg in 1876. A year later he was made a member of the Royal College of Surgeons in London, and in 1878 he began practice in St. Louis. He was the author of several works on surgery and was active in introducing antiseptic methods into this country.

Dr. Charles Simpson of Minneapolis died on May 16 at the age of sixty-four years. He was born in Scotland, was graduated from the Columbia College of Medicine in 1871, and shortly afterward began practice in Minneapolis. He was Health Commissioner of the city in 1875 and 1876, was the fourth President of the Hennepin County Medical Society, and a member of the State Board of Medical Examiners from 1895 to 1898.

Dr. John W. Suggs of Thomaston, Ga., died on May 17 at the age of seventy-nine years. He had practised in Thomaston for over fifty years.

Dr. Jordan Johnson, lately of Yoakum, died at Taylor, Tex., on May 17 at the age of eighty-four years. He had practised in Yoakum for many years, but retired from active work some time ago.

Dr. George H. Watson of Brooklyn died on May 26 at the age of sixty years. He was born in Sedgewick, Me., and was graduated from Amherst College in 1870. After receiving his medical education in New York and Philadelphia he practised for many years in Bridgewater, Mass. He retired from active work in 1900 and since then had resided in Brooklyn.

Dr. John Hooker Packard of Philadelphia died at Atlantic City on May 20 at the age of seventy-five years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1853. He was for many years one of the surgeons to the Pennsylvania Hospital, but he withdrew from active practice some ten years ago.

Correspondence.

A NEW PLAN OF SUTURING IN PERINEORRHAPHY.

To the Editor of the Medical Record:

Sir:—To overcome the cutting of silk-worm gut sutures in perineorrhaphy, the following plan has given excellent results. Each needle which is ordinarily threaded with one silk-worm gut suture is threaded with two strands of silk-worm gut. When all the sutures have been introduced there will therefore be two strands through each suture line. Select one strand out of each pair and mark them for identification by catching the ends in forceps.

Before tying said strands, by means of a needle "set back" in sound skin the remaining strands for a distance of about one-eighth of an inch from the edge of wound. This may be easily and quickly done by threading an end of each suture on a needle, introducing the needle through the needle puncture in the skin and passing the needle subcutaneously beneath the skin until it emerges a short distance from the original opening. The sutures in the grasp of the forceps are now tied in the usual way and the other set, or those which include a trifle more of skin surface, are not tied at this time. In four or five days, or at any time when the tied sutures begin to "cut" and become "buried," they are removed and the untied sutures are now tied. It is important that as soon as one suture is cut and removed the one that is to take its place should be immediately tied. This will prevent the strain on freshly-adhered surfaces, which would occur if all the stitches were removed before any of the new set were tied. The second set may be removed at the end of ten or twelve days from the date of operation.

The results from this plan have been excellent and the patients have been far more comfortable. The infection, which often starts along the suture line when the suture begins to cut, is avoided by this plan.

William H. Bishop, M.D.

667 Madison Avenue.

OUR LONDON LETTER.

(From Our Special Correspondent

PROBLEMS OF THE REORGANIZED UNIVERSITY—GARMENTS FOR THE TROPICS—ALCOHOL MANIFESTO—CHEMISTS' EXPEDITION—LIVERPOOL TROPICAL SCHOOL.

London, May 10, 1907.

The reorganization of the London University seems to have given satisfaction to no one. The public has not endowed it as liberally as its friends anticipated; its own alumni are torn by dissension as to the results of the change and what they wish for the future, and much the same may be said about outsiders concerned with education in general. With regard to the medical faculty, there are several points of dispute, and discussion has become acrimonious, and personalities have been introduced. All these I pass over, and will refer only to points of general medical interest. First of all, the position as to students, for pupillage must precede graduation—indeed, without a supply of students there would be no graduates. It was hoped that the medical students of London would be able to graduate in the reorganized university as fully and, so to say, as naturally as those of other university centers. But no such result has followed the changes, and while many lament the fact, others rather rejoice, protesting that the obstacle they have leaped ever shall not be diminished, forgetting or unconscious of the fact that some of those obstacles were absurd hindrances to their intellectual development, and merely matters of regulation. It is really pitiable to hear a man who has taken a degree object to a change in regulations which have been shown to be useless hindrances, and to cry out that such changes would lower the value of his degree. The truth seems to

be that many of the defects of the old constitution inhere in the University, and it may be long before all are removed. The University was established as an Examining Board, and promised a degree to all who were able to pass the tests. A person privately educated within the walls of a school or college was promised equality with those taught in academical institutions. The promise was broken by regulations incompatible with the medical curriculum. The most important of these was the insistence of matriculation prior to entering a medical school and making the standard of the matriculation examination that of a minor degree. The student who began hospital work before he had found out this strictly enforced rule, discovered too late that he must sacrifice the time and money he had spent on the hospital school, as none of that could count, because he had not previously passed the matriculation. Here and there such a student made the sacrifice, turned again to his earlier subjects of instruction, and, after passing, came back to the hospital and began again his first session's work in order to secure certificates of attendance on first year's lectures, etc. Thus much money and time was wasted, and few could afford it; for one who could, dozens could not. I know this from long experience as a teacher. The difficulty of the examination, so much complained of, arose from two causes, the first being the subjects were numerous and must all be passed at the same time, rejection in one being fatal in all; the second, the constant effort of examiners to keep up the standard, each examiner holding his own subject as most important, and the constant change of examiners exposing the student to new assessors of his marks. The crotchets of examiners became a study for crammers, who were so successful that the majority of candidates called in their aid. The medical degrees of the University attained a high reputation on the ground that each stage the examination was difficult, but it was to so great an extent merely book work and cramming that succeeded that the defects of young graduates in clinical experience and practical knowledge became proverbial.

Now about the proposed Institute of the Medical Sciences. You will remember that I wrote to you about it at its inception. The Royal Commission recommended the early subjects of the curriculum to be concentrated in one or more centers. University College, as I reported to you, is now such a center, and King's will soon complete its arrangements. The third center was to be the Institute. An appeal for its endowment was issued, a site at South Kensington was granted, estimated as worth about £150,000, while nearly half as much cash was subscribed, and the King and the Prince of Wales approved the scheme. The medical faculty was understood to be satisfied with the prospect of a magnificent institution which would serve as the third center, but lately differences have arisen, and after acrimonious discussion the faculty has voted the rejection of the scheme, the blame being cast upon the hospital schools, which, it is said, cannot compare their differences or, as some say, their jealousies.

The manifesto or joint testimonial to the value of alcohol, which, as I told you some weeks since, was signed and sent to the *Lancet* by sixteen physicians and surgeons, as if they represented the profession or could modify the former declarations signed by thousands, has already begun to produce evil fruit. It is issued by the Licensed Victuallers Central Protection Association and can be seen in many a publican's bar. The *Medical Press and Circular* has issued a countermanifesto, and is satisfied with the response so far, but it will take some time to see what comes of it. Men may be tired of manifesting and shun entrance to the controversy.

The Chemists' Exhibition was opened on Monday and closes this evening. It seems to have been as successful as usual. Of course, it includes much that is of only secondary interest to the medical profession, but a very large part demands and receives its close attention and is well worth seeing.

The Liverpool Tropical School has spent £80,000 on its expeditions, with most important results. Sir A. Jones, president, gave a farewell banquet to the new expedition on sleeping sickness. The next step will be one for blackwater fever, and will probably start in August.

Tertiary Syphilitic Fever.—Luigi D'Amato publishes three cases of tertiary syphilitic fever with the results of treatment and gives us the results of his observations and a review of the work of other authors. He states that syphilitic fever may begin in the early secondary period and last into the tertiary period. It may or may not be accompanied by visceral manifestations, especially in the liver, but the fever does not seem to be dependent on these lesions. It may fall spontaneously without specific treatment, but easily returns. When specific treatment is given it falls by lysis.—*La Riforma Medica*

THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

FOURTH ANNUAL MEETING.

(From Our Special Correspondent.)

At the fourth session of the Philippine Islands Medical Association, held March 1, the first paper read was entitled "The Transmission of Leprosy to Apes," by Moses T. Clegg, Biological Laboratory, Bureau of Science. The experiments recorded were entirely negative, but it was interesting to observe that at intervals of two weeks for a period of three months acid-fast bacilli were found in the adjacent glands near the site of the inoculation in the monkey which was used for the experiments, and further work with this particular animal was interrupted on account of its death from an intercurrent disease. He also stated that organisms injected in symbiosis disappeared from the site of the inoculation a few days afterward, but those injected in pure cultures could be recovered from three weeks to three months afterward.

The next paper, entitled "The Fate of the Agglutinins Upon Filtering an Immune Serum," was read by Dr. Ralph T. Edwards, Biological Laboratory, Bureau of Science. This paper will be published in the Philippine *Journal of Science*.

A paper entitled "On Cultivation of the Piroplasma" was then read by Dr. Kanosuke Miyajima, of the Institute of Infectious Diseases at Tokio, Delegate from His Imperial Japanese Majesty's Government. He stated that whatever success he had had in accomplishing this was due to the information he obtained from the work which has been accomplished by Novey and McNeil in cultivating the *Trypanosoma lewisii*. He took for his investigation the bovine piroplasma, which is very common in Japan. He stated the parasites found were in apparently healthy animals, were mostly of small bacillary forms, while the larger piroforms were ring formed bodies and were only seen occasionally. Upon the full-grown state of the organism being reached, its length is found to be more than three times the diameter of a red blood corpuscle. The organism possesses a well-defined undulating membrane and long, flat flagella; moreover, the position of the nucleus and blepharoplast of the body of the flagella renders it impossible to distinguish the organism from typical trypanosomata. The infected blood was taken from the jugular vein and quickly defibrinated under strict precautions to avoid bacterial contamination. The blood thus obtained is mixed with ordinary nutrient bouillon in proportions varying from one-fifth to one-tenth, and kept in sterile test tubes at a temperature of 20° to 30° C. The development of the parasite occurs as follows: On the first day no motile form was seen in the culture; second day there occurred a certain number of peculiar cells, which occupied the upper layer of the sedimented corpuscles and appeared macroscopically as whitish dots. After these cells were found, motile forms resembling typical trypanosoma were visible, upon the third day after inoculation. Thereafter the organisms multiplied vigorously, and reached the maximum number somewhere between ten and fourteen days. The culture contained motile trypanosomata at room temperature for at least forty-five days, after which most of them underwent deterioration and resulted in irregular granular globular cells. In cultures preserved at a lower temperature, ranging from ten to twenty degrees C., the organsims remained alive for three months. Sub-cultures were readily obtained by inoculating from the original strain. The number of native cattle in Japan which have so far been examined microscopically already amounts to 200, but in not one of these could trypanosomata be found. He also invites attention to the fact that, so far, trypanosomiasis is entirely unknown in Japan. He gave the following conclusions: 1. That the kind of hemacryptozoa known as *Piroplasma parvum* can readily be cultivated outside of the living body. 2. The parasites undergo a developmental change in the bouillon and finally have the typical form of trypanosomata, which cannot be detected in the blood of the infected animals. 3. That a simple mixture of blood and bouillon is the most suitable medium for the cultivation of these parasites, *Piroplasma parvum*, and *Trypanosoma lewisii*. In the preliminary experiments with the cultivation of piroplasma different, culture media were tested, namely, blood agar, sodium citrate, broth in acidulated and unacidulated condition, beef broth, peptone, calf serum, physiological salt solution, and common bouillon. On the 4th of July, 1906, he found motile organisms in one test tube, which contained a small amount of infected blood mixed with sodium citrate solution, prepared after Rogers' method. The entire series of cultures were then subjected to a careful examination, but no motile organisms could be found except in the bouillon.

The next paper, entitled "The Filtration of Antiserums," was read by Dr. E. H. Ruediger, Biological Laboratory, Bureau of Science. He stated that on account of the difficulties met with in endeavoring to obtain antiserums for prophylactic purposes, free from corpuscles, precipitate, and bacteria, it was thought advisable to study the effect of passing the serums through a Berkfelt filter. This had previously been attempted by Woolley, of the Bureau of Science, with rinderpest serum, but had been abandoned because the serum would not pass through the filter. Recently, however, the method was again attempted, and it was found that such serum would readily pass through, provided the blood is free from blood corpuscles, precipitate, and other extraneous matter which would clog the filter. These substances were easily removed by centrifugation for thirty minutes with a speed of 3,000 revolutions per minute. The serum thus obtained was perfectly pure, free from bacteria, and apparently has lost none of its efficacy. At the same time it reduces the danger by filtering the bacteria with which it may have become contaminated during the process of handling. He laid great stress upon the fact that the filter must be cleaned immediately after it has been used, otherwise the filter would become clogged by the accumulation which necessarily takes place during autoclaving. The best method of cleaning the filter has been found to scrub it with a brush in running water and then passing through it a liter or more of distilled water, and, before using it again, the filter should be boiled for at least five minutes in distilled water and then washed out by passing distilled water through it.

A paper on "An Experimental Investigation of the Causation of Beriberi," by Dr. W. V. N. Koch, Medical Officer in Charge of the Infectious Disease Hospital, Hongkong, was then read by Dr. J. M. Atkinson. He stated that those observers who claimed to have found the micrococcus which was the cause of the disease were unquestionably wrong in their views. In order to exclude the possibility of the existence of microorganisms, the following work was undertaken: 1. An examination of blood films made from several hundred cases, stained by different methods; also by 10 to 20 c.c. being withdrawn from patients and different culture methods used, and also by the blood being transferred directly from patients to animals. 2. Spleen punctures were made in nearly 100 cases, and the blood treated as above. 3. Drops of fluids from the subcutaneous tissues were examined culturally. 4. Cerebrospinal fluid drawn by lumbar puncture. 5. Smears and cultures from from organs and tissues of fresh cadavers were made especially from gastroduodenal mucous membrane. In all of the foregoing experiments he failed to find any specific pathogenic organism. After the failure of the above series of investigations, efforts were made to demonstrate the possibility of infecting monkeys by natural means. The rooms in an institution at which an epidemic of beriberi broke out, which were occupied by the inmates who had contracted the disease, were allowed to remain exactly as they had been during occupation, and the conditions maintained as near to normal as possible, except that shutters were closed and the doors made fast. In each of the four rooms two monkeys were turned loose and were kept incarcerated for nearly five months, and were subsequently kept under observation for one year. None of them, after most careful examination, showed signs of beriberi. Associated with these monkeys, rabbits were also placed in the same rooms. After this, some feeding experiments were undertaken. Monkeys were fed from freshly drawn defibrinated blood from beriberi cases, from 30 to 40 c.c. being used, the dose being repeated a number of times. An emulsion of the medulla and pons varolli from recently fatal cases of beriberi were fed to a monkey. Afterward the monkey was inoculated subcutaneously with blood freshly drawn from a case of acute beriberi, probably 5 c.c. were transferred directly from the arm of the patient to the animal. This caused a slight rise of temperature, which subsided, and the animal appeared none the worse. He also inoculated spleen blood and an injection of cerebrospinal fluid. Practically the same experiments were repeated in pigs, sheep, calves, rabbits, fowls, and horses, all with negative results. The conclusions were as follows: 1. Beriberi could not be conveyed to any of the animals used for experiments. 2. It would appear that transference of beriberi infection from man to animals is impossible. 3. In beriberi we are dealing with an infectious disease, but with one of an entirely different etiology.

The next paper was entitled "Leprosy in the Philippine Islands and the Present Methods of Combating the Disease," by Dr. Victor G. Heiser, Director of Health, P. A. Surgeon U. S. P. H. and M. H. Service. This paper will be published in full in the MEDICAL RECORD.

The next paper, "The Habitual Use of Opium as a Factor in the Production of Disease Among Chinese," by Dr. Tee Han Kee, Municipal Physician, City of Manila. He stated more particularly that since the opium law in the Philippines went into effect the Chinese had taken more and more to the hypodermic use of the drug, and that in his opinion the opium habit caused by the hypodermic use was more difficult to cure than that of any other form.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

DEATH OF MOSETIG MOORHOF—A SYMPTOM OF SCIATICA—THE DIFFERENTIAL DIAGNOSIS OF NEURALGIA AND TOOTHACHE—THE ERUPTION OF SMALLPOX—EPIDEMIC CEREBROSPINAL MENINGITIS.

VIENNA, May 1, 1907.

THE tragic death of Prof. Albert Mosetig von Moorhof occurred through accidental drowning in the Danube on April 26. In him the faculty of Vienna loses a scientist whose name has been an ornament to science. Hofrat von Mosetig was one of the most prominent and popular Viennese surgeons and was particularly renowned for the advances he had brought about in military surgery. He gathered rich experiences in the Franco-Prussian war, in the Bosnian campaign of 1878, and in the Servian war of 1885, which he utilized in numerous contributions to medical literature. He introduced iodoform into surgical practice in Vienna and was the inventor of the method of filling bone cavities with an iodoform paraffin mixture. He was born in Triest in 1838 and in 1861 received his medical degree from the University of Vienna. After serving for a time as assistant to Dumreicher, he was, in 1874, appointed Professor of Surgery. In 1871 he was made Chief Surgeon in the Wiedener Hospital, and twenty years later received a similar appointment in the General Hospital.

Sigmund Gara has described a hitherto unknown symptom of sciatica. He observed that patients frequently complained that the onset of the sciatica had been preceded for days or weeks by more or less severe backache, and it was only on the subsidence of this that the pain appeared in the lower extremities. He therefore examined the spine in such cases and observed that on pressure over the spinous process of the last lumbar vertebra very severe pain was occasioned, which was less both above and below. Patients who did not complain of backache also exhibited this symptom. Gara also treated a series of cases supposed to be of sciatica in which there was carcinoma, fracture of the neck of the femur, tumor of the prostate, etc., and in these the above mentioned symptom was either absent or a number of spinous processes were painful. He accordingly claims that the painful point over the spinous process of the last lumbar vertebra is to be regarded as a sign of sciatica only when no other vertebræ are painful.

Franz Berger has studied the problem of the differentiation of neuralgia and toothache. He has found that the faradic current offers an excellent means of detecting diseased teeth. The faradic current, when applied to the well-dried teeth, if they are healthy, causes only a tingling sensation, but if the teeth are diseased severe pain is occasioned. In the case of a woman whose teeth were handsome and appeared healthy, severe and intractable neuralgic pains had persisted for more than a year. By means of the method just described it was discovered that two teeth were diseased and on devitalizing their nerves the pain promptly disappeared.

Carl von Pirquet has described a theory of the smallpox eruption in a communication presented before the Association of Physicians. He believes that in the early vaccinial eruption occurring within twenty-four hours the inflammation is caused through the contact of the lymph with bacteriolytic antibodies present in the previously vaccinated body. The inflammatory symptoms attending the first vaccination, which appear in from eight to ten days, such as the areola and fever, are also to be regarded as caused by toxic products formed through the action of newly developed antibodies. The antibodies which go to the formation of the eruption may be agglutinins through which the causative agents of the disease circulating in the blood are clumped together in the capillaries. This is also indicated by the histological reports of Weigert, who found in the blood-vessels under fresh papules and in the internal organs tubular zoogloea-like masses. Measles resembles smallpox not only in its incubation period, prodromal fever, and leucocyte curve, but also in the fact that in cachectic individuals the exanthem is reduced in intensity and is more pronounced the greater the powers of resistance of the patient.

For some weeks numerous cases of cerebrospinal meningitis have been reported in Vienna. The cases are fre-

quently atypical or abortive and occur in all quarters of the city. Most of them are severe, but under suitable treatment—lumbar puncture and serum injections—give a good prognosis. In one of the southern Austrian provinces an investigation has lately been held for the purpose of determining the necessary prophylactic measures. One of the most important of these is said to be the examination of all persons coming in contact with the patient and who are suffering from nasal catarrh, as many of these are found to have meningococci in the nasopharynx. When these are found, suitable disinfecting sprays are to be used, and disinfection of the body and bed linen of the patients is also recommended.

Progress of Medical Science.

New York Medical Journal, May 18, 1907

Backward and Defective Children.—H. Shoemaker has examined many pupils during the last three years in public and parochial schools and considers that the greatest possible relief would come to them by the adoption of the following rules: First, the relief of all physical defects so far as possible. Second, placing a teacher in charge of a limited number of children. Third, in compelling a home report, from personal observation of the teacher in charge of the actual work, in order that cruelties and neglect may receive proper investigation, or that a teacher may not unwittingly be trying to force an infant mind. Fourth, in making the session shorter. Fifth, in demanding a concession from the parents, which may be implied by admission to the special class, for the correction of all physical defects in their children. Sixth, the employment of manual training, which may create dexterity, even though the power to originate is lacking. Seventh, physical culture and outdoor gymnastics, when possible.

External Hemorrhage with Ectopic Pregnancy.—J. Oliver describes the customary cause and features of ectopic pregnancy, noting that when the oosperm is arrested permanently outside the uterus, especially in the Fallopian tube, it experiences during the full six weeks of its existence so much difficulty in obtaining nutrition by osmosis that it is compelled to unduly hasten not only the vascularization of the chorionic villi, but also the transmutation of those structures which is the prelude to the evolution of the true placenta. The acceleration of these embryonic changes arouses unduly and hastens the activity of the maternal tissues, hence the capillaries located in the lining of an ectopic gestation sac begin to enlarge earlier and are therefore prone to rupture much earlier than the enlarging endometrial vessels of a normal pregnancy. Thus influenced these capillaries become greatly dilated, and if their extrinsic support is weakened the capillaries may rupture. A portion of this blood may find its way to the external genitals. At other times, by a process of vital thinning, a tubal gestation may invade the broad ligament. The placenta may not be disturbed by this invasion and the gestation proceeds uninterruptedly to maturity in the tube and ligament conjointly. Under such circumstances any external hemorrhage noted will come solely from the vessels of the endometrium. The author has already operated in five cases of full time ectopic gestation, extracting the child in each by abdominal section. In two of these patients there was complete amenorrhea during a period of nine months, in the remaining three external hemorrhage was not an important symptom; it was of infrequent occurrence and of short duration, seldom lasting longer than a few hours.

Surgical Treatment of Fibroid Tumors of the Uterus Complicated by Pregnancy.—J. Vance refers to the statistics of this condition, analyzing seventy-two cases collected from literature, reporting one personal case. His general conclusions are thus summarized: (1) All cases of fibroids complicated by pregnancy should be treated surgically and not obstetrically. (2) Myomectomy should be performed only in such cases found suitable for this operation. It is otherwise dangerous. (3) Cesarean section should be done for all cases of fibroids complicated by pregnancy at term. (4) All cases of abortion or miscarriage which cannot be stopped should be immediately submitted to hysterectomy. (5) All cases in which the size of the tumor, pressure symptoms, or any other cause endangers the life of the mother, should have hysterectomy performed. (6) Craniotomy is bad practice at any time and never justifiable on a viable child. (7) All these cases should be sent to the hospital for observation when threatened with abortion or miscarriage, and likewise all full term cases a short time before term, so that surgical procedure can be undertaken with all the care and deliberation of every day major operations. When the above rules are conformed to, many mothers and children will be saved who are now lost.

Drainage in Operations upon the Biliary System.—H. Lilienthal reports four cases, one recovering. He believes that in chronic, profound obstructive jaundice we should secure gradual drainage and be careful not to too suddenly relieve hepatic tension. If the size and condition of the gall-bladder permits, a simple cholecystostomy should be performed as a temporary measure, making the stoma very small so as to prevent the too sudden relief of tension. The operation for radical cure by whatever means may be necessary should be postponed until the conditions have become favorable. In accomplishing this temporary relief great precautions should be taken to prevent the formation of adhesions which might embarrass the operator at the subsequent step. Gauze packings should be dispensed with, and there should be as little handling of the viscera as possible, using the rubber gloved hand *without* gauze during the manipulations. In infectious cholangitis, drainage as early and complete as possible should be the rule. Here we have to do with an active spreading infection and quick removal of as much of the harmful material as rapidly as possible is desirable. In noninfectious and acute (short of six weeks) jaundice drainage by the natural channel into the bowel with suture of the wound in the duct is the most desirable course to follow. In acute obstruction of the cystic duct with no antecedent jaundice, the removal of the cause will often suffice. If the gall-bladder is distinctly diseased or if there is stricture of the cystic duct cholecystectomy with ordinary wound drainage is the best procedure. When there is a history of jaundice, however, one should continue the incision into the common duct in order to be as certain as possible that the way into the duodenum is clear. Drainage will not be required if there has been obstruction by a solitary non-facetted stone, but if the calculus was soft and friable, perhaps a mass of bile sand, very long continued drainage should be the rule. In chronic jaundice with a small, thick gall-bladder containing no bile, it is best to perform cholecystectomy, explore, and drain. In cholemia from obstructing new growth external drainage of the gall-bladder is the correct procedure for the relief of the icterus. In pancreatitis, even without jaundice, drainage by way of the gall-bladder will often effect an apparent cure.

Journal of the American Medical Association, May 25, 1907.

Medical Legislators of Two Republics.—C. A. L. Reed draws a striking contrast between the proportions of medical men in the legislative bodies of France and the United States. There are ninety-two physicians in the two houses of the present French Congress, the Ninth, elected last year, while in our last Congress, the Fifty-ninth, that has just adjourned, there were only four, one in the Senate and three in the House. The contrast is the more striking when we consider the respective populations of the two countries. France, 38,000,000 in 1900, and the United States, estimating on the basis of the census of 1900, approximately 85,000,000, and still more so when we take into account the number of physicians in the two countries—122,000 in the United States and in France hardly one-fourth of that number. Dr. Reed goes over the list of French deputies and senators and shows how many professionally prominent men it includes and how high they stand in public estimation, judging from the honors they have received. Special notice is given to Drs. Clemenceau and Combes. Our present medical representation in our own Congress, while eminently respectable in quality, makes a very poor showing in quantity as compared with that in France. It would seem, as Dr. Reed says, that the medical profession in the United States is not doing its full duty in these higher activities of American citizenship. A partial list of members in State legislatures is also appended.

Isoagglutination of Human Corpuscles.—L. Hektoen describes the phenomena of human isoagglutination, or the clumping of the corpuscles of one person by the serum of another person. Three classes of persons exist as regards isoagglutination: (1) Those whose corpuscles are not agglutinated by the sera of groups 2 and 3, but whose sera agglutinate the corpuscles of groups 2 and 3; (2) those whose corpuscles are agglutinated by the sera of group 3 (and group 1) and whose sera agglutinate the corpuscles of group 3; (3) those whose corpuscles are agglutinated by the sera of group 2 (and group 1), and whose sera agglutinate the corpuscles of group 2. There are the

three corresponding agglutinins, and others no doubt occur occasionally. Of 76 persons whose blood was studied by Hektoen, 36 belonged to group 1, 26 to group 2, and 14 to group 3. Of the 14 persons in group 3, 6 were without any agglutinin, hence it appears that about 90 per cent. of all persons possess isoagglutinin of one kind or another. There is no striking alteration in the agglutinative grouping of persons with various disease, more particularly pneumonia, typhoid fever, scarlet fever, and advanced pulmonary tuberculosis. That human isoagglutinins are bodies with special affinities for the corpuscles on which they act is evident because corpuscles absorb only the agglutinins by which they are agglutinated. The amount of agglutinin varies considerably in sera from different persons, and corpuscles of the same group vary in their agglutinability by the same serum. Human agglutinins are stable bodies; they resist heating to 60° C. for thirty minutes, pass through porcelain filters, and persist for months in serum kept in the icebox. They are distinct from the isohemopsonins of human serum. Their practical importance is in connection with the determination of the opsonic index and the transfusion of blood. The occurrence of isoagglutinins in human blood suggests a danger in homologous transfusion by causing erythrocytic agglutination within the vessels of the subject transfused. The possible danger can be avoided by selecting a donor whose corpuscles are not agglutinated by the serum of the recipient and whose serum does not agglutinate the corpuscles of the latter; that is, the donor and recipient should belong to the same group and preferably to group 1 or 2.

Typhoid Fever from Infected Milk.—J. V. Shoemaker reports an epidemic of typhoid fever occurring in Philadelphia from infected milk. Over twenty patients from one apartment house were taken with the disease within two weeks. The board of health officials made a thorough investigation of the premises and the sanitary conditions. Inquiries concerning the drinking water were made, and it was found that all the patients used either filtered or boiled water. The food and milk supply was then considered. A culture made from the milk showed the presence of typhoid bacilli. It was found that the same milkman supplied all the apartment and boarding houses from which typhoid cases had been reported. The proprietor and one of his servants were both ill with typhoid; the son was convalescing and was filling the milk bottles from a tank by siphonage, starting the flow by sucking with the mouth at one end of the tube. A culture made from one end of this tube revealed typhoid bacilli. Shoemaker states that he does not know of any other case in which typhoid was transmitted through the saliva.

Thymic Tracheostenosis.—Chevalier Jackson reports the seventh case on record of the cure of "thymic asthma" by thymectomy, the first demonstrated radiographically, and the only one, he claims, in which the mechanical compression pathology was proved by direct tracheoscopic observation during life. He gives his conclusions, in substance, as follows: 1. Friedleben's dictum that there is no thymic asthma is an error. The thymus in this case did compress the trachea sufficiently to diminish and to obliterate momentarily its lumen. Thymic tracheostenosis seems a better name for these cases. 2. The dyspnea in this condition is worse in the erect position, and it is expiratory, as might be expected from the increased intrathoracic expiratory pressure and as demonstrated tracheoscopically in this case. The mechanism of this was demonstrated by the flopping out and in of the elevated gland before it was severed. 3. A radiograph is a valuable diagnostic aid. 4. An absolutely positive diagnosis can be made with the tracheoscope. Upper tracheostomy is probably not safe in these cases. Tracheostomy should be done under infiltration anesthesia and should be high, so as to be as far away as possible from the thymectomy wound. 5. A long tracheal cannula, reaching to within a centimeter of the bifurcation, renders the breathing free and the operation of thymectomy safe from risk of asphyxia. 6. The thymectomy is indicated and is best done by the insertion of the little finger from above downward, behind the sternum through a transverse incision, after double sternocleidomastoid tenotomy. The insertion of the finger should be of brief duration, as, though there is no danger of asphyxia, there seems to be serious cardiac inhibition, probably from compression of nerves about the esophagus. Care should be taken not to injure the pleura. 7. An almost complete thymectomy is without effect on either the blood or nutrition. The article is illustrated.

The Lancet, May 11, 1907.

Paratyphoid Fever Following Removal of an Ovarian Cyst.—A case is reported by W. Thyne whose patient was a woman of 38 years, from whom an ovarian cyst was removed, the pedicle being doubly twisted and there being omental adhesions. About two weeks after operation her temperature began to rise and she entered on what was apparently a typhoid stage, there being pea-soup stools and rose-colored spots. No enlargement of the spleen could be detected. No cause for these symptoms could be traced to the operation. The serum did not show the reaction characteristic of typhoid fever, but with certain strains of paratyphoid cultures (though not with all the strains employed), reaction was sufficiently definite to lead to the diagnosis stated above. The author says that if in such cases a diagnosis of typhoid is positive, and the treatment is as customary, no harm results, but when reaction to the Widal test is repeatedly found to be negative, and the case runs a mild course, the diet may be less restricted than it should be, disinfection may be neglected, and disastrous results may follow. He adds that it is only by a bacteriological examination of the blood that typhoid and paratyphoid can be distinguished.

Perforation in Typhoid Fever in Relation to Blood Pressure.—Five cases are summarized by A. L. Sheppard, who tabulates the prominent symptoms. It appears that the pulse rose in 4, and in one was the only marked feature. Peritoneal symptoms were diagnostic in one, while some pain was present in all. The temperature rose in 3, but fell later. Leucocytosis was marked in one, but other signs made the diagnosis of perforation unmistakable. The blood pressure was in no instance the only sign. The author's general conclusions are that the rise of blood pressure is not as certain a diagnostic guide, as some authors have claimed. The signs of perforation, however, are notoriously uncertain, and in no case of typhoid fever, with fairly sudden abdominal pain, combined with any one well-recognized sign (providing there is no other ascertainable cause), should we hesitate to diagnose a perforation. Among these signs should certainly be placed a rise of blood pressure. It seems quite as constant as leucocytosis, and is certainly more easy to observe and chart throughout the course of the disease. A disadvantage that may arise is that owing to restlessness it may be impossible to make an accurate estimation. It will not be common to meet with cases in which violent hemorrhage occurring with perforation renders the pulse imperceptible. In any such case, however, the seriousness of the condition is obvious and the loss of the knowledge of the blood pressure immaterial. All the author's estimates were taken with Martin's modification of a Riva-Rocci sphygmomanometer. In the diagnosis of perforation we must remember that the signs are nearly always most marked about two hours after the accident has occurred, after which they are usually found to return to their previous conditions, and consequently impressions likely to be made on those who see the case at a later stage are often liable to be misleading. The change in blood pressure is no exception to this rule, as the tendency seems for it to fall again to its original level as rapidly as it has risen. In conclusion, one may generally regard, says the author, a rise in blood pressure as positive evidence of perforation, although a stationary pressure is no sign that the perforation has not occurred.

Status Lymphaticus.—L. Vintras discusses the history of this symptom-complex in medical literature. The lymphatic diathesis is not easy to determine. It occurs mostly among tall, rather sparsely built subjects, with fair, clear skins, rather pale, but not with the dead-white pallor of anemia. These patients are of a slow sedentary habit of life, are highly intelligent, self-concentrated, and retiring among strangers. They are very sensitive to climatic influences and they feel the cold keenly. In appearance they are listless and careless, and give the impression of being indifferent to things in which inwardly they are greatly interested. They are emotional, but suppress their emotions. Their fits of anger are concentrated and they are still and turn to a death-like pallor, where others flush red and fly into a passion. There is nothing about them of the spasmodic excitability of the nervous temperament, nor of the hopefulness of the tuberculous temperament. Their pulse is usually slow, sometimes very slow, averaging as low as 45 to 50; but under the stress of worry or emotion their pulse-rate will rise to above 100 and remain so for days and even weeks without any apparent ill effects. It is the same with the heart beats, and it is this which constitutes one of the chief dangers of this condition. Under some strong emotion, but often without any cause, the ratio of the heart beats will double or treble, not in the irregular way, typical of nervous palpitations, but with a steady rise, the heart maintaining a perfectly regular but highly accelerated action. The author believes that in these cases the flabby walls of the heart become suddenly dilated and as suddenly return to their former state. It is quite comprehensible that during

such a paroxysm any interference with the nerve centers may cause the dilated walls of the heart to cease contracting. He thinks that this accounts for many cases of sudden death where no adequate pathological lesion seems to exist. In such patients all catarrhal inflammations are apt to drag on for weeks. Gonorrhea degenerates into gleet and after a long time may clear up or eventuate in joint troubles. Pleurisies are obstinate and the pleuræ exudate will return again and again. Slight injuries may lead to cold abscesses of a size out of all proportion to the cause. Such patients are, on the other hand, less liable to neurotic and tuberculous affections. They have a distinct tendency to improve with advancing years.

The Opsonic Index to Various Organisms in the Sane and Insane.—This subject is discussed by C. J. Shaw, who considers the question with special reference to the results produced by injecting tuberculin. After detailing his experiments, he offers the following conclusions: (1) As the insane are particularly liable to tuberculous infection a comparison of the average indices recorded in the sane and insane and also in the various classes of insane patients would indicate that the opsonic power of the blood serum can be used as a measure of liability to infection and that a low opsonic index precedes infection. (2) The injection of a small dose of tuberculin T. R. in healthy persons produces no negative phase to the tubercle bacillus and therefore may be used as a method of diagnosis. A smaller dose of tuberculin will, however, produce a negative phase in a predisposed person than in one less liable to tuberculous infection. (3) To determine the value of a negative phase after injection the daily variation in opsonic power as well as its level at the time of injection must be estimated. For this reason a number of consecutive observations are necessary; a single, or a number of isolated observations is not sufficient. (4) The average opsonic indices of healthy individuals vary little in different organisms. (5) The injection of a large dose of tuberculin even in healthy individuals causes a fall in opsonic power to other organisms than the tubercle bacillus. This explains the liability of tuberculous cases to secondary infection. For purposes of differential diagnosis by the production of a negative phase a very small dose must be administered. (6) Large doses of tuberculin can be injected into healthy persons without producing constitutional symptoms. Amount of dose may therefore be a matter of diagnostic significance, as a small dose causes a reaction in infected cases.

British Medical Journal, May 11, 1907.

Vicious Circles.—J. B. Hurry defines a vicious circle as a morbid condition in which cause and effect are so correlated that cause becomes effect and effect cause. Morbid processes are often but exaggerations of physiological ones. A healthy cycle is shown in the processes of hemogenesis and hemolysis by which the adjustment between the birth and destruction of the blood cells is effected. Vicious circles are grouped, according to the author, into 1. Organic: An example is seen in acute pneumonia. Dilatation and consequent heart failure are one of the chief dangers, being caused by the increased resistance in the solidified lung. This retards the circulation through the lung, hence throwing more work on the heart, which is already impaired. 2. Symptomatic: *e.g.* pulmonary hemorrhage sets up coughing; result of cough is increased hemorrhage. 3 Infective: Frequently in pulmonary tuberculosis the patient inoculates himself afresh with sputa from the primary tuberculous lesion. 4. Neurotic: In neurasthenia protracted and uncontrolled repose may set up a vicious circle by so deranging the digestive system and affecting the general health that all inclination for physical and mental exertion vanishes. 5. Chemical: A chemical vicious circle occurs in diabetes mellitus, in reference to the two important conditions of polydipsia and polyuria. The polydipsia leads to dilution of the patient's blood, and thus promotes the excretion of sugar and the associated polyuria. The polyuria, on the other hand (by depriving the system of a large quantity of fluid), leads to greater concentration of the blood, and consequently to thirst and polydipsia. 6. Mechanical: A retroverted gravid uterus becomes so impacted in the pelvis as to press on the urethra and cause retention of urine. The distended bladder increases the retroversion and the impaction; the retroversion increases the retention. Similar effects may be produced by myomata or other pelvic tumors. In ascites pressure on the renal veins may lead to ischuria, which in turn aggravates the ascites. 7. Artificial: Alcoholism frequently induces anorexia. This is followed by exhaustion and tempts the victim to seek relief in further indulgence. Again, a miserable home drives a laborer to the public house and to alcoholism, with the result that he has less money than before to maintain his home, which consequently becomes still more miserable. In the case of chronic poisoning of infants by opiates, the child, when not under the influence of the sedative, is irritable and sleepless. Hence the mother finds an excuse for continuing the drug, and the vicious circle is complete. 8. Spurious: A so-called vicious circle is occasionally met with after the operation of gastroenterostomy, when the contents of the afferent end of the jejunum (that is, the segment above the artificial opening), instead of passing into the efferent segment, return through the artificial opening into the stomach and set up regurgitant vomiting. Or the contents of the stomach may pass into the afferent loop and back into the stomach instead of escaping through the efferent loop. A "short-circuiting," in fact, takes place, leading to grave difficulties for which a complementary enteroenterostomy may be required.

Differential Diagnosis Between Ménière's Disease and Other Cases Exhibiting Ménière's Complex of Symptoms.—This subject is considered by T. W. Parry who makes some observations on the practical value of the seton in both conditions and reports one case illustrating the excellent results following the use of the seton in the latter condition. True Ménière's disease occurs in subjects with a normal auditory apparatus, has a sudden onset of symptoms, and auditory nerve deafness. Simulating states occur in patients with previously affected auditory apparatus, and have a gradual onset of symptoms, while deafness is not essential and, if present, is not at the outset of nerve origin. Both states present vertigo, tinnitus, and vomiting. Differential diagnosis, therefore, is established on two points: (1) Examination of the history of the case (whether onset of symptoms is sudden or gradual), and (2) by the tuning fork (whether deafness is of nerve origin or otherwise). The author would make two classes of the causes giving rise to Ménière's symptoms: Class I. Primary Labyrinthine Lesion or Irritation.—(a) An acute exudation or sudden hemorrhage into the labyrinth. This is the "(true) Ménière's disease" of all authors. (b) Chronic labyrinthine lesion, not due to the above causes. The causes of the cases of this class are usually obscure. This is the "Ménière's disease" of some authors and the "Ménière's symptoms" of others. Class II. Secondary Labyrinthine Source of Irritation.—In this class of cases labyrinthine disturbance is produced by extralabyrinthine causes. They are chiefly tympanic in origin. This is the "Ménière's symptoms" of all writers. The use of the seton is highly commended by the author.

Carbolic Acid Gangrene.—Nine cases are summarized by D. Wallace, all following common injuries with carbolic dressings, generally one in twenty strength of solution. In all the original injury or sepsis was trivial in degree. The appearance of the gangrenous part in such cases is characteristic. The skin at first is dry, wrinkled, and grayish-white in color; later it becomes darked and more shriveled. At the junction of the living and dead tissue there is some hyperemia, and eventually a line of demarcation forms. As it is difficult to tell how much is actually destroyed, it is proper to wait for the line of demarcation before amputation is performed. In no one of the cases the author has seen has there been any swelling of the proximal part, but such swelling has been described in some cases. The condition is, as a rule, similar to a typical case of dry gangrene. Various explanations have been given as to the occurrence of gangrene under the conditions mentioned. It may follow the use of solutions as weak as one or two per cent strength. It has been suggested that some individuals have an idiosyncrasy, and are locally much more susceptible to the hurtful action of carbolic acid than others, and that in them stasis followed by thrombosis occurs more readily, and gangrene results. It is the fact that the portion which becomes gangrenous is generally a terminal part of the body—for example, a finger or a toe. That age, sex, or the physical condition of patients do not apparently influence the production of the condition is seen when we note that it occurs at any age, in either sex, and in those who are in perfect health. Patients should always be warned that carbolic acid is a dangerous substance and personally the author deprecates its application of such a dressing to a finger under any circumstances.

Berliner klinische Wochenschrift, May 6, 1907.

Streptococcus Erythema and Its Relation to Scarlet Fever.—Gabritschewsky, who has been experimenting with vaccines prepared from streptococci from cases of

erysipelas and scarlatina, believes that a good deal of evidence exists in favor of the view that the streptococcus is the specific causative agent in scarlatina. He has found that in septic infections streptococci produce scarlatina like rashes and that vaccines prepared from scarlatina streptococci are also able to evoke similar scarlatina-like exanthematous eruptions. The punctate rashes in scarlatina and those resulting from the streptococcus vaccines may be regarded as belonging to the class of infectious, toxic dermatides and as being identical in nature. He also is of the opinion that the fact that in man punctate eruptions with all the other symptoms characteristic of scarlatina may be evoked by vaccines made from the scarlatina streptococcus forms an important and decisive factor in favor of considering the streptococcus as the causative agent of the disease. Accordingly he recommends a further application of streptococcus serum therapy and streptococcus vaccination not only for the complications, but also for the underlying process in scarlatina.

Münchener medizinische Wochenschrift, April 30, 1907.

Observations on the Excretion in the Urine of the Agglutinins in Typhoid Fever.—Hoesslin, in an attempt to gain some information regarding the source of manufacture of the agglutinins, investigated the agglutinating power of the urine in a number of typhoid patients. In fourteen cases the kidneys of the patients appeared to be intact, while in ten others there were complications referable to disorder of these organs. As a result of the tests of the agglutinating power of the urines obtained from these two sets of patients it appeared that healthy kidneys are impervious to agglutinins, for the urines that contained no albumin were found to be without agglutinating power. On the other hand, agglutinins seemed to pass through the diseased kidneys together with the albumin, for the two were found associated in approximately relative proportions. These clinical results were substantiated by animal experiments in which artificial nephritis was induced in immunized rabbits. The author further concludes that the excretion of agglutinin is without effect on the quantity remaining in the body and that the amount lost in this way is constantly replaced. It also appears that the gradual disappearance of the agglutinins occurs within the body itself.

The Interrelationship of the Diazo Reaction, Bacteriemia, and the Widal Reaction in Typhoid Fever.—Genken contributes an article in which he discusses the significance of the chronological element in the occurrence of these three phenomena in the course of typhoid fever, and bases his conclusions on a series of cases which were investigated with this end in view. He concludes that the diazo reaction and bactericmia run a parallel course in cases of typhoid in which no drugs have been used that conflict with the appearance of the diazo reaction. This reaction occurs only in that period of the disease during which bacilli are present in the blood. The elimination of the bacilli from the blood or their complete agglutination leads to a decrease in the diazo reaction and its ultimate complete disappearance in spite of the fact that the fever continues and the patient exhibits the picture of the typhoid state. At the same time the Widal reaction, which represents antagonism to the bacteriemia, is increasing in intensity. If such drugs as salol or calomel are used the occurrence of this parallelism between the diazo reaction and the bacteriemia is not noted since these agents interfere with the development of the reaction. The author suggests that these considerations may lead to an advance in our knowledge of the nature of the diazo reaction, which at present is very fragmentary.

Deutsche medizinische Wochenschrift, May 2, 1907.

The Diagnosis of Subphrenic Abscess.—Determann says that in spite of the efforts that numerous clinicians, such as Leyden, have made to facilitate the diagnosis of this condition, cases occur in which the means at our disposal do not suffice and errors in differential diagnosis are made. He relates one such case in which the diagnosis of right sided empyema was made and at a thoracotomy a large amount of pus was evacuated. The patient died of gradually increasing prostration, and at the autopsy it was discovered that the operation wound had really been carried through the diaphragm and a large subphrenic abscess communicating with an abscess of the liver had been opened. Determann, in view of this experience, recommends that in every case in which the percussion sound undergoes a very gradual transition from pulmonary resonance to extreme dullness or flatness, or in which exudate is obtained from exploratory puncture only in the lower part of the thorax and at a relatively great depth, the possibility of a subphrenic collection of pus must be considered. If this doubt exists the position of the diaphragm should be ascertained by means of a radiograph, and the conical form of the diaphragm shadow observed in cases of subphrenic abscess through the pushing upward of the diaphragm be looked for.

Anguillula Intestinalis Associated with Chronic Diarrhea.—Trappe discusses at length the characteristics of this parasite as well as the views that have been held concerning its pathogenicity. Formerly regarded as the cause of the so-called Cochin-China diarrhea from which the French soldiery suffered, it was later considered to be a harmless parasite. More recently, however, the tendency seems to be once more to accord to it a certain degree of pathogenicity, though the question is still in an unsettled state. In Trapne's own case the patient was a man of thirty years, a native and resident of Silesia, who had always been well until about six months previously, when he developed an obstinate diarrhea which was refractory to all treatment. The stools contained large numbers of *Anguillula intestinalis,* but no other cases of the disease had been reported in the district. Under the administration of astringents the number of parasites in the stools gradually diminished and the stools themselves became less frequent until the patient was enabled to return to work. While even in this case there is no definite proof of the pathogenicity of the parasite, the author considers that it is justifiable to regard it as the cause of the patient's intestinal disorder.

French and Italian Journals.

Colopexy.—Ch. Lenormant considers colopexy the best operation for restoring a prolapsed rectum to its normal position and function. The rectal prolapse must be reducible, otherwise resection will be necessary. The operation consists of reducing the prolapse and then fixing the intestine to the abdominal wall or side of the pelvis. In some cases the intestine is opened to allow of entire rest to the rectum, at the same time that it is fixed, and the artificial anus is afterward closed. Two of the principal factors in the descent of the intestine are the insufficiency of the perineum and abnormal depth of Douglas' cul-de-sac. To make the operation successful the adhesions created with the abdominal wall must be strong and durable. When attached to the side of the pelvis the position of the rectum is more natural and the adhesions are stronger. A long incision is made in the left iliac fossa parallel to the crural arch, the intestine is drawn up so as to reduce the prolapsus; the lower portion is brought up to the incision and fixed to the sides of the wound, including the aponeurosis of the iliac muscles. The peritoneum is opened so as to attach the intestine to the inner side of the ileum. The wound is then closed. In the female with prolapsus of the uterus hysteropexy must be done at the same time. The immediate results of the operation are excellent, it is easy to execute, and mortality is nil. There is recurrence in about twenty-five per cent. of the cases.—*Revue de Chirurgie,* February 12, 1907.

Experiments with Colloidal Mercury.—G. Astolfoni has experimented to ascertain the toxic action of colloidal mercury, its mode of elimination, and localization in various organs. The author finds that the poisonous dose is less than for the other forms of mercury. In whatever way it is administered it is eliminated by the feces and in small quantities by the urine. It is very soon found in the feces and appears for from six to eighteen days after administration. Post mortem the metal is found localized in the liver, kidneys, intestinal walls, spleen, heart, and lungs. There is little difference due to the different modes of administration. It is not found in the bones.—*La Riforma Medica,* February 16, 1907.

Catalysis of Hydrogen Dioxide in the Presence of Blood.—Eduardo Filippi opposes the belief that the action of the hydrogen dioxide on the blood of different animals may be used as a means of distinguishing the blood of different animals when found on fabrics. He has made extensive experiments with reference to the value of such tests and finds them valueless. Human blood is a little more active in decomposing hydrogen dioxide than that of the lower animals, but the differences are so slight and inconstant that no reliable information can be obtained in this way. Fresh blood is a little more active than defibrinated blood, or that taken post mortem. Fibrin preserves the decomposing power for a long time, as does serum. Hemoglobin has no such effect. Heating destroys this power in blood and all its solutions. Diluting blood with distilled water and evaporating it gives a material that has the same activity as fresh blood. If mixed with common salt before evaporation the decomposing power is lost. Any piece of cloth will decompose hydrogen dioxide as easily as blood itself, and for that reason the test with cloths is valueless. It is useless to attach any medico-legal value to these tests.—*Archivio di Farmacologia Sperimentale e Scienze Affini,* December, 1906.

Book Reviews.

THE PRACTICAL MEDICINE SERIES. Under the General Editorial Charge of GUSTAVUS P. HEAD, M.D. Volume IX. ANATOMY, PHYSIOLOGY, PATHOLOGY, DICTIONARY. Edited by W. A. EVANS, M.S., M.D., ADOLPH GEHRMANN, M.D., and WILLIAM HEALY, A.B., M.D. Series 1906. Chicago: The Yearbook Publishers, 1906.

THE chief attraction in this present volume is the section on pathology and bacteriology. This part of the book is full of most interesting and practical information as to recent advances in these fields. The general practitioner can do nothing better, if he wishes to be up to date on these themes, than read this very concise summary. Here will be found much information concerning the newest methods of examining the blood, the urine, etc., and concerning Wright's opsonic index. The sections on antitoxin and physiology and the list of new words are also valuable. Altogether this volume forms one of the most interesting of this excellent series.

PLASTER-OF-PARIS AND HOW TO USE IT. By MARTIN H. WARE, M.D., Surgeon to the Good Samaritan Dispensary, etc. Surgery Publishing Co., N. Y., 1906.

THIS is an excellent little book which contains within a limited number of pages all that is necessary to know about the use of plaster-of-Paris. There are many uses to which this medium may be put, but the references to its use are scattered throughout the literature and not available for reference. The entire subject is discussed from the making of the plaster bandage, a most important item, to the construction of every form of splint, corset, or dressing. There is also a chapter on the use of plaster in dentistry. The illustrations have been specially made in most instances and are on the whole excellent.

THE PRACTICAL MEDICINE SERIES. Under the General Editorial Management of GUSTAVUS P. HEAD, M.D. Vol. X. SKIN AND VENEREAL DISEASES. NERVOUS AND MENTAL DISEASES. Edited by W. L. BAUM, M.D., HUGH T. PATRICK, M.D., and WILLIAM HEALY, A.B., M.D. Chicago: Year Book Publishers, 1906.

IN this, the last of the series of ten volumes comprising this annual publication, the reader will find an abundance of material on the specialties indicated in the title. In the first part of the book much space is devoted to urethritis and to syphilis. In the second part, devoted to neurology, the general practitioner will find much that he could get otherwise only by consulting the special journals and monographs devoted to this line of work. Barring some misprints and some necessary inelegancies of diction which have crept in as the result of the effort to condense the matter into the space of this volume, the book is an excellent example of a short and useful summary of a year's progress in two very distinct lines of medical science.

A TEXTBOOK OF DISEASES OF WOMEN. By J. CLARENCE WEBSTER, B.A., M.D. (Edin.), F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynecology in Rush Medical College, in Affiliation with the University of Chicago; Gynecologist to the Presbyterian Hospital and Central Free Dispensary; Consulting Gynecologist to the Passavant and St. Anthony's Hospitals, Chicago. Philadelphia and London: W. B. Saunders Company, 1907.

THIS is a very large book, too large to be used with any comfort unless one has a conveniently-placed book-rest to support it. It is of large octavo size, with 712 pages of thick paper and ten plates of thicker paper. It is too bad the book could not have been divided into two volumes of convenient and portable size, for it contains so much of value that it is a pity for readers to be frightened away by the bulkiness of the tome. The publishers have also sacrificed the author's text and his illustrations by printing the book on such highly glazed paper that it can be studied, especially at night, only by those whose love for knowledge outweighs a prudent care for vision and ocular comfort. Dr. Webster's part has been done wonderfully well. It may be asked of what use is another book on gynecology, but the same doubt might be expressed regarding the utility of new books in any other branch of medicine; they are all covered and covered well; still it does no harm to get a new point of view. That is what the reader of this volume will get—at the same time that he gets a headache from the glare of its shiny pages. The author protests against the notion that the pelvis constitutes the whole of woman, and insists upon regarding woman and her diseases through a lens of wider dispersion, taking into account various physical and psychical facts independent of the local pelvic conditons. In therapeutics he is conservative, and deprecates a resort to new and untried measures when the recognized and proved methods cure the patient. Dr. Webster writes in a pleasant and readable way, and as one assured of his position and with good reasons for his beliefs. A large portion of the book is given to an introductory section on the anatomy of the female pelvic organs. Although this section is well presented and beautifully illustrated, it is not essential to a treatise on the diseases of these organs, and its omission would have very materially lightened and shortened the book.

The illustrations are numerous and beautiful—372 pictures in the text and 10 colored plates. When one looks at them one almost forgives the publishers for spoiling his pleasure in the text in order to enhance that caused by the soft halftone pictures.

A TEXTBOOK OF PATHOLOGY. By ALFRED STENGEL, M.D., Professor of Clinical Medicine, University of Pennsylvania; Physician to the Pennsylvania University, and Philadelphia Hospitals. Fifth Edition. Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1906.

IT is about eighteen months since the fourth edition of Dr. Stengel's work appeared, yet in the present edition the book has undergone quite extensive revision. The chapters on Inflammation in the Diseases due to Bacteria, and in those caused by Animal Parasites having received especial attention. The book is well adapted to the use of students, as it is of convenient size, is well, though not profusely, illustrated, and the text is amply descriptive, the author not taking a positive stand in cases in which opinions differ, preferring to state the case and the arguments in favor of the different views, and not forcing the reader to adopt any of them. In addition to the illustrations in the text, three hundred in number, some printed in colors, there are twelve chromolithographic plates. The book has proved its value as a textbook of pathology—up to date, well written, and interesting.

A MANUAL OF NORMAL HISTOLOGY AND ORGANOGRAPHY. By CHARLES HILL, Ph.D., M.D., Assistant Professor of Histology and Embryology at the Northwestern University Medical School, Chicago; formerly Professor of Zoology, University of Washington. Illustrated. Philadelphia and London: W. B. Saunders Company, 1906

THIS is a handy little volume for the elementary student or for rapid reference in the classroom or laboratory for the beginner. The author has laid especial stress and devoted much space to the teeth and oral cavity. He has, perhaps, carried this feature of the manual so far as to lay undue emphasis upon its importance, and yet the subject is no doubt one which is neglected in most textbooks. Considering the nature of the work, the text is readable and, as the author intended, intelligible even to a beginner.

TROPICAL MEDICINE. With special reference to the West Indies, Central America, Hawaii, and the Philippines. Including a General Consideration of Tropical Hygiene. By THOMAS W. JACKSON, M.D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia; Member of the American Society of Tropical Medicine; Lately Captain and Assistant Surgeon, United States Volunteers. One hundred and six illustrations. Philadelphia: P. Blakiston's Son & Co., 1907.

THIS is, so far as we know, the first publication by an American author treating of Tropical Diseases; and it deals with such diseases as are found within the boundaries of the United States and its possessions. The volume commences with an interesting introductory chapter on Tropical Hygiene. This is followed by Part I, in which are discussed the Systemic Diseases—Cholera, Beriberi, Plague, Dengue, Tropical Dysentery, Leprosy, Malarial Disease, Malta or Undulant Fever, and Yellow Fever. Part II treats of Animal Parasitic Diseases, with chapters on Ankylostomiasis, Filariasis, Trypanosomiasis, Bilharzia Disease, and Schistosomum Japonicum, Endemic Hemoptysis, Guinea Worm Disease, Liver and Intestinal Fluke Worms, Intestinal Cestodes, and Nematodes. The last fifty pages are devoted to Diseases of Undetermined or Uncertain Causation, and Skin Diseases. Under this heading will be found short chapters on Acute Febrile Icterus, Febrile Tropical Splenomegaly, Tick Fever, Epidemic Dropsy, Tropical Ulcer, Yaws, Tropical Sloughing Phagedena, Mycetoma, Climatic Bubo, Anthum, Goundou, and Skin Affections. The book contains a useful list of books and papers dealing with the subjects under discussion, and due acknowledgment is made of the author's indebtedness to the writings of previous workers in this field. The work is well written, well printed, and sufficiently illustrated; and it should prove useful to all physicians in the Southern States, Cuba, Porto Rico, and Hawaii, and the Philippine Islands.

Society Reports.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Third Annual Meeting, Held at Washington, D. C., May 6, 7, and 8, 1907.

(Special Report to the MEDICAL RECORD)

(*Continued from page 834*)

SURGICAL SECTION.

Tuesday, May 7—Second Day.

DR. W. S. HALSTEAD OF BALTIMORE IN THE CHAIR.

The Treatment of Surgical Tuberculosis by Hyperemia (Bier).—Dr. V. SCHMIEDEN of Bonn, Germany, said that he appeared in Dr. Bier's stead, in order to speak about the treatment of surgical tuberculosis by means of hyperemia and to demonstrate the technique. He said that Professor Bier's treatment of inflammatory processes was in marked contrast to that of previous teaching, in that this treatment did not combat the infection, but rather increased the normal reaction of the part. Bier increased artificially the redness, swelling, and heat, and these cardinal symptoms of infection were none other than the natural weapons of the organism. If Bier's teaching was founded upon facts, then must its practical application be brought into surgery. Since Bier's investigations they no longer suppressed the inflammation; rather they increased it. At first Bier found real difficulties only in the technique. He discovered that they must use the blood for increasing the inflammation. Therefore, he augmented the hyperemia and, at the same time, decreased the flow of blood, which was already decreased in every inflammatory process. This was the clear train of thought which gave rise to this treatment by hyperemia. Tuberculosis, especially tuberculosis of joints, was the first disease which Bier treated with his hyperemic band. To-day this band was used in many other diseases. One took a broad (6 cm.) soft rubber bandage, applying it slowly and evenly around the extremity, centralwards from the tuberculous joint, but not too close to it. Each turn overlapped the other. The bandage must not cause pain either at the place of application, or in the diseased joint. The extremity began to swell in a moderate degree and assumed a bluish-red color, it remained warm, at least as warm as the other limb, and the pulse remained entirely unchanged. They had no stoppage of the blood current, but an increase in its volume due to a diminution of its flow. This simple technique was often poorly practised. The hyperemic bandage was applied in tuberculosis only for a few hours per day. They applied it from one to four hours in the following manner. Once for an hour or once for two hours, or twice for two hours. If the skin was tender, its location was changed. During the hyperemia they removed all other bandages and over discharging fistulæ placed sterile gauze or a towel. A pressure bandage of any sort would render the hyperemic treatment impossible. Further, one should not have the joint in fixation. The tuberculous joint must be movable after the disease had healed. Bier stated that a stiff joint following healing of tuberculosis was not a good result. The treatment by hyperemia had a high purpose, the maintenance of mobility, an anatomic healing. It was possible to restore the function of a joint in which the disease had progressed so far as to cause changes in the bone and cartilage with the formation of multiple fistulæ. Properly applied hyperemic treatment resulted first in the abeyance of the pain; this was a certain proof of the proper technique. Inflammatory contractures soon disappeared, and active as well as passive movements were again possible. The old teaching, fixation of tuberculous joints, had been pushed aside by Bier. They believed that it was often not the tuberculosis which caused ankylosis, but the improper and overzealous treatment which prevented movements of the joint. It was evident that Bier had revolutionized the treatment of surgical tuberculosis. Naturally, vigorous movements of the joint should be avoided; the point was, through experience, to find the "happy medium" between rest and action. During the course of the treatment other symptoms and signs disappeared, namely, the swelling subsided and the large fungus masses were transformed into hard connective tissue, which by further hyperemia treatment were absorbed. The contour of the bones also again became distinctly visible. In fact, the mobility of the joint became better and better; also, the tuberculous fistulæ, even though they extended into the joint or bone focus, healed; this proved the healing power of the hypermia. But not always did these cases run such a favorable course; often cold abscesses occurred, and with their evacuation much necrotic tissue came away. The better the technique the less often these abscesses occurred, and when they did occur they should be recognized early. Cold abscesses, according to Bier, were processes by which the organism cast off the tissue incapable of healing. In any case, when they did occur one should not interrupt the treatment. This treatment was applicable to nearly all cases. It was to be regretted that tuberculosis of the hip joint could not be treated by hyperemia, because of technical difficulties. Hyperemia of the shoulder, however, was applicable. Especially favorable results followed in tuberculosis of the ankle, elbow, and wrist. In consequence of treatment almost entirely by hyperemia, Bier very seldom was forced to resect a tuberculous joint. Together with the hyperemia band they frequently used the cupping glasses which Dr. Schmieden demonstrated on an individual. They used them in all cases of beginning softening and of abscesses, which might or might not have fistulous openings. Every abscess occurring in the process of joint tuberculosis, as well as in the tuberculosis of the soft parts, was opened and without any fear of a mixed infection; the proper application of the cupping glasses prevented such an infection in almost every case. The two results obtained by the proper use of the glasses, namely, hyperemia and discharge from the fistula, tended to avoid a mixed infection. The result is that after evacuating the detritus and pus the discharge became serous, gradually became less and less, and finally the fistula healed. In all cases of open tuberculosis of joints they used both forms of hyperemia. In general the hyperemic band twice an hour, and the cupping glasses forty-five minutes upon the fistulæ. Dr. Schmieden hoped that his remarks would help in introducing Bier's method into America. Its goal was none other than that of healing without loss of function. Bier in his fifth edition of his book, "Hyperemie als Heilmittel," said: "Formerly I considered the hyperemia treatment good; now I consider it the best."

Dr. WILLY MEYER of New York said that he had used this method since Bier published his paper fifteen years ago. A well-known pathologist in Vienna had stated that he never had found a tuberculous lung in cases of valvular heart disease which produced a venous stasis in the lungs, and this was the starting point of Bier's studies. It was to be regretted that the hip joint could not be made subject to this treatment. Dr. Meyer emphasized the point already made by Dr. Schmieden that the patient should not have pain when the rubber band was applied. There should be a hot, and not a cold stasis. Bier's treatment should not be considered a panacea; one should not be too enthusiastic and believe that every case of joint or bone tuberculosis could be cured by this method. There should be in the hospitals a special ward set apart for the treatment of these cases. After relating the histories of two cases in which most marked results followed this method of treatment, Dr. Meyer said that the Bier treatment was a most excellent help in surgical endeavors to cure tuberculosis of bone and joint disease, and should be more extensively tried and should be known by physicians and surgeons alike.

Present Status of the Opsonic Theory and the Treatment of Tuberculosis.—Dr. Rufus I. Cole of Baltimore read this paper. He said that a specific treatment for infectious disease must first have some theoretical foundation based upon at least a little experimental evidence, and secondly, its value must finally depend upon clinical results. In order, therefore, to discuss intelligently the present status of the opsonic theory and its application, they should first inquire as to the relation of this theory to what was already known regarding immunity in tuberculosis. Upon this their present conclusion should largely rest, since the collection of clinical data required a great deal of time and labor, and the method under discussion had not yet received a sufficiently wide application to make such data of conclusive importance. In the cure of tuberculosis one might either try to put the body in such a condition that a slight balance in its favor may occur, or one might attempt the production of a very high grade of immunity to the bacillus or its products. The former was what they probably did by rest and fresh air, and possibly by the aid of tuberculin. If they could, however, certainly induce this artificially by the proper use of the bacillus or its products, they would at least have partially solved the tuberculosis problem. This was what Wright claimed to have done by the method which bore his name. The ideal condition, of course, would be the production of a fairly high degree of immunity, sufficient to quickly and unquestionably kill the bacteria and neutralize their effects. In tuberculosis this attempt had been made by the effort to produce active or passive immunization to the bacilli, or to their products. Theoretically, the bacillary emulsion offered the most suitable medium to use in order to produce the most marked grade of immunity to the various activities of the tubercle bacillus. While Koch did not so explicitly state in his paper, he must have had in mind that antitoxic immunity was produced by old tuberculin, bactericidal immunity by new. Being convinced that the opsonins did really represent immune bodies, it was next important to determine (1) whether they played any part in tuberculosis immunity; (2) was the technique for their quantitative estimation sufficiently accurate for them to detect slight grades of difference; (3) what was the clinical value of Wright's method of treatment with T. R. tuberclin; (4) what were probably the best methods for producing a high grade of opsonic immunity in tuberculosis. They might conceive that even if it should be shown that the opsonins played little part in tuberculosis immunity, the opsonic index might form an accurate and suitable guide for controlling other immunization processes. Theoretically the most suitable cases for treatment with tuberculin would seem to be those cases of localized tuberculosis in which the presence of secondary infection was unlikely or even improbable. It seemed that the future studies in opsonic immunity in tuberculosis must be along two lines: (1) Experimental, to discover whether opsonic immunity really plays any considerable rôle in tuberculosis, and (2) whether it was possible in any way to produce a high grade of opsonic immunity in this disease. As most investigators have found, and especially as the experiments of Trudeau have demonstrated, satisfactory immunity in tuberculosis had hitherto been obtained only by the use of living bacilli, and whether they were dealing with opsonic immunity or immunity of whatever kind, the successful method would probably be along this line.

Dr. Nathaniel B. Potter of New York said that the technique was extremely difficult, but that, so far as the preparation of the emulsion was concerned, they had been materially aided in New York through the kindness of Dr. Baldwin. Since they had used the little capsules prepared by Dr. Baldwin the emulsion had been invariably constant and uniform, giving excellent results. The emulsion was made with the bacilli killed by heat. He called attention to the fact that there was a variation even in the normals. It was his belief that the leucocytes were not inert.

Dr. G. B. Webb of Colorado Springs said that no mention had been made of the opsonic index as a diagnostic aid. In cases of tuberculous glands the injection of tuberculin was not necessary; if one took the index before and after massage a diagnosis could readily be made. Dr. Webb had had many instances for using the tuberculosis vaccines without the opsonic index and he could quote many cases of tuberculosis, tuberculous cystitis, tuberculosis of the kidneys, of the joints, etc., which had done well without watching the opsonic index.

Dr. John B. Briggs of Washington, D. C., said that he was rather surprised at the lack of Dr. Cole's results; he had followed Wright's method in about one hundred cases and had had surprising results. In many cases he was enabled to correct an apparent error by a careful study of the opsonic index.

Dr. E. R. Baldwin of Saranac Lake said that his experience had been chiefly with the technique and he had had but little clinical experience. He had worked with Wright for several years and he acknowledged the limitations in the technique, saying they were rather wide, and the results had to be interpreted with a good percentage of error. Wright himself did not rely upon the opsonic index. The emulsion Dr. Potter referred to was not difficult to prepare. It was simply a broth culture, washed and sterilized, rolled in a mould with porcelain balls; this muddy mass was then measured off in glass capsules, in which it was sealed. Formalin was added to insure preservation. At present it did not seem that they were justified in recommending it for diagnosis or for treatment in cases of pulmonary tuberculosis, and even Wright himself was not sanguine regarding this.

Dr. Edward L. Trudeau of Saranac Lake said that he had used none other than the clinical method for fifteen years. There seemed to be a great deal of confusion regarding this subject. In using the tuberculin the dose, the intervals between the doses, the size of the dose, all were governed purely by the opsonic index. The question was, Were they going to be guided by the opsonic index, or the tuberculin immunity? Was there any formation of antibodies in the blood? It was the consensus of opinion that, whether they used the opsonic index, or the clinical method, better results would follow the use of the tuberculin if only they knew how to use it.

Dr. Lawrason Brown of Saranac Lake also discussed the paper.

Dr. Rufus I. Cole of Baltimore closed the discussion.

The Advantages and Limitations of the X-Ray in the Treatment of Surgical Tuberculosis.—Dr. Henry K. Pancoast of Philadelphia read this paper. He said that the success of the *x*-ray treatment of tuberculosis, or any other disease, depended upon the experience, common sense, and good judgment of the Roentgenologist, and the close observation of certain cardinal principles which might be enumerated as follows: 1. A reaction of the tissues of the body to the *x*-ray was manifest in those tissues only in which the rays were absorbed. By the use of a proper tube, together with the correct manipulation of the apparatus, the degree of penetration of the greater number of the rays generated could be recognized and controlled. 2. The first effect of radiation upon normal tissues was stimulation, followed by irritation, inflammation, and finally by cellular destruction. 3. The applications should be so administered as to secure that reaction which was necessary or most efficient in obtaining the desired results in the treatment of any disease. 4. In normal tissues the destructive effect was first manifest in those cells which were most highly specialized, as the epithelium of the glands and hair follicles of the skin, and the spermatogenic cells of the testicles. 5. In diseased structures it was first manifest, usually, in those cells which were distinctly pathological, and of a lower vitality than the normal tissue cells. With the knowledge derived from authentic reports, and from personal observations made by every member of the medical

profession [illegible] be not doubting [illegible] favorable [illegible] curative [illegible] upon tuberculous lesions. In the treatment of some of them they might regard this agent almost as a specific remedy; in some manifestations its influence was much less uniformly favorable, while in some of the lesions cures were exceptional or had never been obtained. In comparing the reactions of lupus vulgaris to light and the *x*-ray Dr. Pancoast assumed that the light had far greater bactericidal properties than the *x*-ray, but the latter made up for this deficiency through the greater inflammatory reaction it induced, to the same end, and also through the possibility of a direct destruction of diseased cells. After considering all points of evidence, he thought the decision was decidedly favorable to the *x*-ray in the treatment of lupus, and that it was gradually but surely replacing the Finsen method. The following conclusions as to the treatment of this disease, lupus vulgaris, referred to the *x*-ray only: 1. It had supplanted surgical measures in the treatment of lupus vulgaris, and the latter were now of value only as adjuncts to the *x*-ray. 2. In the treatment of this disease it acted the part of a specific therapeutic agent. 3. The cosmetic results of *x*-ray treatment were, on the whole, superior to those of surgery. 4. Recurrences were less likely to follow *x*-ray treatment, but if they did they were easily controlled. 5. When ulceration was present the *x*-ray treatment might be considered considerably assisted and shortened by partial excision, curettment, or cauterization. 6. It was not always necessary to produce an ulceration of the tubercles, as they might be destroyed without. Nevertheless, a marked skin reaction was usually necessary, and a second degree dermatitis might rarely be necessary, in order to obtain an inflammatory reaction of sufficient intensity to influence the deeper nodules. 7. The undesirable results which might follow *x*-ray treatment were the so-called "*x*-ray burn," permanent telangiectasis, atrophy, and more or less permanent pigmentation. The action of the *x*-ray upon chronic tubercular ulcerations was identical with that observed in lupus. Tubercular sinuses frequently responded well to *x*-ray applications, provided the cause was also removed by the same or other treatment. According to its relation with surgical measures, they might recognize three stages of adenitis in which the *x*-ray was applicable: 1. When the glands were of relatively small size, and had scarcely reached an operable stage. 2. Cases in which the glands were of large size, and in an operable stage. Here surgery would be given the preference. Such cases could usually be improved, and might be cured by the *x*-ray, but the treatment was long, and the enlargement did not entirely disappear as a rule. 3. Cases in which caseation had occurred with or without sinus. These cases were primarily surgical, but the *x*-ray might be employed to great advantage in hastening the healing of ulcers and sinuses, etc., and in producing better cosmetic effects. Literature did not credit the *x*-ray with as much success in the treatment of tubercular laryngitis as he thought was in accordance with its possibilities. In his own experience with a dozen cases he had not failed in a single instance to observe some favorable results. A large number of cases of pulmonary tuberculosis had been reported as cured by the *x*-ray treatment, but these reports must be looked upon with considerable scepticism. Personally he believed that in some cases the *x*-ray applications were capable of some benefit, in conjunction with the usual therapeutic and hygienic measures. In advanced cases it was questionable whether any benefit whatever was to be derived from their application. Tuberculous peritonitis might be and had been favorably influenced by the *x*-ray treatment. He had never seen any favorable results from the *x*-ray treatment of bone lesions, or in tubercular joint lesions. Judging from reports, there was some likelihood of benefit being derived from the *x*-ray treatment of tuberculous orchitis.

Dr. WILLIAMS of Richmond discussed this paper.

(*To be continued.*)

AMERICAN SURGICAL ASSOCIATION.

Twenty-eighth Annual Meeting, Held in Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 839.*)

Thursday, May 9—Third Day.

End-Results Following Operations for Carcinoma of the Breast.—Dr. F. S. DENNIS of New York read this paper reporting a series of fifty cases that had been well at the end of three years, of which thirty-nine were well, though some had had a second operation; five to twenty-five years had elapsed since the operation. Four cases had died of independent causes after having been well three years or more, and seven had died of metastases. In one case there had been a return in the iliac glands after eight years. He considered a ten-year limit for the time after operation before calling the case cured as better than a three years' limit. In one case he had had a recurrence after eighteen years. In one case he had had a recurrence of carcinoma in the opposite breast after eighteen years, which was removed two years ago, and had not reappeared. Another case had sarcoma at the first operation, and fourteen years later carcinoma in the other breast. In the permanent cures most of the cases had been operated on within six months of the incipiency of the disease. He considered that the more radical the operation, within reason, the better the prognosis. He considered the minimum complete operation to include removal of skin, breast, Cooper's ligament, muscle, fat around breast, and axilla. He did not believe in prolonged operations, but he did not think that complete operations should be withheld from any patient.

Prof. E. KUSTER of Marburg, Germany, opened the discussion on the series of papers. He spoke of the anatomy of the breast region and the spread of the disease by the lymphatics, the pathological classification of the tumors as modifying the end results.

Dr. J. E. MOORE of Minneapolis said that surgeons sometimes censure themselves unjustly for the recurrences at the periphery after complete operations. He cited one case where, after complete operation, there had been a recurrence at the end of two years in the periphery in spite of wide skin removal and covering up of the defect by plastic skin flaps. These recurrences were removed, and seven months later there were again recurrences on the new flaps in skin that at the time of the first operation had been over the abdomen and back, and that later lay over just the same spots as the first recurrences. He believed that there had been a deep focus beneath the superficial tissues which had infected both skin flaps, and that it would have been impossible to remove the deep foci at the primary operation, so that the surgeon was not in need of censure.

Dr. J. B. ROBERTS of Philadelphia thought the operations were too limited, and that more cases needed the sacrifice of the arm in order to get outside of the diseased tissue.

Dr. C. B. G. DE NANCREDE of Ann Arbor wished to warn against too implicit belief in the microscopical diagnosis. In one case he had made a clinical diagnosis of sarcoma, and the pathologist had reported carcinoma. A revision of the pathologist's diagnosis had brought out the fact that there were areas in the mass, some of which were typical sarcoma and others typical carcinoma. He would explain Dr. Dennis' case of recurrence of carcinoma after primary sarcoma as a probable primary mixed sarcoma and carcinoma. He would have more extensive examinations of the tumors made by the pathologists.

Dr. A. H. FERGUSON of Chicago said that he did not see how amputation of the arm would save recurrence from glands in the neck. He had only one case in which he had removed the arm on account of involvement of the axillary artery with extensive edema in a case of recurrence after one and a half years. No glands in the neck were found.

The patient had suddenly died on the tenth day after operation, so that no final result could be determined. All of his neck cases had died within two years. He had removed portions of ribs, lung, and sternum in his efforts to get beyond the seat of disease, but all had died. He had had three cases of cancer of the breast in the male, one of whom was alive at the end of fourteen years. In the extensive operations he believed that the patients would live longer and do better with less radical operations.

Dr. T. W. Huntington of San Francisco spoke of the very extensive operations done by Dr. Rixford of his city, who had done several very severe operations on pleura and lung with improvement in the duration of the patient's life. He had done one case himself of interscapulothoracic amputation, and the patient was alive and well nine months after.

Dr. W. B. Coley of New York had had three cases of combined sarcoma and carcinoma. He cited the work of Ehrlich, who from a simple cancer tumor in mice had later produced mixed sarcoma and carcinoma, and still later pure sarcoma, all from injection of the same strain of mouse tumor, but growing under different unappreciated conditions. He did not regard the amputation of the arm as desirable on account of the bad effect it would have in detering other patients with cancer from operation, especially if the arm amputation cases did not recover completely, as they probably would not.

Dr. W. L. Rodman of Philadelphia said that he did not consider the three-year limit of nonrecurrence sufficient, as 15 per cent. had later recurrences. To show that the late recurrences are true recurrences, he deemed it essential to show a coincidence in the nature of the growth, and in absence of this would call them new infections in a person with a predisposition to cancer. In the prognosis the type of the growth seemed very important. He was surprised that Halsted got better results in medullary than in scirrhus growths. He believed that a most essential point in the technique was the extensive removal of the skin. Only in that way could he explain the good results of Gross' operations. Gross had been noted for his dinner-plate incision that had jestingly been called a cartwheel incision.

Dr. S. H. Weeks of Portland, Maine, said he felt he had done a complete operation when he had removed all the diseased tissue. He removed the axillary glands only when he could feel them through a special incision for that purpose. He felt that the fat and the glands had a function to serve and that they ought not to be removed unnecessarily. He thought his position was backed up by the good statistics of the incomplete operation done by Dr. Warren.

Dr. E. Eliot, Jr., of New York reported two cases of late recurrence. In the first a scirrhus nodule had appeared in the old scar after four years. This had been removed, and there had been no sign of recurrence in the two years since. This case he considered a scirrhus degeneration of an old scar and not a recurrence. The pathological diagnosis of the primary tumor was not recorded. The second case was one where there had been a recurrence of a nodule two inches above the old scar seven years after the primary operation. Here the epitheliomatous tissue had a primary focus in the subcutaneous fat, and as there was no normal epithelial tissue in the fat he considered this a true recurrence. In another case five years after the primary operation there had been a reappearance of swelling in the arm without any external evidence of a tumor. At first the condition had been considered a mediastinal recurrence, but though there had been no operation the swelling had disappeared, and had not appeared again in two years, so that it could not well have been a recurrence. In another case there was some persistent obscure lung trouble after the operation, which had first been called a recurrence, but this cleared up on antirheumatic treatment. He did not think that all apparent recurrences were truly such. Unless there is some definite additional risk he saw no reason for not removing the axillary glands in all cases.

Dr. J. C. Bloodgood of Baltimore thought that the most important factor in determining the final outcome was the character of the tumor. In sixteen cases of adenocarcinoma all the subjects were well three years later, but one had died at the end of five years, and one died fifteen years later. In five cases in which the breast only had been removed, four had died and one was cured. Metastases in the axilla were the most common. Of the scirrhus cases none had been cured. Of the mixed scirrhus and medullary a few had been cured. The only cases where recurrences had appeared, and where there had been a cure, were in the cases of adenocarcinoma. The recurrences had occurred in cases where only a small area of skin had been removed so that the wound could be closed by suture.

Dr. B. F. Curtis of New York said that he believed that cells in distant locations existed which had not grown, and which had even retrogressed, and that these explained the very late recurrences.

Dr. W. H. Carmalt of New Haven said that he believed that there were both sarcoma and carcinoma elements in most growths. He reported a case where, after the removal of a myoma (so reported) of the uterus, there had been a recurrence of a sarcoma of the brain, and he associated the two growths.

Dr. N. B. Carson of St. Louis said that while the surgeons recognized the late recurrences of cancers, yet the laity held to three years as the limit of recurrence. That the three years of suspense for the patient was long enough, and that he did not think it wise to lengthen that period of suspense for them.

Dr. S. J. Mixter of Boston said that he believed in a thorough radical operation and that no mutilation was as bad as the horror of having the disease return.

Subcutaneous Rupture of the Spleen.—Dr. Ellsworth Eliot, Jr., of New York read this paper, reporting two cases. The first was a man twenty-six years of age, who fell five stories, fracturing the ninth rib and rupturing the spleen. He was operated on nine hours later, a splenectomy being done. The second case was a woman thirty-four years of age, who fell nine feet. Splenectomy was done there at the end of six hours. Both cases had serous effusions into the left pleural cavity a few weeks after the accident. Among the symptoms Dr. Eliot placed great stress upon the rigidity of the wall of the thorax on the left side at its lower margin, and over the upper portion of the abdomen on the left side, also on the increasing area of dullness in splenic region, as determined by auscultatory percussion. The costal resistance was of great importance to differentiate between rupture of the spleen and fracture of the ribs, as in fracture of the ribs the eleventh and twelfth ribs, being very rarely fractured, would not be rigid, while in splenic injury they would. In the operative treatment pressure of the spleen against the diaphragm by tampon is not permanent, cautery or suture of the wound is rarely adequate, and splenectomy is the best treatment. The choice of incision is one parallel to the left rectus with a second limb along the lower costal margin, and resection of the ribs if necessary. After removal of the spleen clamps are left *in situ* on the pedicle to act as drainage, not only for the splenic portion of the trouble, but also for any possible pancreatic injury that might have occurred at the same time. The objection to the removal of the spleen, that at times it was followed by persistent anemia, was well grounded, but the operation was followed by hypertrophy of the lymph nodes, thyroid, and long bone marrow, which compensated for the loss of the spleen. In animals after splenectomy there was an increased resistance to infection, and there had been reported one case of typhoid in a man after splenectomy, in which the disease ran a mild course. In Dr. Eliot's second case, about a year after the splenectomy, the patient had developed cholecystitis, becoming drowsy and comatose for sixty hours, with an imperceptible pulse, but she had recovered. She had again had pus in

the pleural cavity, which had been removed, with subsequent recovery.

Some Cases of Rupture of the Kidney, with Remarks on Conservative Treatment.—Dr. T. R. Nielson of Philadelphia reported four cases treated by packing and drainage. The first two had a primary laparotomy done, and then, after closure of that incision, lumbar exposure with packing and drainage. The other two cases had the lumbar incision only. Three of the cases recovered, and one died of an incidental complication. All cases of rupture of the kidney were not suited for this method of treatment, but didactic classification was difficult. Where there were only local symptoms, and the diagnosis was made on slight hematuria, expectant treatment was in order; otherwise operative treatment was necessary. The lumbar incision could be used only in the cases where there were no abdominal symptoms. If the organ had been pulpified, or the pedicle torn, nephrectomy must be done. If there were multiple injuries, but still enough sound kidney tissue, to make a possible functionating organ, conservative treatment should be tried. Dr. Nielson placed loops of gauze under the poles of the kidney to support and drain it. In some cases mattress suture of the injuries might be desirable. In some cases, after conservative treatment, a urinary fistula might necessitate nephrectomy.

Primary Sarcoma of the Prostate.—Dr. C. A. Powers of Denver reported a case of enlargement of the prostate in a man sixty years of age, who had had rapidly increasing difficulty in urination for two months. He had no residual urine. The rectal examination showed a large rounded prostate ballooning into the rectum. The mass was uniform in consistency and very large. The urine examination was negative. The perineal operation was accompanied with alarming hemorrhage, the growth being very friable. The upper part of the growth was adherent and could not be removed. The patient died on the fifth day of pneumonia. The pathological diagnosis was small round-celled sarcoma. The writer had collected nineteen additional cases from literature, making twenty, in all of which 12 were in patients under 15 years, four 15 to 30, three 30 to 60, and one over 60. All died either from the operation or from recurrence.

Prostatectomy.—Dr. Archibald MacLaren of St. Paul read this paper, saying that both suprapubic and perineal methods were well established, that he had previously done a combined operation, but that recently he had been doing the perineal operation by a single median incision, the advantage being that it gave better drainage than the suprapubic, and did not give the wide exposure of tissues which Dr. Young of Baltimore advocates. The time necessary for the wide dissection was not compensated for by the slight advantage in the field seen, as most of the work was done by feel. And, again, the saving of the ejaculatory ducts in the old men scarcely compensated for the danger of opening the rectum. He did prefer Young's operation for cancer of the prostate.

Dr. C. L. Gibson of New York said that he could add another case of sarcoma of the prostate to those reported by Dr. Powers; that he had operated on a case that was already septic, and that had died of sepsis three weeks after the operation. In connection with Dr. MacLaren's paper on prostatectomy, he said that he had formerly done a very extensive dissection similar to Young's, but that now he made a median incision in the perineum and quickly shelled out the prostate, seldom taking as long as ten minutes; that he had not had a death in several years; that the average age of his patients had been seventy-two years, and that they were up and out of bed inside of a week.

Dr. J. C. Munro of Boston said that he had had a case of sarcoma of the prostate which had been operated on, but died of recurrence.

Further Consideration of the Surgical Treatment of Cancer of the Head and Neck.—Dr. G. W. Crile of Cleveland read this paper. He said that he put the patient in the head-up position to save hemorrhage and shock, packed and intubated the pharynx to eliminate post-operative pneumonia, and to get the anesthetizer away from the field of operation. He considered that hemorrhage was not only an immediate danger, but that it decreased the resistance of the patient to the cancer. Therefore, he lost the least blood possible, and gave early transfusion. He left the wound open for *x*-ray treatment, which is promptly carried to the point of erythema to get the superficial effect of the *x*-rays, and he felt that these cases had done better than those not treated with the *x*-rays. In regard to the tissues sacrificed, while he did not permanently close either the common or internal carotid arteries (as he feared embolism and had never seen recurrence of the cancer in the sheath of the artery), yet he had not hesitated to excise both jugular veins. Of the muscles, he had removed one or both sternomastoids, omohyoids, sternothyroids, and sternohyoids, and the platysmas, all of which were compensated for by the action of the deeper muscles of the neck. The scar was not complained of if the patient was cured of his disease. Of the nerves, resection of one vagus, one phrenic, or one hypoglossal he had done, but section of any pair was fatal. He had done 150 operations on 139 patients, in which the primary foci had been in various portions of the head and neck. Prior to 1900, when he began this radical work, there had been only 15 per cent. of the cases that had lived more than three years after the operation. Since 1900, 31 cases, 39 per cent., had passed the three-year limit. The operative mortality had been steadily declining. He had lost none of the last 40 cases. He thought the operative results were as hopeful as for cancer of the breast.

Dr. S. J. Mixter of Boston, in discussing the paper, said that he, too, considered the *x*-ray applications to the open wound a very valuable aid.

Dr. J. C. Bloodgood of Baltimore said that he agreed with Dr. Crile in excision of the veins and temporary ligation of the arteries.

Dr. A. Vander Veer of Albany said that he did not object to tying the common carotid artery, and thought that at times it was necessary.

Acquired Diverticulitis of the Colon and Its Surgical Treatment.—Dr. W. J. Mayo of Rochester, Minn., presented this paper in collaboration with Drs. L. B. Wilson and H. Z. Griffin. Dr. Mayo presented five cases, all with the gross appearance of cancer of the colon, occurring in patients forty-five years of age or over, three of them males and two females. In some cases the trouble seemed to start with a sudden attack, like acute peritonitis, and a mass was found in the region of the splenic flexure or sigmoid. In other cases the principal symptoms were those of intestinal obstruction. There were still other cases which had not come to operation in which the symptoms had been mild, but of either type. The treatment in the abscess cases was incision and drainage of the abscess; of the obstruction cases, by resection of the colon. The pathological picture was one of multiple minute diverticuli of the colon, in which the mucous membrane had pouched through the muscular coat, usually at some distance from the teniæ. In one case there was a true diverticulum with a muscular coat outside of the mucous coat of the diverticulum. The other four cases had all been false diverticuli in having only the mucous coat. Many of the diverticuli contained fecal concretions, and these were surrounded by inflammatory tissue forming a dense mass that had passed the pathologist on gross inspection for cancer. In the cases where the diverticuli had allowed their contents to leak out there had been abscess formation. There had been little tendency towards perforation and more to inflammatory infiltration. The single case of true diverticulum had been properly called a diverticulitis, but the other cases had been peridiverticulitis.

The Diverticulum Ilei as a Cause of Complete Intestinal Obstruction.—Dr. F. H. Gerrish of Portland,

Maine, presented this paper, giving the history of a case of intestinal obstruction of four days' duration, in which a diverticulum arising 15 centimeters from the ileocecal valve in the ileum had passed through a rent in the mesentery, become adherent, and caused the obstruction. He did not think the diagnosis possible before opening the abdomen. He considered the diverticulum ilei as one of the gravest dangers, and urged that whenever found, accidentally or otherwise, it be removed.

A Consideration of the Etiology of Certain Cases of Left-Sided Intraabdominal Suppuration.—Dr. G. E. Brewer of New York presented this paper, reporting six cases of abscess in the lower left quadrant of the abdomen closely resembling appendicitis abscesses, even to the finding of fecal concretions in the pus or adhesions, but where the appendix was normal. In four of the cases no exact cause for the abscess had been found, but in two diverticuli of the colon had been found, and as the six cases were all so similar it seemed probable that the other four were also due to diverticuli from the colon. He had found records of eight cases of diverticuli of the colon, one in the ascending portion, two in the transverse portion, three in the descending portion, and two in the sigmoid. In one of the cases 79 pouches had been counted. These pouches were due to pressure from the feces in constipation.

Dr. S. J. Mixter of Boston saw one case of acute inflammation of the sigmoid which was opened before rupture. He had later seen two chronic cases which he considered more common that had been diagnosed cancer and had been cured by cancer quacks.

Dr. E. Eliot, Jr., of New York called attention to the cases of left-sided intraabdominal suppuration that were due to appendicitis, in which the appendix extended across the middle line, and in one of his cases was adherent to the sigmoid.

Dr. Reginald H. Fitz of Boston called attention to the fact that there were in the Warren Museum in Boston several specimens of multiple diverticuli of the colon. He thought that in the cases where patients passed fecal concretions that resembled rabbit dung this condition might be present. Dr. Fitz thought that this was a new disease and that more cases would appear. In connection with Dr. Gerrish's case of diverticulum ilei, Dr. Fitz said that the persistence of the vitelline duct causing a diverticulum was not rare; that most of the cases were harmless, though this diverticulum might be the seat of a typhoid patch or a tuberculous ulcer; that the adhesion of the tip of the diverticulum was the remains of the omphalomesenteric duct, which remained visible in all puppies until three or four days old.

Dr. W. L. Estes of South Bethlehem said that he had understood that the diverticuli of the colon occurred most frequently in adipose people with myocarditis, in whom the blood pressure was low, and that the diverticuli were at points where the blood-vessels, piercing the denser layers of the colon, left weak spots not filled by the vessels when the pressure was so low; that most of the cases occurred at the splenic flexure.

Dr. G. T. Vaughan of Washington, D. C., said that he remembered several cases where he had cut off coproliths with no bad effect, so that if they were in diverticuli from the colon the lumen of these had become obliterated.

Dr. H. Cushing of Baltimore said that he had seen some experiments on animals where as much as 80 per cent. of the intestine had been resected with a marked dilatation of the bowel. In these cases diverticuli often occurred, but there had been no diverticuli in the mesenteric border where the blood vessels entered.

Dr. C. B. de Nancrede said that he had had two cases of extraperitoneal abscess in obese men on the left side, that there had been no bowel communication, but that both cases had had their origin from the sigmoid.

Dr. Mayo, in closing, said that he believed that many of the cases where resection of the colon had been done with the diagnosis of cancer but where the patient had had no recurrence, were cases of diverticulitis and he would have the old specimens examined anew. He said that there had been no known myocarditis in his cases and that the diverticuli might occur anywhere on the lumen of the colon not only at the mesentery.

Dr. L. B. Wilson said that in 1904 Bier had reported eighteen cases of diverticulitis, in one case diverticulitis and cancer, but that such a combination had not been found at the Mayo clinic.

Dr. Gerrish said that his case was peculiar in that the diverticulum passed down on one side of the mesentery through an aperature in it and then out on the other side to become adherent to the abdominal wall. He did not think that the adhesion in his case could have been an omphalomesenteric duct.

Dr. Brewer said that if cancer occurred in association with diverticulitis it might well be caused by the irritation of the chronic inflammation.

Some Recent Modifications of the Gasserian Ganglion Operation for Neuralgia, with a Report of Fifty Cases of Operation Upon the Ganglion.—Dr. Harvey Cushing of Baltimore presented two cases, one of spasmodic tic, the other of tic douloureux. In the first case he had resected the facial nerve and then done an immediate anastomosis with the spinal accessory. The patient had recovered emotional control of the face within six months, though she had a slight droop of the shoulder and a movement of the face with the movements of the shoulder. These two symptoms were not as bad as the thickness of speech following anastomosis of the facial with the hypoglossal nerve. In the case of the tic douloureux the patient was an early case, having had the pain only six months. In the operation he had done the patient lost very little blood and got out of the hospital in six days. He had a mortality of about 2 per cent. He does not destroy the ganglion, but pulls out the sensory fibers at the meninges. It is followed by no loss of motion or atrophy of the muscles.

Dr. S. J. Mixter of Boston considered the operation always a serious one. In the twenty cases that he had done he had used a modified Abbe operation because the results had been very satisfactory, there having been no recurrence after three or four years. He injected osmic acid into the nerves after dividing the second and third divisions and then plugged the foramina and fossa with amalgam. He had had one death.

Dr. M. A. Starr of New York congratulated Dr. Cushing on the excellent results in the case of spasmodic tic. He had never seen as good results from the anastomosis of the seventh to the twelfth nerve. The neurologists believed that the lesion in the case of tic douloureux lay in the ganglion and that therefore it was futile to divide the peripheral branches of the nerves. That Dr. Cushing's evulsion of the nerve fibers from the ganglion was satisfactory.

Dr. S. H. Weeks of Portland, Me., said that he lifted the ganglion out of its fossa and cut it off, leaving the ophthalmic division and a part of the ganglion intact.

Dr. Cushing, in closing, said that he, too, believed that the ganglion was the seat of war, and that the brain-ganglion link should be severed. That if any of the branches were left, recurrence in that branch would follow.

Early Operations Upon the Nerves in Ischemic Paralysis.—Dr. Leonard Freeman read this paper. Of the pathology he said that if the blood supply to the muscles was cut off they would die in three hours and assume a post-mortem rigidity, and then the fingers contract so that they would dig into the palm of the hand. Later sensory and trophic disturbances would set in, the nerves themselves showing the lesions. Massage and electricity helped the hands to recover, but the massage had to be vigorous and persistent. That the muscle rigidity injured the nerves and the diseased nerves interfered with the use of the

muscles. That the indication was to operate on the nerve and relieve its trunk from pressure. That the median nerve was compressed most frequently in the pronator radii teres, the radial in the supinator brevis, and the ulnar in the flexor carpi ulnaris. The nerves should be exposed above the point of compression and followed down, and then when exposed buried, if necessary, in the subcutaneous fat. In one case where trophic changes had begun in the hand, making it useless, after operation the tingling of the fingers appeared in about three months and in three years the patient had good use of the hand. In two other cases of late operation, in one he had had a relief of the pain and in the other an improvement of sensation.

Dr. W. J. Mayo of Rochester, Minn., said that the cases were due to either bad splint application or to later swelling of tissues causing the compression. That only a few cases had been reported in the leg. That previously the treatment had been orthopedic shortening of the bone to relieve the muscle pressure, but that this nerve operation was a great advance.

Dr. B. F. Curtis of New York said that he had seen one case due to hemorrhage under the splint. That the bone removal was very helpful but did not relieve the pain or the trophic change.

Dr. H. L. Burrell of Boston said that he had seen a number of cases of ischemic paralysis in children where the results were not satisfactory, and he asked how early operation would be desirable.

Dr. Freeman, in closing, said that if a few weeks did not improve the nerve symptoms, no matter what happened to the muscles, operation would be desirable.

Officers were elected as follows: *President*, W. H. Carmalt of New Haven; *First Vice-President*, W. G. Macdonald of Albany; *Second Vice-President*, J. F. Binney of Kansas City; *Member of the Executive Council*, D. P. Allen of Cleveland.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Two Hundred and Ninth Regular Meeting, Held April 5, 1907.

The President, Dr. Robert Abbe, in the Chair.

Medical Inspection in the Public Schools.— Dr. Hermann M. Biggs, in this paper, said it seemed rather remarkable, in view of the great importance of the subject, that no systematic medical supervision of the children in the public schools in the large cities of this country or Europe was attempted until very recent years, and that even at the present time such supervision was limited to a few cities, and for the most part to a search for cases of infectious disease. To the speaker's knowledge, there had been no effort made in a large way to have a general physical examination of the children in the public schools of any large city elsewhere than in New York. The first attempt at medical supervision in a limited way of school children appeared to have been in 1893, in Boston, during the prevalence of a severe epidemic of scarlet fever. Subsequent to this, a number of physicians were appointed whose duties were confined to the visiting of various schools upon the request of the principals or teachers. This was the first attempt at medical inspection of schools made in the United States. In 1894 and 1895, in New York City, in the study of the prevalence and extension of diphtheria and its spread in the public schools, and in the effort to formulate a basis on which bacteriological diagnosis could be made, it was found that in many instances there were distinct school outbreaks, which were largely confined to certain classes in certain public schools. In 1896 the Board of Health determined to make more extensive investigations to ascertain to what extent the schools served in the spread of contagious diseases. There had existed a long time previously a belief that the public schools played a very important part in the dissemination of contagious diseases, for each year the morbidity curves with relation to measles, diphtheria, whooping cough, etc., commenced rising soon after the opening of the schools in the autumn, and continued to rise, as a rule, until March or April, when they attained their maximum, and then, with the beginning of warm weather, they fell until after the closing of the schools, when a comparatively rapid decline followed. In the preliminary investigations undertaken by the Department of Health, a diagnostician was assigned to visit schools which children reported as ill with contagious disease had attended. A list of the absentees from the class attended by the sick child was obtained, and these children were visited at their homes. Further investigations showed that in most of the public schools, lead and slate pencils, pen holders, etc., were used in common by the children in a certain classroom. These were collected at night and distributed again in the morning, indiscriminately, and bacteriological investigation indicated the presence of virulent diphtheria bacilli on these writing utensils when they had been placed in the mouths of children sick or convalescent from diphtheria during periods of from five to eighteen days. These, with numerous other findings, were incorporated in a special report and forwarded to the Board of Estimate and Apportionment by the Board of Health, with the request for an appropriation to provide for a systematic inspection of the public schools for the exclusion of cases of infectious disease. This appropriation was granted, and in March, 1897, the system was inaugurated in the Boroughs of Manhattan and the Bronx, constituting the old city of New York. One hundred and fifty inspectors were appointed, at the rate of $30 per month, whose duties consisted in visiting certain schools each morning and examining all children set aside by the teachers as suspected of having some infectious disease. The inspectors also examined every child who had been excluded from school, or who was absent from school for illness, before its re-admission to the school. Essentially, this system obtained until 1902, when it was modified by reducing the number of inspectors to 50 and requiring their services for a longer time daily, at the same time increasing the compensation to $100 per month. Under the new plan, to each inspector was assigned a group of schools, the census of which was approximately 5,000 children. The inspectors were required to visit each of the schools under their supervision each morning before 10 o'clock. Dr. Biggs then described in detail the duties of these inspectors, and stated that with the extension of the work it soon became evident that the presence of trained nurses in the public schools would be of great value, especially as in some of the schools a very large percentage of the children were affected either with trachoma, acute conjunctivitis, pediculosis, or some contagious disease of the skin, and the treatment which they received at home or from dispensaries was often unsatisfactory and inefficient, and their exclusion from school decimated some of the classes and aroused a violent protest from the school authorities. Therefore, on December 1, 1902, eight nurses were appointed, at a salary of $75 per month, and their work proved so satisfactory that this number was soon increased, and additions had been made from time to time until now there were over 60 trained nurses working in the public schools throughout the city.

Dr. John W. Brannan said he had known something of the medical inspection of the schools, but had no idea of its magnitude and importance. He had been familiar with Dr. Biggs' campaign against tuberculosis during the past fifteen years, and he was inclined to believe that the work described this evening would prove even more valuable in its far-reaching results. What Dr. Biggs had said of trachoma carried the speaker back to the time when the spread of this disease was first called to the attention of the profession. Many physicians thought that its prevalence was perhaps exaggerated, and for a time he himself shared this opinion, but when he visited the clinic of the New York Eye and Ear Infirmary and saw the children crowding

about Dr. Derby in their desire to be operated on, he changed his views, and subsequently, when the clinic was opened at Gouverneur Hospital, he saw the same rush of patients to get within reach of the surgeons. He had been rather surprised to hear this evening that the disease was still so prevalent, in spite of the energetic work of the Health Department during the past four years, and he suggested the possibility that fresh cases were slipping into the city through Ellis Island. He had been told by surgeons stationed at the island that occasionally affected immigrants, instead of being excluded, as the law required, were admitted to the Government hospital, and after treatment were permitted to land. Mild cases of the disease might also be undetected by the surgeons, whose examination was necessarily hasty when thousands of immigrants arrived in one day.

Dr. Charles L. Dana said he thought the importance of the work of the Board of Health in connection with the medical inspection in the public schools could not be overestimated. He was particularly interested in that phase of the subject that related to the effect of physical defects upon the mentality of the children. More exaggerated examples of this type came under observation at the clinics and hospitals, and it would be extremely interesting to study the ordinary school cases more specifically, in order to learn exactly what was meant by the term defective mentality: whether it implied defective memory or some moral defect, or perhaps some peculiar forms of defect in language capacity, which in some children seemed to be very marked. There was, for example, an apparent congenital defect in the capacity to learn to read, or to understand syntax or remember words, so that their vocabulary was extremely small. Some of these cases could be much improved by specialized forms of teaching. The more common defects observed in the backward children in nerve clinics were those relating to the eyes, obstructions to breathing due to adenoids or enlarged tonsils, and defects to nutrition, resulting in a poorly nourished general system as well as brain. The latter type was not uncommon among the children of the better class, and was sometimes associated with a form of youthful neurasthenia.

Dr. William M. Polk said the information contained in Dr. Biggs' paper was interesting not only from the standpoint of the neurologist, but from every possible standpoint, and especially that of good citizenship. The entire subject was intermixed with one that was at present receiving the attention of the American Medical Association, namely, the enactment of legislation for the prevention of ophthalmia neonatorum. The plan would come up at the meeting in Atlantic City.

Dr. George L. Peabody said the work undertaken by the Board of Health was of such immense humanitarian importance that it should be aided in every possible way. No matter what the cost of the work might be, it would in time save much more to us in making useful citizens of children many of whom might otherwise have grown up to be not only useless, but criminals. Dr. Peabody said that in his official connection with a large institution for the blind he had become impressed with the fact that the number of children affected with blindness, especially in this vicinity, was steadily diminishing. This could probably be traced to the more rigid rules that now prevailed regarding cleanliness and to our knowledge regarding the prevention of eye diseases in the new-born. The speaker said he did not believe that the prevalence of trachoma in New York City to-day was due to fresh sources of infection in immigrants. The steamship companies were very careful to exclude these patients, as a fine of $100 was attached to each one they brought over, and, furthermore, they were compelled to take them back again.

Dr. L. Bolton Bangs asked if this work among the school children produced any educational reaction among the parents? Did the latter learn anything from it? The questions involved were not only hygienic and sanitary, but sociological, which would have its influence upon the immediate generation and succeeding ones, and in the course of time this system of school inspection would effect a marked diminution in the number of defective children.

Dr. Biggs said that while the medical inspection of the public schools had been in force long enough to draw any conclusions regarding its influence upon the parents of the children, it undoubtedly did exert some such influence. For example, in certain parts of the city entire families were affected with pediculosis; the children in those families were sent home on account of it; they came to regard this as more or less of a stigma upon them, and they, in their turn, converted their parents to regard it in the same light.

Dr. Joseph D. Bryant said that while he had been more or less familiar with the general trend of this branch of work of the Health Department, he had never before so fully appreciated the beneficent influences arising from it. It had impressed him more than ever before with the importance of having a sound body in order to have a sound mind. He thought no one would question the wisdom of the very earliest possible detection of these physical defects in children. Those of the spine were important, which later became absolutely irremediable, so far as complete recovery was concerned. In that connection he more especially had in mind incipient Pott's disease. In regard to the proper care of the eyes, particularly in the prevention of ophthalmia neonatorum, Dr. Bryant said he recently saw a statement to the effect that 25 per cent. of blindness was dependent upon preventable disease. He commended the work earnestly, and hoped that it would be continued, saying that the resulting increase in careful, self-suffering people would lessen the census of public institutions of charity and of punishment and add correspondingly to good citizenship.

Dr. Charles Stedman Bull said the medical inspection in the public schools, as outlined by Dr. Biggs, was without doubt the most colossal work that had ever been undertaken by any municipality, and no matter what the cost might be, the results would more than repay the money spent. In referring to trachoma and its prevalence at the present time in spite of the thousands of cases that had been treated during the past three or four years in this city, Dr. Bull said there was a large percentage of these cases that were inoperable; they were the cases in which there were no distinct granulations that could be taken hold of by any method of operation, and while they could be quickly cauterized, prolonged treatment was usually necessary, while, on the contrary, those cases that presented distinct trachoma nodules could be operated on at once and almost immediately cured, and they ceased to be contagious then and there. Dr. Bull said that another far-reaching effect of a proper system of medical inspection of the public school children in its relation to the eye was in the detection of errors of refraction or muscular anomalies which were susceptible of correction by glasses. In that connection, he did not have in mind the indirect influence of the corrected eyesight upon the child's mentality, which in itself was an important factor, but its even more far-reaching influence as a prophylactic measure in the later prevention of such destructive conditions as retinitis, cataract, and choroiditis. The speaker said that during the past fifteen years there had been a steady decrease in the number of cases of cataract dependent on nutritional defects of the lens, and he attributed that fact to the more general use of proper glasses for the correction of anomalies of refraction. It was doubtless true that cases of blindness in children were somewhat rapidly diminishing, which was probably traceable to the fact that the diseases which caused it were earlier recognized and treated.

Dr. Biggs, in reply to the question of whether other municipal bodies had taken up this work, said that something had been done along these lines in Boston, especially in reference to the contagious diseases and the eyes. It was also taken up in Philadelphia, but subsequently abandoned. In Berlin and other Continental cities the eyes of children

had received considerable attention, but, so far as he knew, there was no general physical examination. In England, the supervision of the school boards was largely limited to the infectious diseases and the eyes. The work in New York was more general and systematic than anywhere else.

The President, Dr. ABBE, said that as physicians we should not lose sight of the tremendous degenerative force that the defective element exerted on the community in general, and the corresponding benefit that would accrue from the correction of those deformities. One of the most striking features of Dr. Biggs' report was the rapid improvement made by some of these backward children after their defects had been corrected.

Dr. Biggs closed the discussion and, in referring to a riot that had taken place in one of the schools on the lower East side, said the cause of the excitement was that many of the children in that section of the city, on account of their race, preferred to go to a certain hospital to have their tonsils removed. The hospital was located at such a distance that a staff of physicians was sent from the hospital to one of the schools on a certain day with consent of the Board of Education, and in the course of a few hours 85 pupils of that school were operated on and sent home. This so alarmed the parents of the other children in the school that the report spread that the Board of Health doctors were cutting the children's throats, and a small riot ensued. As a matter of fact, the Department of Health staff had nothing to do with the operations.

A Comment on the X-Ray Applied to Prostatic Enlargement.—Reported by Dr. L. BOLTON BANGS. (See page 902.)

A Typhoid Fever Carrier.—Dr. BIGGS said that on March 12, 1907, the Health Department received a communication to the effect that outbreaks of typhoid fever had occurred in four families in this vicinity during the past four and a half years, and that in each instance the outbreak had occurred shortly after the employment of a certain woman as cook. An investigation was instituted which disclosed that in addition to these four families, typhoid fever had occurred in several other families where she had been employed in the same capacity. It was further learned that this woman was an excellent cook, and on that account had no difficulty in finding employment; she changed her position at frequent intervals, and would only work when she was compelled by necessity to do so. At one place where she had been employed she left the kitchen in such a filthy condition that it required the services of a scavenger to cleanse it. In several of her former places of employment, three to seven cases of typhoid fever had occurred, and in her last place there had been two cases, one of which proved fatal. The cook was a perfect Amazon, weighing over 200 pounds, and when an investigator tried to interview her he was ejected with very slight ceremony. A health inspector and officer were then sent to the house, but they failed to see her, and the same thing occurred to a female health inspector who had been advised to use tactful methods. It was then considered justifiable to employ force, and five police officers from the Sanitary Squad finally succeeded in taking the woman to the Reception Hospital, of which she is now an inmate. An examination of her urine gave negative results, but the feces were found to be loaded with typhoid bacilli. At one time nearly 90 per cent. of the organisms were typhoid bacilli. The woman gave no definite history of typhoid fever, at least not for the past five years. [See also MEDICAL RECORD, May 18, 1907, page 818.]

Local Applications in Inoperable Breast Cancer.—Any lotion or ointment containing morphine is suitable, but I know few more soothing applications to an incurable breast cancer than the old-fashioned conium poultice. This may be made from the fresh leaves, or one-half ounce of the succus conii may be added to an ordinary breast poultice.—MARMADUKE SHIELD.

Medical Items.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 24, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	Apr. 27–May 11	5	..
Florida, Hillsboro County—Tampa	May 4–11	2	..
Georgia, Augusta	May 7–14	2	..
Illinois, Danville	May 7–14	3	..
Indiana, Indianapolis	May 5–12	9	..
La Fayette	May 6–13	3	..
Kansas, Kansas City	May 4–11	1	..
Topeka	May 4–11	2	..
Kentucky, Louisville	May 9–16	3	..
Louisiana, New Orleans	May 4–11	4	..
Massachusetts, Chelsea	May 4–11	2	..
Lawrence	May 4–11	3	..
Michigan, Detroit	May 11–18	6	..
Grand Rapids	May 4–11	1	..
Highland	Mar. 1–May 14	2	..
Minnesota, 45 Counties	Mar. 11–Apr. 30	323	1
Missouri, St. Joseph	May 4–11	15	..
New York, New York	May 4–11	1	1
North Carolina, Charlotte	May 11–18	1	..
Greensboro	May 4–11	6	..
Ohio, Cincinnati	May 10–17	2	..
Columbus	Apr. 1–30	11	..
Hamilton	May 9–16	4	..
Tennessee, Nashville	May 11–18	2	..
Virginia, Richmond	May 4–11	1	..
Wisconsin, Milwaukee	May 4–11	1	..
Washington, Spokane	May 4–11	18	2 Imported
Tacoma	May 4–11	3	..

SMALLPOX—FOREIGN.

Africa, Lorenzo Marquez	Mar. 1–31	..	5
Brazil, Pernambuco	Mar. 1–15	..	72
Rio de Janeiro	Apr. 14–28	3	3
Canada, Sherbrooke	May 11–18	..	6
Chile, Coquimbo	Apr. 20	1	..
Iquique	Apr. 20	..	Present
China, Hankau	Apr. 6–13	..	..
Hongkong	Mar. 31–Apr. 6	24	18
Columbia, Barranquilla	Apr. 20–27	..	1
Ecuador, Guayaquil	Apr. 20–27	..	2
Egypt, Cairo	Apr. 15–22	4	1
Germany, Bremen	Apr. 20–27	1	..
Great Britain, London	Apr. 20–27	1	..
Southampton	Apr. 20–27	1	..
India, Bombay	Apr. 16–23	..	3
Calcutta	Apr. 16–23	..	94
Madras	Apr. 13–19	..	2
Rangoon	Apr. 6–13	..	..
Italy, General	Apr. 25–May 2	13	..
Naples	Apr. 20–May 4	2	..
Rome	Feb. 23–Mar. 2	..	1
Java, Batavia	Mar. 30–Apr. 13	5	..
Madeira, Funchal	Apr. 21–May 5	291	96
Mexico, Aguas Calientes	Apr. 20–May 4	..	37
Mexico City	Apr. 6–20	..	26
Portugal, Lisbon	Apr. 20–May 4	18	..
Russia, Moscow	Apr. 13–20	4	1
Riga	Apr. 20–27	5	..
Siberia, Vladivostok	Mar. 14–21	1	..
San Feliu de Guixols	Apr. 28–May 4	..	1
Turkey, Bagdad	Mar. 23–Apr. 6	..	Present
Bessorah	Apr. 13–20	2	..

YELLOW FEVER.

Brazil, Rio de Janeiro	Apr. 14–20	6	4
		Brought from Union de Reyes.	
Cuba, Havana	May 16	1	..
Ecuador, Guayaquil	Apr. 13	..	6
Guatemala, Zacapa	May 10	1	..
Venezuela, La Guaira	Feb. 16–Mar. 30	..	Present

CHOLERA.

India, Bombay	Apr. 16–23	..	2
Calcutta	Apr. 6–13	..	61
Madras	Apr. 13–19	..	1
Rangoon	Apr. 13	..	5
Straits Settlements, Singapore	Mar. 30–Apr. 6	..	1

PLAGUE—INSULAR.

Hawaii, Honolulu	May 15–21	5	5

PLAGUE—FOREIGN.

Brazil, Pernambuco	Mar. 1–15	..	2
Rio de Janeiro	Apr. 14–28	4	1
Chile, Antofagasta	Apr. 20	15	6
Santiago	Apr. 6	..	Present
Talcal	Apr. 8	..	Present
Egypt, Assiout Province	Apr. 22–29	28	17
Beni Souef Province	Apr. 28–May 2	12	5
Girgeh Province	Apr. 29–May 1	11	10
Keneh Province	Apr. 29–May 1	11	17
Minieh	Apr. 23–May 5	5	2
India, General	Apr. 6–13	$7,501	75,472
Bombay	Apr. 16–23	..	370
Calcutta	Apr. 6–13	..	383
Rangoon	Apr. 6–13	..	103
Japan, Formosa	Apr. 6–13	95	78
Mauritius	Mar. 9	3	3
Peru, Chepen	Apr. 17	4	4
Chiclayo	Apr. 17	1	..
Lima	Apr. 17	6	3
Mollendo	Apr. 17	1	..
Paita	Apr. 17	9	5
Trujillo	Apr. 17	4	5

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Original Articles.

THE AMERICAN MEDICAL ASSOCIATION, ITS AIMS AND INTERESTS.*

By JOSEPH D. BRYANT, M.D.,
NEW YORK.

The fifty-eighth consecutive session of the American Medical Association is now at hand. Those members whom you kindly honored one year ago with your confidence in official station are now before you in token of their loyalty to your undertakings and of their obedience to your behests. These annual conferences are of prodigious moment to the entire medical profession and to the country at large; they serve to broaden the scope of general understanding; they extend the sphere and increase the vigor of professional fellowship and of healthy civic brotherhood, and they correspondingly elevate the station of our calling in the appreciation of thoughtful rightminded people everywhere in the land. Who of us was not made a better physician because of the visit to Boston a year ago? Who of us, then inspired by patriotic emotions, aroused by the memorable examples so abundantly at hand, did not again renew unalterable allegiance to the perpetuity of his country? In whom of us was not incited a higher fraternal sentiment by the warm grasps of fellowship which, while inviting delay a bit, everywhere urged us on to a completed hospitality?

Again, for the third time in the dawn of the twentieth century, we find ourselves in the warm embraces of the hospitable people of Atlantic City. Its wealth of sunshine and cheer, its pure and invigorating eastern breezes, and the joyous acclaim of its citizens assure us that we are in "honest waters which ne'er left man i' the mire," and, therefore, we feel entirely secure and correspondingly happy. We who before never yielded to subtle solicitation or to pressing demand now acknowledge that we have the Atlantic City "habit," and we refuse all treatment except that founded on the therapeutic virtue of the hair of the canine that inflicted the delightful traumatism! In the presence of such a felicitous environment as this, who is there among us who would be so thoughtless, or who could be so unfeeling, as to countenance a trifling with the sense of justice by individual favor, or of commendable desire by vain objection?

In looking about for a topic on which to base my allotted remarks on this occasion, I am, perhaps, unduly impressed with the idea that impersonal openhearted introspection might not be amiss at this period of the Association.

In this bearing I refer more especially, 1, to the organizing of the medical profession of the country and its potential perplexities; 2, to the elevating of the standard of medical education and its possible afflictions, and, 3, to the urgent demand for trustworthy medicinal means and of sincerer efforts on the part of every physician in securing a betterment of therapeutic methods.

Equity, consequent power, and the durability of human designs are the legitimate assets of wisely conceived organization. Power and durability, not thus sustained, are of uncertain tenure and organization resting thereon can be likened to a house of blocks tethered with ropes of sand. And it should be recognized at all times that the virile activities of the principles of human justice are wonderfully potent in all organized bodies of mankind.

The Object of the Association.—It is of great moment that this Association has (as set forth in its constitution) but one significant object in view, viz., The Promotion of the Science and Art of Medicine. And it is purposed in attaining this end "to unite into one compact organization the medical profession of the United States," in order to foster "the growth and diffusion of medical knowledge"; to promote "friendly intercourse among American physicians"; to safeguard "the material interests of the medical profession"; to elevate "the standard of medical education"; to secure "the enactment and enforcement of just medical laws"; to enlighten and direct "public opinion" regarding the "broad problems of hygiene," and to present "to the world the practical accomplishment of scientific medicine."

It follows, therefore, that the promotion of the science and art of medicine as provided by the constitution of the Association is, in effect, the promotion of the methods and the development of the means and the opportunities for relieving human suffering and thereby the adding of years and comfort to human existence. And true it is that to no class of persons is fraternal spirit and vigilant cooperation so essential as to those who are engaged in combating the insidious and tireless encroachments of the agents of human affliction and in relieving the abundant miseries which they beget. A transcendent service like this should be sheltered by the zeal of healthful personal and professional devotion and in no way depleted by the wiles of business ambitions. Those who regard the practice of medicine as a business enterprise should class themselves as brokers in a market of human affliction. To those who would infect the sound spirit of professional devotion and fellowship with the virus of sordid gain little heed need be given at the counsels of thoughtful men in the ranks of a beneficent profession.

The uniting of the medical profession of the United States into "one compact organization," making to the wise purposes already stated, is pro-

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gressing in a decided manner, guided by the earnest activity and abundant experience of Dr. J. N. McCormack of Kentucky. Already the constituent members of the organization number nearly 65,000, of which the fully constituted members are about 27,000, showing a substantial increase of the former class during the present year of about 10 plus per cent. and of the latter about 12.5 per cent. And when it is recalled that the regular medical profession of the United States numbers about 112,000 it is not difficult to understand that in the near future the medical profession of these States might easily be united into one compact organization. But how compact it may be and how enduring it may become will depend on the degree of wisdom exercised by its builders and on the measure of justice dispensed by those in control of its affairs.

"Justice without wisdom is impossible," said Froude. "Wisdom is only truth," said Goethe. Therefore, justice and truth are inseparable, say we all. The search for truth and understanding is the inherent right of all men, and they who inhibit the effort are for some reason (or pretext) opposed to justice and to knowledge. Obviously the consensus of men of widely separated habitation, of differently constituted environment and opinion, is a wiser and a safer guide in the conduct of important and comprehensive human affairs than is the consensus of men of contiguous localities. The judgment of the former class represents the concentrated wisdom of the whole, of the latter only that of a part of the country. The principle of utterance or of action relating to matters of common interest and general effect in organized bodies, should in all cases be known and approved and be coordinated through the deliberate wisdom of broad constituted authority, rather than by the anxious thought or the hasty vocabulary of a few persons, no matter how experienced they may be or how wise they may be regarded as being. History not infrequently has demonstrated by untoward results the need of this rule of action in governmental and in other human affairs.

The lamented Lincoln emphasized the importance of this principle in no uncertain manner by the famous utterance, "The government of the people, by the people, for the people, shall not perish from the earth."

And in this relation it is well for us to keep in mind that a failure on the part of the responsible many, to plan and coordinate wisely the official acts of the few, often renders effeminate and inoperative the subsequent inhibitory efforts of those in established control.

Among the inspiring benefits provided by the constitution of this Association is embraced the fostering of the growth and the diffusing of medical knowledge and its beneficence, throughout the various channels of human intercourse. The promoting of the growth and the diffusing of medical knowledge should appeal with equal vigor to the people who experience relief and to those who contribute the products of medical enlightenment.

Every physician can contribute a definite share to the healthy growth and wise diffusion of medical knowledge and to its bounties. Those who strive in the workshops of medicine, the laboratories and the hospitals, more especially the former, have already bestowed a bountiful portion toward the attainment of this end. Scientific laboratory deductions, however, could not be regarded as final; they yet required the leavening proof from out the complex laboratory of the human body, as demonstrated by practical applications in the treatment of disease, to establish their worth. To the general and to the hospital practitioners of medicine belonged the duty of dispensing the fruits of laboratory research, and thus far so well has concurrent effort accomplished its purpose, that life's expectancy during the first forty years of existence has been advanced quite 30 per cent. But following this period only a little advance in this regard has yet been made, and principally because of the differences in the nature of the diseases which afflict those of the earlier and of the later periods of life.

The present and prospective civil worth of the toll levied by disease on the wisdom and experience of mankind, during the later period of life can not well be estimated. But the physical sufferings of this period are largely the characteristic outcome of its peculiar diseases, many of which might be prevented and perhaps cured by means of progressive investigation and therapy related to a full term of years, and thus life's span becomes yet longer extended.

As just observed, every physician, if he will, can contribute a definite share to this preeminent undertaking. The opportunities of the country practitioner in this regard are of special significance, because of the knowledge gained through the differing effects of environment on the diseases of country and urban patients. Painstaking cooperative effort directed to the solution of the problems of disease can be made wherever two or more physicians are in mutual contact with each other and shall undertake the task.

Medical Education.—It can not be gainsaid that comparatively few of the people constituting the medical profession of this country are tireless in their efforts to advance the scientific and practical status of medical knowledge. But what can be said regarding the great multitude of others of the people, referable to mutual response commensurate with the earthly blessings which they receive? As an earnest of the sentiments of those persons who give bountifully to beneficent ends, I quote from a comprehensive address delivered by President Keen at the annual session of this Association, held here in June, 1900, and based on the United Education Report of 1898. President Keen presented to the audience the following startling facts regarding the comparative endowments bestowed on theological and medical schools for teaching (not foundation) purposes in this country. It was shown that each of the 8,000 theological students had the income of $2,250 provided for his instruction, and that each of the 2,400 medical students had the income of $83 provided for the same purpose. Also that of the 178 endowed chairs in teaching, only five related to medicine. Then we were solaced by the thought, "A hard beginning maketh a good ending."

In this address President Keen gave as his opinion that the difference in the amounts of these endowments was chiefly in consequence of the "vicious methods of the conduct of medical teaching as represented in preparatory medical schools." And it is fair to say that many others were of the same opinion. In view of this hypothesis, and of the fact that since the time of the report on which it was based up to the final one[1] of five years later, and notwithstanding that distinct improvement in the administration and the teaching in medical col-

leges had taken place, and broader laboratory avenues of well-known scientific outcome were in operation, still it does not appear that a sufficient rising in the tide of advancement was reached to influence satisfactorily the inclination of munificent givers. For, according to the report of 1903-4, each of the 7,400 theological students of 1904 had the income of $3,031 provided for his instruction, and each of the 27,000 medical students of that year had the income of $54 provided for the same purpose, thus showing a gain over the previous report in favor of the theological student of $781 per capita, and a loss to the medical student of $29 per capita, for teaching purposes.

Endowments.—Substantially the benefit of $22,500,000 was available for the purposes of theological education, as against the benefit of $1,450,000 for medical educational use at the time of the report of 1903. At this time, of the 153 theological schools 77 report endowments and 76 report no endowments. And of the 152 medical schools 19 report endowments and 133 report no endowments. Also five of the theological schools had endowments varying in amount from $853,000 to $1,525,388 each. Now, more than ever, are we impressed with the force of another expression, "Help yourself and Heaven will help you."

In view of this later increase in the difference of the incomes bestowed for direct educational purposes, and under improved medical conditions, it seems quite likely that opposing factors more potent than first assigned, are extant. When, however, it shall happen that bountiful givers regard us in health as in acute affliction, perhaps greater heed will be given to the wisdom of making larger medical educational gifts. Irreverent comment has hinted of another compelling influence, especially related to generous adult minds, embodying the notion that the hope and faith of celestial expectancy, are more attractive than are the faith and outcome of terrestrial realization. Whatever may be the reason for the continued paucity of medical endowment, I am not prepared to say, but I hope that substantial improvement will be secured through the convincing influence of beneficent subjective and objective lessons, patiently, discreetly, and thoughtfully impressed by us on the public mind. Yet, confronting this hope, there appears an ominous specter pointing to the fact that only by laborious effort, chiefly supported by the medical profession, were the memory and brilliant services of the late Dr. Walter Reed meagerly characterized. Those who experienced the greatest blessings because of them gave the least to the care of those whom he loved most.

The simple, commonplace remark, "the promoting of friendly intercourse among American physicians," I regard as the most important announcement set forth in the opening declaration of the constitution of the Association, looking to the "Promotion of the Science and Art of Medicine." For, without the stimulating and guiding support of professional good-fellowship in all the term implies, discord and discredit are likely to delay or cripple the realization of this one great object in view.

The Journal.—I know of no agent so well fitted to contribute to the fostering of the growth and the diffusing of medical knowledge and the promoting of friendly intercourse among American physicians as rightly falls to the lot of *The Journal of the American Medical Association.* A journal with a weekly circulation of over 50,000 and accounted as the utterance of many more than this number of the organized medical profession of the country, may well be regarded in things of professional concern as the voice of the multitude proclaiming its will. Therefore, it is important that the tone and wisdom of its speech be in accord with the judgment of the great majority of our profession. I am inclined to believe that when the pages of our journal are the forum of temperate and instructive discussion of the policies of common interest to our membership greater impetus will be given to just causes and a broader scope to fraternal comfort among American physicians. One, however, can not be reminded of *The Journal* without being impressed by the creative ability, the abiding energy, and overtaxed assent of the editor, the Secretary of this Association.

I am deeply impressed with the belief that at this time the greatest danger to continued harmonious unity in the Association lies ill-hidden in the constituted expression, "to safeguard the material interests of the medical profession." It requires no special discriminating sense to foresee the devious interpretations which eager desire might willingly give to the phraseology of this declaration. Fortunately, however, no rendering of the language of this expression can be properly entertained which conflicts with that of the antecedent one, "the promotion of friendly intercourse among American physicians." However this may be, the following suggestive lines of Froude should not be overlooked: "Where all are selfish the sage is no better than the fool, and only rather more dangerous."

The War Against Disease.—The genuine products of completed organization of the medical profession are of infinite importance to the well-being of the country. The potent factors of common prosperity will be encouraged and protected; the hearts and homes of the well-to-do and the hopes and hovels of the needy will each reflect in joyous ways the benefits of cooperative action in fixing the nature, overcoming the causes, and lessening the burdens of disease. The war now under way against cancer and tuberculosis, two of the insatiable inflictions of humanity, can, along with that opposing ophthalmia, be waged with comprehensive rational designs and improved prospective results.

The broader the field of opportunity in this regard, and the greater the activity of the contest, the more bounteous will be the return and the greater a final victory. When, for instance, it is recalled that for unknown reasons the death rate from cancer is slowly advancing in spite of intelligent, earnest opposition; that acquired tuberculosis yet adds 13 per cent. to the total death rate; that unrestrained ophthalmia causes over 25 per cent. of the blindness from disease; that over 30 per cent. of the school children of New York, and perhaps of other large cities, suffer from defective vision, and that in 75 per cent. is their mentality impaired by causes yielding to curative measures of a simple and permanent nature, then, indeed, is the necessity for united action relating to control of human infliction emphatically demonstrated.

The alleviation and cure of such afflictions serve to lighten the burdens of public care, to lessen the tenantry of charitable and penal institutions, and to lay the foundation of good citizenship.

A National Board of Health.—The fact that communicable disease has no boundary restraints in the presence of unguarded human pursuits is quite as familiar to the lay as to the medical mind.

Also that human indifference and human ignorance and established sectional state policy often contribute an unfortunate share to human distress is well known to the medical profession. It would seem wise, therefore, that interstate sanitary regulations should be established, thus affording even-handed opportunity of protecting interstate enterprise from the effects of current disease. Duties of this nature and others of national sanitary importance can be properly met when an awakened sense of the need on the part of those controlling the affairs of the country shall invite the cooperation of our profession looking to the acquiring and preserving the best results, which wise statesmanship and wise sanitation can jointly secure.

A national board of health having in charge such things as properly fall under its consideration and action would be a national blessing of ever-increasing importance. But in this relation candor compels me to state that I find little encouragement for those of our profession who at the outset would demand a seat in the executive council at the head of the nation as an acknowledgment of professional capacity, or as a retainer for prospective service. Instead, we and others laboring in mercy's cause should be willing to serve in allotted capacity as Jacob served for Rachel, with unostentatious patience, tinctured perhaps with cruel disappointment, but leaving the results of our labors as an earnest of our worth and of the reward which best befits us.

Not a little has been said in the near past regarding the possibility of securing national incorporation of the American Medical Association, with power to hold property and transact business anywhere in the United States. The gaining of such incorporation is no longer speculative, for within the last year several charters of similar scope to that framed by Judge Ray for us have been secured for other organizations. I am inclined, however, to hesitate in recommending a renewal of endeavor in this respect until assurance can be had of earnest, genuine effort on the part of all, looking to the securing of incorporation and also cooperation in the adjustment of the business matters essential to a completed consummation of the act. A policy which would contemplate the locating of the business affairs of the Association at Washington in the event of incorporation, I regard as hostile to the best interests of the profession and contributive to the impairment of fraternal peace.

Medical Legislation.—The enactment and enforcement of just medical laws is a matter of superlative importance. Fair and equitable relations, founded on uniform standards, should be established between the respective States regarding the requirements of medical education. Under this arrangement, fully qualified physicians going from one State to another would not be obliged to submit to annoying State board scrutiny concerning fitness to practise medicine. Since no unusual professional attainments are necessary to meet the exigencies of practice in any State of the Union, but little difficulty should be experienced in establishing a grade of educational requirement, permitting of practice through reciprocal comity.

The unwelcome thought arises at this time that, in the absence of equitable State reciprocity, one or more States not blessed with first-class educational opportunities might endeavor to protect their own interests against the professional encroachments of the graduates of first-class medical schools by requirements to practice of such character as not to merit serious thought on the part of the faculties of highly reputable medical institutions. It is difficult, however, to conceive that this idea can be more than a passing fancy, for how a course of this kind could receive the sanction of good judgment is not easily understood. Relative to competent practitioners of long standing who may desire to change their State environment, a greater difficulty attends a proper adjustment of their situation. It seems to me, however, that common justice requires that a form of examination should be given in these instances, which in its scope is measured by practical methods consistent with the experience of the applicant, rather than by one of modern requirement. For I am quite certain that if a member of the teaching faculty of a modern medical school were unexpectedly to find himself outside the halls of his own institution, a creditable return through the enlightened channels prescribed by his catalogues for students, would be shadowed with great doubt and probably attended with humiliating disaster.

Medical Education.—Beneath this opinion lies a thought pregnant with important professional responsibility relating to all those who have to do with regulating the requirements to begin the study of medicine. Should it occur to them that ideals may not everywhere be needed and that the object might be to meet the requirements of the whole country—a country yet comparatively new in professional opportunities and rewards for ambitious young men in a great part of its area? Should it occur to them that the coming into the field of action of vast business enterprises has begotten corresponding opportunities attended with less preparatory drudgery and expense and by greater prospective rewards than generally attend the practice of medicine? Ought they to keep in mind that the increase in educational requirements above a certain point has not resulted, at least in New York State, in a corresponding increase in medicine of those of the highest qualifications, but instead their comparative numerical status (21 plus per cent.) in this and in other common respects has remained practically unchanged for the last ten years? Is it not possible, therefore, that many worthy and able young men who are less favored than their fellows have sidestepped because of the comparative hardships imposed by educational requirements and the uncertain and delayed rewards that attend earnest endeavor in the medical profession?

Whether or not the standard of medical education should soon be raised in this country to equal that of the old world is a matter concerning which honest differences of opinion are earnestly pronounced. While no one can consistently contend that knowledge is not power, yet the adjustment of more than a requisite amount of knowledge in the practice of medicine to the sparse occupancy of many broad areas of this country is a matter which for some time to come may concern the stern power of economics more than the needs of ideal culture. Possibly, therefore, those who are blessed with commendable professional dignity and with pleasing remunerative environment might willingly pause for a time while giving thought to the demands for professional care in broad necessitous surroundings.

The analytic work being done by the Council on Medical Education is mercilessly disclosing the comparative status of the medical schools in this country, to the discredit of many heretofore differently regarded. The active manner in which the

labor is carried on under the chairmanship of Dr. Arthur D. Bevan is creditable to the committee and to the cause in hand. Inasmuch as the standard of suitable preparatory medical attainment depends more on the capacity of a faculty to impart knowledge and beget character than it does on the phraseology of the curriculum, the outcome of the committee's efforts is being watched with solicitous interest by all concerned in honest standards of moral and medical qualifications.

Apropos of the importance that the faculties of medical schools should lead the way to higher station in professional ethical conduct, both by precept and example, I am prompted to say that there appears to be no doubt that uncanny business instincts are encroaching in the reciprocal vulgar ways characteristic of lay methods not a little on the sacred domain of professional propriety. I am of the opinion that trespasses of this kind are chiefly the outcome of acquisitive intentions based on delusive selfseeking desires. The remedy for the cure of this unprofessional propensity rests largely in the hands of the faculties of medical schools. They should inculcate a high sense of professional honor in those who come under their tutelage. Ample instruction of medical students in the tenets of moral philosophy, as applied to the practice of medicine, and substantial disapprobation of offending practitioners by their colleagues will, in my judgment, hasten the reduction of this evil to a minimum.

In this glorious country of ours, "the will of the people is the law of the land." And in this bearing it is needful that we should act with good sense concerning our personnel in all matters which are of special interest to the commonalty, so as not to encounter the adverse activity of popular desire. In this connection it is important to know that in the United States there are about 84,000,000 people, the great majority of whom are capable of satisfactorily judging of the practical things of life relating to themselves as they come into thought. Also in the United States there are about 112,000 physicians who are eligible to membership in the American Medical Association, but of which as yet little more than one-half are affiliated in any capacity with the organization. It logically follows, therefore, that a judicious estimate should be made of how the great majority of the 84,000,000 of people plus nearly half of our own calling would regard out intentions before venturing at all rather than prematurely to court defeat and corresponding loss of station. The question is *not* altogether what we think of ourselves and our causes, but the question *is* how we ourselves and our causes may be regarded by the people concerned and by their friends, to say nothing of the balance of our own profession. And, too, it should be kept in mind that it is not likely that general mutual accord will prevail in all matters of common interest which arise in organized bodies of men. In a humane profession appeals should be made to judgment, not to passion or prejudice. It is within the easy recollection of most of us that sturdy efforts were made by the united medical profession of a State in what was regarded to be a justifiable cause. Yet, as it appears, decided defeat was the outcome, because the majority of the interested people were not in harmony with the contention. This suggestive lesson should not pass unheeded, if experience and good judgment are to become available assets in the conduct of the affairs of medical organization.

The Need of Honest Drugs.—It is written that Oliver Cromwell, while fording a river with his army to attack the enemy, exclaimed, "Put your trust in God, but mind to keep your powder dry!" No less determined than Cromwell was, do many physicians now feel on account of the fact that their figurative powder (drugs) is quite apt to be worse than wet, being alarmingly defective in quality and fickle in strength. As an illustration of these facts, no evidence more convincing can be presented than that of the Health Department of New York City. This efficient department has for some time labored with discreet energy and with astounding results in this heretofore comparatively untilled field of interrogative scrutiny. That the crude drugs and standard preparations approved by the United States Pharmacopœia and prepared and exploited by reputable pharmacists should, in all instances, be found trustworthy admits of no denial.

It appears, however, from the reports of the Board of Health of New York City, on the analytic findings incident to the examination of crude drugs, tinctures, fluid extracts, etc., as compared with corresponding standards adopted in the United States Pharmacopœia, that reputable pharmacists have, because of commercial indifference, or studied intention, not infrequently contributed to therapeutic misfortune through the quality and strength of their drugs. I will call your attention to only a few illustrations which are an emphatic earnest of the need of general scrutiny of the pharmaceutical part of our therapeutic armamentarium.

It is a matter of general knowledge that aconite is a drug of potent nature and in comparatively common use. Of this drug five of the thirteen samples analyzed were of the tincture and fluid extract of the root. Of the three specimens of the tincture one had 9 per cent. more, and of the remaining two 6 and 20 per cent., respectively, less of aconitin in than the standard requires. The two samples of extract of the root had 13½ and 25½, respectively, more aconite in than is required. The remaining six samples were of the powdered root which in no instance was sufficiently abnormal to call for admonition. The samples of belladonna showed, respectively, from 35 to 45 per cent. less of mydriatic alkaloids in the powdered extract of the leaves, 11½ per cent. less in the fluid extract of the root, 17 per cent. more in the tincture of the leaves, and 47½ per cent. in the fluid extract of the leaves than is required by the United States Pharmacopœia. Powdered nux vomica was found to be comparatively worthless, but in the tincture and fluid extract was revealed an excess of strychnine above the required standard of 19 and 17 per cent., respectively. In the tincture of opium was found, of morhpine 7 to 13 per cent. more than the accepted standard of composition.

In 1-100 grain tablet triturate of nitroglycerin was discovered only 1-1600 of a grain of the drug. It is said that this preparation of nitroglycerin was known by the manufacturers to be unreliable and, therefore, should not have been exploited at all or in a guarded manner. It is not difficult to foresee how the failing to secure proper response from the use of these or other tablets of uncertain strength that the substitution therefor of a fresh solution of the drug might result unfortunately, especially if the dose of the fresh preparation were of the same amount as was that of the tablet last given. I have in mind an instance of this kind in which the use of a fresh solution of strychnine caused a fatal result.

It further appears that of the first sixty-one samples of drugs examined by the Health Department, all of which "articles are of exceptional importance, most of them potent poisons, and all are represented by definite chemical standards in the Pharmacopœia," only about 28 per cent. of the whole number was considered good and 16 per cent. were so bad as to justify legal action. It is proper to say that the majority of the manufacturers recognizing the awkward position in which they were placed, with a spirit of yielding opposition complied with the reformatory demands of the Health Department. This list of producers is small in number compared with those who are engaged in similar business in the United States, and, no doubt, present as favorable picture of this class of the drug evil as can be drawn.

Nor is the foregoing distress the only torment in pharmacy with which the medical profession has to contend. The idealized, savory products of pharmacy with which the market is cloyed are often quite as fickle in their nature and virtues as was a certain ancient queen of the Nile. Discreditable business thrift supplemented by cooperative professional contentment and convenient indifference, patronized by confiding and credulous people, yields princely returns for the diminutive cash and equivocal integrity invested in it.

Not all of those, however, engaged in the pharmacal trade are unworthy of the trust and confidence given to men in other avenues of business. Very many, indeed, thus engaged are as sincere and trustworthy in their business affairs as are the best of those in other undertakings. Therefore, the old and revered principle of common justice, while emphasizing the fact that every person should be regarded as being honest until the contrary is proven, should be kept in mind and action. Consequently, in our conduct of matters imbued with professional or business virtues, the resolution should be to estimate uprightness of character by the tenets of common justice, and not by preconceived notions hostile to the principles of established equity. Purposes thus graciously fortified command respect, and gain in strength because of opposition. The reverse, however, will beget distrustful thought and may finally cause defeat. In this recital I can not overcome the belief that we ourselves contribute a major share to the inception and success of many medicinal ventures by our indifference or ignorance relating to savory prescribing and also by our thoughtless employment of proprietary medicines. Here, too, is a chance for medical teachers to instill proper notions regarding consistent ethical and therapeutic refinements.

When John Dryden wrote, "virtue is her own reward," he expressed a sentiment in keeping with the self-sacrificing spirit characteristic of the members of the Council on Pharmacy and Chemistry of the American Medical Association. I am creditably informed that these gentlemen are serving the profession and the people in this labor without the expectation of vulgar reward or the anticipation of special favor. I desire to commend their motives, approve of their work, and bespeak on the part of the profession an earnest support of all wise conclusions. Those who labor in a just cause without stipend are deserving of great praise; those, however, who serve for pay can only expect approbation.

But little less important than the preceding, in some respects, would be the careful scientific consideration of the therapeutic value of the abundant springs of our country. There is much, indeed, of special significance regarding their popular use which might well be garnered and put on a sound basis. A scientific cooperation with those who are in charge of certain baths possessed of traditional specific value might readily guide to improved conditions of significant importance to all those who seek relief. A country as rich as ours in these spontaneous endowments can well afford, in proper ways, to court the attention and support of the afflicted and to the decided advantage of all concerned.

The Medical Profession in Civic Life.—The sincere belief, on my part, that the outcome of professional governing policies of common interest in our affairs are practically alike in county or State prompted me in a recent parting address to the united medical profession of the State of New York to say: "The organization of the medical profession here and everywhere throughout the country contemplates the realization of more than the scientific advantages arising from personal contact and local cooperative thought. It should be regarded as an earnest that the medical profession intends to take an active and controlling part, if possible, in those affairs of civic life which relate to the well-being of the body politic. There should be no question regarding the status of the medical profession in all matters relating to the securing of pure food, pure drugs, and wise public sanitation." Also it was said: "It would be sadly amiss, indeed, were I not to admonish you at this time, the opening of a united career, of the grave perils begotten by a spirit of paternalism which not infrequently is a pernicious byproduct of organized power. The seductive and aggressive influence of this spirit often usurps and may inhibit that nobler, more enduring, and beneficent spirit characteristic of common manhood and professional brotherhood. And it should not be forgotten that the greater and more extended is the membership of a fraternal body the greater and more extended are self-seeking desires apt to be. Consequently the longer the chain of affiliation is the weaker it may become, for, as you already understand, "no chain is stronger than its weakest link." I pause to inquire, is there any good reason to doubt that the medical organization of the nation might not respond to similar influences? Let us, however, cherish the belief that wise discretion fittingly stimulated by just conceptions of fraternal spirit will guide us securely along the pathway of increasing professional attainment and good fellowship to the end of useful life.

And, finally, when by the aid of Divine Providence, the medical profession of the United States shall have been made into "one compact organization" and impelled in dutiful desires only by the highest motives of professional purpose and of public welfare, no enlightened opposition will oppose its desires, nor will irrational outcry, nor vagrant motives, find patient listeners or available foothold in the councils of the organization or in those concerned in the requirements begetting of public confidence and respect.

Earnings of German Physicians.—A report by the Medical Chamber of Berlin and Brandenburg shows that the average income of Berlin's doctors is $2,250. In the case of 1,322 of them, however, it is less than $1,250.

THE EUSTACHIAN TUBE, ITS ANATOMY AND ITS MOVEMENTS: WITH A DESCRIPTION OF THE CARTILAGES, MUSCLES, FASCIÆ, AND THE FOSSA OF ROSENMULLER.

By W. SOHIER BRYANT, A.M., M.D.,
NEW YORK.

During the last twenty years the writer has paid much attention, clinically and anatomically, to the tympanopharyngeal tube, and long since noted certain physiological and anatomical points which are not usually accepted but which, by clinical observation and post-mortem dissection, he has established to his own satisfaction.

Movements.—The normal tube opens during act of swallowing or gaping. It opens partially during phonation, in proportion to the movement backward of the *velum palati*, which is greatest with the letters K, T, EE, etc., and least with M and N. Inspection through the nasal fossæ when the lower turbinates have been removed (Fig. 1), or through

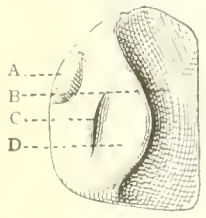

Fig. 1.—Pharyngeal orifice of the right tympanopharyngeal tube at rest, seen from the anterior nares in the living. The lower turbinate has been removed. A—Middle turbinate. B—Fossa of Rosenmuller. C—Mouth of tube, closed. D—Torus tubæ.

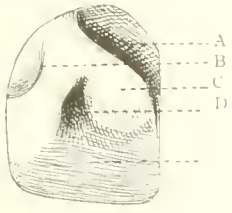

Fig. 2.—The same as Fig. 1 during an act of swallowing, the upper surface of the soft palate has risen into view and occupies the foreground. The ala cartilage has swung inwards and upwards, enlarging the orifice of the tube. A—Fossa of Rosenmuller. B—Middle turbinate. C—Torus tubæ. D—Mouth of tube, opened. E—Soft palate.

a salpingoscope (Fig. 3), discloses the pharyngeal mouth of the tube and the *torus tubæ*. The act of swallowing, or an act which raises the soft palate and applies it to the posterior pharyngeal wall, is accompanied by movements of the *ala tubæ* in proportion to the palatal movement (Fig. 2). The ala is seen to rise, moving inward and backward, and at the same time the mouth of the tube changes its shape from a nearly vertical slit to a triangular opening—formed by the backward movement of the posterior wall of the closed tube (Fig. 4). The an-

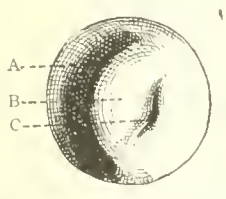

Fig. 3.—The same tube as in Fig. 1, at rest, view through a Eustachian salpingoscope. The fossa of Rosenmüller is seen on the left because the lenses reverse the image. A—Fossa of Rosenmuller. B—Torus tubæ. C—Mouth of tube, closed.

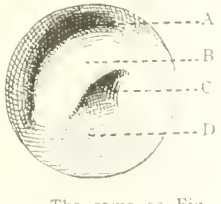

Fig. 4.—The same as Fig. 3, during an act of swallowing. The upper surface of the soft palate occupies the foreground. The fossa of Rosenmuller is nearly closed by the backward and upward movement of the ala cartilage which has distended the tube. A—Fossa of Rosenmuller. B—Torus tubæ. C—Mouth of tube, opened. D—Soft palate.

terior wall remains stationary. The inferior wall of the open tube is formed by the stretched inferior commissure of the closed tube. The motion of the *ala tubæ* or cartilage takes place in the pharyngeal sinus or fossa of Rosenmüller. When the tube is wide open at its mouth the depths may be seen nearly to the *isthmus tubæ*.

*The following figures from the living and anatomical preparations were drawn by Dr. A. Braun of New York.

Anatomy.—The cartilaginous portion of the *tuba auditiva* is very irregular in the arrangement of its component parts. The posterior wall of this part is composed of a plate of cartilage which has a nearly right-triangular posterior surface and forms the greater part of the anterior wall of the fossa of Rosenmüller. The apex of the triangle of cartilage lies at the junction of the cartilaginous with the osseous tube. The upper border of the cartilage is attached to the skull and fits into a depression on the sphenoid bone. The right angle of the triangle is situated at the pharyngeal end of the upper border of the cartilage, and is attached near the base of the inner pterygoid process. The inner border of the triangle forms the short limb or vertical side. It is also the free border of the cartilage and forms the *torus tubæ*. Its lower extremity ends in the angular process of the cartilage. The third and lower side of the triangle is freely movable. This triangular or alar cartilage passes above and forms the hamular process, a small part of the anterior wall of the tube. The cartilage as a whole is made up of one large piece and several accessory ones. The cartilage and its attachments are elastic and yield readily to pressure, which allows fairly free movements.

The greater part of the anterior wall of the tube is a strong membrane. The lower wall of the open tube is a loose elastic sheet of fibrous tissue which contracts and folds together when the tube is closed. The lumen of the inner third is obliterated by the contact of the anterior and posterior surfaces when the tube is closed. The upper and lower boundaries of the external half of the cartilaginous tube are formed by the concavity of the alar cartilages. The tube always remains open because the anterior wall does not wholly collapse against the concave posterior wall. The outer part of the tube, which normally is open, has a rigid and comparatively non-elastic wall, while the pharyngeal end is collapsible. The mucous membrane of the closed tube lies in longitudinal folds, especially toward the pharynx and floor of the tube. Here the thickness of the submucous layer is much increased. When the tube is dilated, these rugæ mostly disappear. The long diameter of the closed pharyngeal ostium measures, on the average, 7 mm. The open ostium, an equilateral triangular, averages 6 mm. in height and 6 mm. in width.

The anterior wall of the tube rests upon the tensor palati muscle, and that in turn on the internal pterygoid muscle and the intervening fasciæ. The pharyngeal ostium rests against the posterior surface of the pterygoid process. This backing prevents the collapse of the anterior wall. The cartilage of the posterior wall swings and bends easily at its line of attachment, and allows considerable increase in the lumen of the tube.

The tuba auditiva has two important fasciæ alternating with its two chief muscles. The fasciæ lie in the same plane as the axis of the tube and are nearly parallel to each other. The fibers of the fasciæ are almost at right angles to the tubal axis. The more important of these fasciæ—the salpingopharyngeal—lies between the levator and the tensor tympani muscles. It is attached to the membranous Eustachian tube at the angle between the anterior and inferior walls of the open tube, or the lower angle of the closed tube. It extends to the hamular process of the sphenoid. The other fascia lies posterior to the levator palati, and is attached to the lower free edge of the alar cartilage, which

prevents the levator palati muscle from slipping off the angular process of the cartilage when the muscle contracts.

Several muscles are situated on, or in the neighborhood of the tube and affect it by their movements. Chief of these are the levator palati or dilator tubæ, and the tensor palati. The fibers of both these muscles run practically parallel to the long axis of the tube. The levator lies below the lumen of the tube and anterior to the angular process of the alar cartilage (Fig. 8). It is attached peripherally to the base of the skull at the edge of the carotid canal. Sometimes the fibers are attached to the lower border of the alar cartilage. (Fig. 12). The sheath of the muscle is strongly attached to the perichondrium of the alar cartilage. Its muscular fibers form a strong round belly. Its inner extremity is attached to the muscular mass of the velum palati. This attachment moves with the soft palate. When the soft palate is relaxed and hangs forward, the palatal attachment of the levator is drawn downward and forward (Fig. 5). If

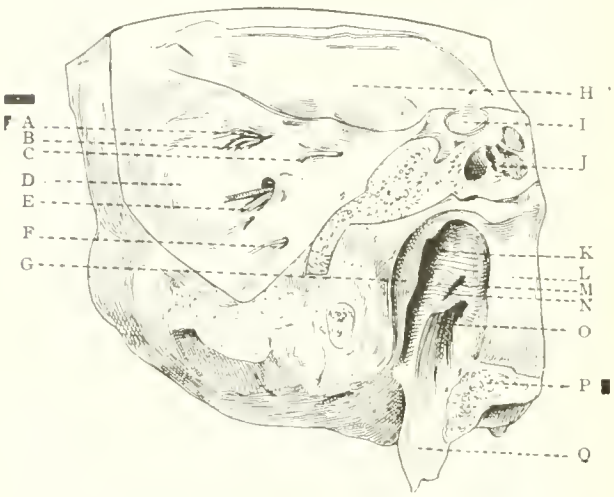

Fig. 5.—Shows the left post nasal space and soft palate which hangs placid. The belly of the levator palati muscle has been uncovered and hangs downward from the mouth of the pharyngeal be A—Internal auditory meatus. B—VII and VIII nerves C—VI nerve D—Posterior fossa of skull. E—IX, X, and XI nerves F—XII nerve. G—Posterior pharyngeal wall. H—Middle fossa of skull. I—Hypophysis cerebri J—Spheroidal sinus K—Fossa of Rosenmuller. L—Nasal septum. M—Torus tubæ N—Mouth of tube, closed O—Levator Palati P—Hard Palate Q—Soft palate

the palate is drawn upward and backward, the inner attachment of the levator is also drawn up and back (Fig. 6). The levator palati muscle pushes the

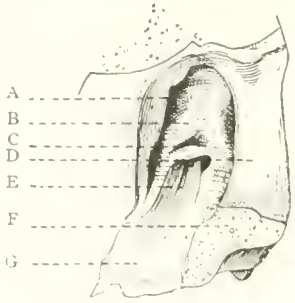

Fig. 6.—The same specimen as Fig 5. The soft palate has been drawn up and back carrying with it the levator palati muscle whose fibers now run downward and backward from the tubal mouth. The tension of these fibers has swung the ala cartilage backwards and upwards and opened the tube A—Fossa of Rosenmuller. B Torus tubæ. C—Mouth of tube, opened D—Nasal septum. E—Levator palati F—Hard palate G—Soft palate

alar cartilage backward, upward, and inward, opening the pharyngeal orifice of the tube (Fig. 9). The muscle at rest forms an obtuse opening backward at the point where it touches the angular process of the cartilage. If the palatal attachment of this muscle is drawn up and back, the angle is made less obtuse. When the muscle contracts it tends to straighten this angle and presses the angular process backward, upward, and inward. The cartilage swings inward because of its oblique attachment to the base of the skull.

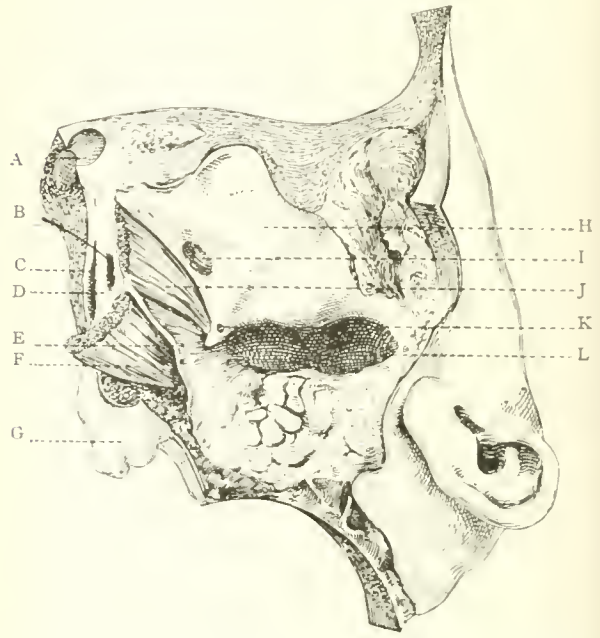

Fig. 7.—Base of the skull, lower jaw removed and part of the sphenoid bone exposed The pharyngeal mouth of the left Eustachian tube is seen in position The tensor and levator palati muscles are cut at the level of the tubal mouth and dissected bare. Between them lies the salpingopharyngeal fascia. The fibers of the tensor palati and levator palati muscles are seen to run parallel to the axis of the tube. The broad outer surface of the tensor is seen. The belly of the levator rests against the lower part of the tube and anterior surface of the lower angle of the cartilage A—Sphenoida, sinus. B—Probe in tube. C—Fossa of Rosenmuller D—Torus tubæ E—Fascia between levator and tensor palati. F—Levator palati G—Soft palate. H—Greater wing of spheroid I—Foramen oval J—Tensor palati K—Foramen spinosum L—Glenoid fossa

The tensor palati is a thin muscular and aponeurotic sheet covering the anterior surface of the tube. It varies more widely in its peripheral attachment than the levator. It arises from the sphenoid bone close to the outer side of the attachment of the cartilage of the tube (Fig. 11), and often extends by aponeurotic and muscular fibers to the upper surface of the hamular process of the cartilage. In 20 per cent. of the specimens examined the attachment spread downward, covering part of the anterior membranous wall on which the muscle rests, but it was never attached as far as the inner third of the tube. The muscle is often attached to the fascia lying on its outer surface. The external belly of the tensor palati is fixed by its tendon to the hamular process of the sphenoid. The outer extremity is fixed at the base of the skull and to the external fascia of the tensor. The direction of the muscular fibers ranges from being absolutely parallel to the tube to an angle of 10°, consequently they cannot have a forward pull on the anterior wall of the tube or a downward pull on the hamular process (Figs. 7 and 10). In fact, the contraction of the muscle can affect the lumen of the tube but little, if at all. The muscle is firmly supported anteriorly by the fascia which rests on the internal pterygoid muscle and the pterygoid process.

The less important muscles connected with the tube are inconstant. They are a slip from the palatoglossus—the salpingoglossus—which is rerely present, a slip from the superior constrictor of the pharynx—the salpingopharyngeus—and a slip from

the palatopharyngeus. The last runs along the inner border of the salpingopharyngeal ligament, and is attached with it to the angle between the anterior wall and the floor of the tube. It distends the tubal mouth by a pull forward and downward at the anterior angle. The fibers from the salpingopharyngeus can only depress the ala and draw it downward and forward, thus closing the tube. It is attached to the angular process of the alar cartilage. The upper fibers of the constrictor of the pharynx loop under the tubal mouth, and occasionally run to the triangular cartilages and form the salpingopharyngeus. Other fibers, twisting externally to these, go to the back wall of the pharynx behind the fossa of Rosenmüller. The point of bifurcation of the muscular fibers forms the lower commissure of the fossa of Rosenmüller.

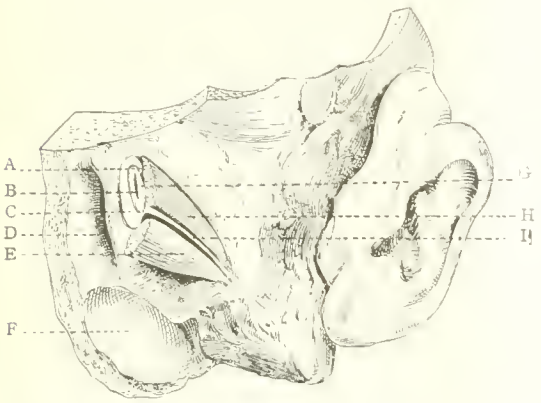

FIG. 8.—A similar specimen showing the tube in cross section. Two mm. of the pharyngeal extremity has been removed. The fibers of both the tensor and levator muscles are seen running parallel to the tube and are separated by the salpingopharngeyal fascia. The levator palati is seen resting on the anterior surface of the angular process of the cartilage. A—Hamular process of cartilage. B—Cross-section of tube. C—Section of cartilage. D—Fossa of Rosenmüller. E—Levator palati. F—Condyle. G—Section of membranous portion of tube. H—Tensor palati. I—Fascia between tensor and levator palati.

The fossa of Rosenmüller, or the pharyngeal sinus, is extremely variable, and does not exist in the infant. It is lined by the mucous membrane of the pharynx and is rich in adenoid tissue. It furnishes room for the movements of the alar cartilage, which lies on its anterior wall. On cross section the fossa is somewhat lenticular in shape. Its upper angle is formed by the angle of the attachment of the alar cartilage to the base of the skull. Its lower commissure is formed by the upper border of the superior constrictor of the pharynx, or by the angle between the two slips of this muscle.

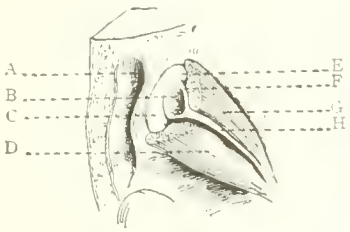

FIG. 9.—The same. The levator palati has been drawn tense in the backward direction which it occupies when the soft palate is raised as shown in Fig. 6. It now pushes the angular process of the cartilage upwards and backwards, encroaches upon the lumen of the fossa of Rosenmüller, and opens the tube. The anterior wall of the tube remains fixed. The increased circumference of the open tube is furnished by the elasticity of the tubal wall between the cartilage and the attachment of the salpingopharyngeal fascia. A—Fossa of Rosenmuller. B—Section of tube, opened. C—Cartilaginous portion of tube. D—Levator palati. E—Hamular process of cartilage. F—Membranous portion of tube. G—Tensor palati. H—Fascia between tensor and levator palati.

The apex of the fossa reaches nearly to the lower orifice of the carotid canal. The posterior wall is supported by the vertebral muscles. The depth of the sinus pharyngeus measured along its anterior wall averaged 18 mm. in twenty-five cases. The distance from the upper to the lower commissure aver-

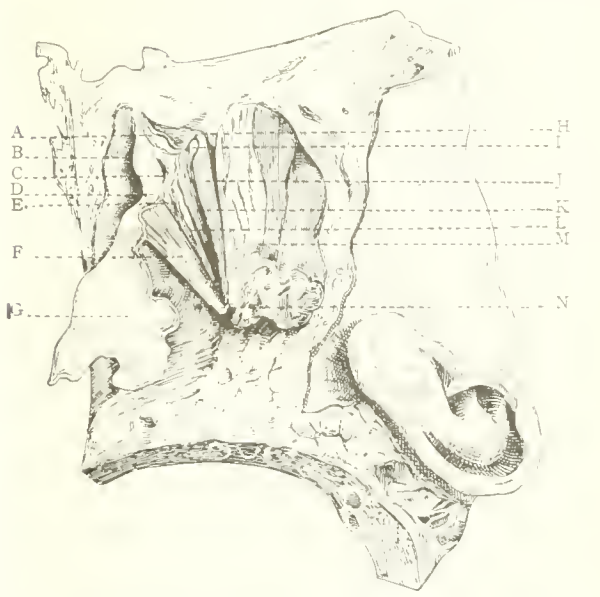

FIG. 10.—Similar specimen with more dissection of the structures at the floor of the tube. The two mouths are seen running parallel to the tube and between them the anterior wall of the tube; the attachment of the fascia and part of the lower border of the cartilage against which the levator palati rests. The thin, lower edge of the tensor is shown. A—Palatal portion of tensor palati. B—Fossa of Rosenmuller. C—Mouth of tube. D—Torus tubæ. E—Cartilaginous portion of tube. F—Levator palati. G—Soft palate. H—Tendon of tensor palati. I—Hamular process. J—Tensor palati. K—Membranous portion of tube. L—Attachment of fascia to tube. M—Internal pterygoid. N—Spinous process of sphenoid.

FIG. 11.—Similar specimen of the right side. The tensor palati is dissected and turned sharply outwards exposing its inner or posterior surface and showing the anterior wall of the tube free from muscle fibers, which in this case were not fastened to any part of the tube, but passed beyond it to their attachment at the base of the skull. A—Tensor palati. B—Cranial attachment of tensor palati. C—Membranous portion of tube. D—Levator palati. E—Soft palate. F—Sphenoidal cell. G—Fossa of Rosenmüller. H—Mouth of tube. I—Edge of cartilage. J—Torus tubæ. K—Angular process of cartilage. L—Fascia between levator and tensor palati. M—Basillar process of occipital bone. N—Condyle.

aged 26 mm. When the auditory tube was closed the width of the sinus averaged 11 mm.

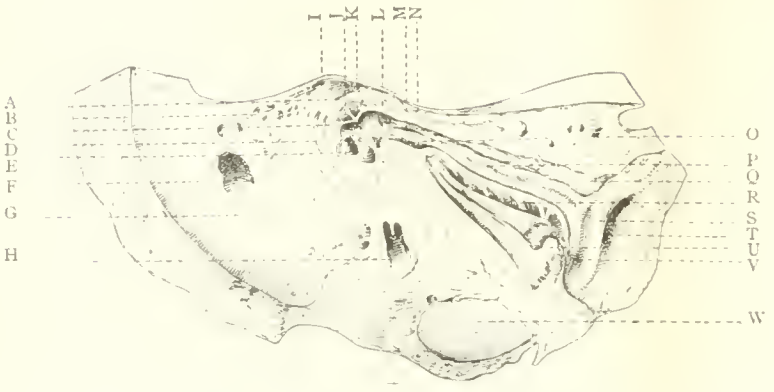

FIG. 12.—A nearly vertical section of the right middle ear tract. The inner posterior half of the Eustachian tube is shown with a concave wall. The levator palati muscle is seen below the tube. It has been lifted from its bed along the floor, the tube against the cartilage and show attachments to the cartilage. A—Canal for facial nerve. B—Mastoid cells. C—Pyramid. D—Facial nerve. E—Round window. F—Sigmoid sinus. G—Mastoid process. H—Internal carotid artery. I—External semicircular canal. J—Stapedius muscle. K—Oval window with stapes. L—Promontory. M—Crista falciformis. N—Canal for tensor tympani. O—Bony portion of tube. P—Cartilaginous portion of tube. Q—Cut section of cartilage. R—Fasciculus joining muscle to cartilage. S—Torus tubæ. T—Fossa of Rosenmüller. U—Levator palati. V—Angular process of cartilage W—Condyle.

Conclusion.—The physiological function of ventilating the tympanic cavity is accomplished mainly by the dilator tubæ or levator palati. The mechanism which allows the opening of the tuba auditiva is the backward pressure of this muscle on the angular process of the alar cartilage, which swings backward, upward, and inward on its superior attachment, dragging with it the floor of the tube and forming a triangular ostium.

Through the kindness of Prof. George S. Huntington, the author was allowed the privilege of completing these investigations in the Anatomical Laboratory of the College of Physicians and Surgeons of Columbia University.

LEPROSY IN THE PHILIPPINE ISLANDS AND THE PRESENT METHODS OF COMBATING THE DISEASE.*

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THERE has already been so much said and written about leprosy in the Philippine Islands that it is appropriate that I should ask your indulgence as I enter the ranks of the contributors to the literature on this subject. If it were not that much of the work which promises a solution for the leper problem in these islands was begun during the past year, and that the details have not yet become generally known, I would not have the temerity to write on this subject for a Philippine audience.

Considering the disease historically, in its relation to these islands, it may be said that the data are very meager, and that a careful search of libraries, both public and private, and of the official records fails to throw much light on the subject. Among the royal documents on file in Sevilla, for the period from 1500 to 1638, in Section 5, drawer 2, bundle 23, is a record that the King of Spain acknowledged the receipt of a communication from the Captain-General of the Philippine Islands, on June 8, 1632, in which His Majesty had been informed that one hundred and thirty-four "converted Christians" who had been sent over by the Emperor of Japan had arrived in Manila Bay. The King directed that the "converted Christians" should be received with a parade, and that in addition to the five hundred reales already set aside by the Captain-General for their reception, two hundred reales be expended for their maintenance. In a book by Felix Huerta, entitled "The Geographical, Historical, Statistical, and the Religio-Historical State of the Philippine Islands," Edition of 1865, page 67, it is stated that these people were lepers, and were taken to the San Lazaro Hospital. This statement finds confirmation in the "Ultima Pieza del Expediente Institudo sobre la Organizacion del Hospital de San Lazaro" (The Last Part of the Report of the Investigation Made Upon the Organization of the San Lazaro Hospital), dated 1823, which records that one hundred and thirty lepers who arrived from Japan in the year 1632 were admitted to the San Lazaro Hospital in that year. There is also on file at the office of the Bureau of Health a letter from the Honorable Goro Narita, formerly Japanese Consul at Manila, to the effect that he had referred the foregoing statements to his home government for investigation, and had received information that the most minute researches had been made to ascertain the truth of the allegations, but the matter had not been definitely settled by the investigation, although several records had been found in ancient writings respecting the deportation of Roman Catholic friars from Japan to Luzon, as well as of the expulsion of Japanese believers in Christianity who were afflicted with leprosy, but that these records did not agree as to dates and other important particulars with the statements under inquiry. He added that the opinion of the governing authorities was that no lepers had ever been deported from Japan for sanitary reasons, but that there might have been some among the Japanese Christians who were banished when the feudal system prevailed in the empire.

From the recorded data it is impossible to determine whether the disease existed in the Philippines prior to the coming of the Japanese Christian converts or not, but the fact remains that it is now here in all its loathsome characteristics and menacing dangers, and the great problem is, how to get rid of it.

Before the American occupation, it was not so much a question of eradicating the disease as it was one of caring for the unfortunate victims of the malady who were poor or had no friends to take care of them. The care of lepers was a matter of charity rather than legal proscription, and was controlled by the church authorities. This method of dealing with leprous patients left many at large to spread the disease without restraint. The excellent work of the charitable orders that engaged in this laudable cause should, however, not be undervalued. The self-sacrifice and devotion of the noble men and women who gave their talents and their energies to the alleviation of the condition of the poor victims of this loathsome disease will ever stand as a monument to the greatness and godliness of human character; but such a policy, while paving the way for something better, could not in itself be reckoned as a factor in the elimination of the

*Address delivered before the Philippine Islands Medical Association.

scourge. This feature of the work was not seriously undertaken until after American rule had been established. Almost at the very inception of the Civil Government, negotiations were set in progress by the Secretary of the Interior, which led to the setting apart of Culion Island for the purpose of establishing a leper colony and for the complete isolation and segregation, not of the poor and outcasts, but of all alike. This policy may seem cruel and heartless, especially to those who are directly affected by its operation, but it was hoped that the close proximity of the island of Busuanga, where the friends of the lepers might locate or at least find temporary abode, and from which they could make frequent visits to Culion, would do much to mitigate this objection. Isolation is for the best interests of all concerned, for the benefit of the patients and for the protection of the public. But, unfortunately, this is a case where the ends of science and sentiment diverge, and the policy is far from being popular in the Philippine Islands, especially when it affects the homes of the rich and influential. The Government is proceeding slowly and cautiously, with the full assurance that the wisdom of its course will soon be manifest to all.

A study of the history of the war waged upon leprosy during the past few centuries shows that isolation offers the only method which has been consistently successful in eradicating or at least greatly reducing the number of victims. Even now, at the very beginning, a study of the statistics of the Philippine Islands will show that leprosy has already decreased to the extent to which the policy has been put in practice. In the Philippines, for the year ended August 31, 1904, there were 3,623 cases; for the year ended August 31, 1905, 3,580; for the year ended June 30, 1906, 3,494; for the quarter ended September 30, 1906, 3,473, and for the quarter ended December 31, 1906, 3,225.

A study of the history of leprosy in Hawaii shows that until isolation was carried out the number constantly increased. In 1866 there were 105 lepers; in 1894 there were 1,341; in 1900, 1,023; in 1901, 942; in 1902, 915; in 1903, 874; in 1905, 858, and in 1906, 828. For the twenty years preceding 1900, isolation was not very rigidly enforced, and it was not until after American occupation that the practice began to be systematically carried out; the above figures show that the disease has declined rapidly since that time.

The present capacity of the Culion Leper Colony is about 800. The actual number on the island January 1, 1907, was 546. In addition to the above, 219 are segregated in the San Lazaro Hospital, Manila. The remaining are distributed throughout the various provinces as shown in the table.

Undoubtedly, the simplest and easiest method of stamping out the disease and protecting the public would be to segregate all lepers at the colony, but when it is remembered that it would require an outlay of about 50 centavos (25 cents U. S. currency) per capita per diem to maintain the colonized lepers, or about 800,000 pesos ($400,000 U. S. currency) annually, and that the entire receipts of the Government are only about P20,000,000 per annum, it will be apparent that the financial difficulties are practically insurmountable; therefore, it has been necessary to plan a campaign which would be compatible with the finances of the Government as well as meet the requirements of practical sanitation. Fortunately, the geography of the islands is such that a plan could be put into operation at once, which offers great hope of success from the very

Provinces	Race	No. of Males	No. of Females	Children		Single		Married		Widowers	Widows	Total
				M.	F.	M.	F.	M.	F.			
Abra	Filip'o	6	5	1	..	4	3	1	..	..	..	11
Albay	"	31	10	..	..	24	12	6	2	1	1	47
Ambos, Camarines	"	53	15	6	..	23	7	26	7	4	1	68
Antique	"	..	..	..	..	..	..	..	..	..	..	20
Bataan	"	11	6	1	..	6	1	2	..	2	3	17
Batangas	"	18	11	..	..	15	5	..	2	1	4	20
Benguet (1)	"	32	11	1	1	1	..	21	10	9	..	43
Bohol	"	78	55	5	3	34	30	35	12	4	1	133
Bulacan	"	27	15	..	1	11	9	14	4	3	2	42
Cagayan	"	48	40	2	1	18	16	25	17	3	12	94
Capiz	"	..	..	..	..	..	..	..	..	..	..	8
Cavite	"	43	24	3	3	27	15	19	5	3	1	97
Cebú	"	..	..	..	..	..	..	..	..	..	..	307
Culion Leper Colony (3)	"	355	191	78	36	187	85	87	54	23	16	546
Ilocos Norte	"	78	40	2	1	22	18	51	17	3	4	118
Ilocos Sur	"	149	86	11	5	74	46	47	26	17	12	235
Iloilo	"	..	..	..	..	..	..	..	..	..	..	6
Isabella	"	9	2	..	..	3	1	6	2	..	..	11
LaLaguna	"	14	11	..	2	7	4	7	3	..	2	25
Lepanto-Bontoc	"	15	4	1	..	5	1	8	..	1	3	10
Leyte (4)	"	34	24	2	2	13	9	17	8	2	5	58
Masbate	"	..	..	..	..	..	..	..	..	..	..	3
Misamis	"	55	24	4	..	30	13	19	6	2	5	79
Moro (1)	Moro	143	77	3	3	80	44	45	18	9	12	220
Negros, Occid'al	Filip'o	..	..	..	..	..	..	..	..	..	..	..
Negros, Oriental	"	..	..	..	..	..	..	..	..	..	..	10
Nueva Ecija	"	30	10	1	..	13	6	14	6	2	4	40
Nueva Vizcaya (1)	"	2	4	..	..	1	..	1	2	..	2	6
Pampanga	"	17	10	1	..	6	6	7	4	3	..	27
Pangasinan	"	51	32	..	2	19	8	25	15	7	7	83
Rizal	"	61	31	4	4	27	9	28	17	2	1	92
Romblon	"	..	..	..	..	..	..	..	..	..	..	..
Samar	"	143	115	..	1	43	50	74	43	20	21	258
Sorsogon	"	83	34	..	1	41	18	58	6	4	0	117
Surigao	"	2	1	..	..	..	..	..	..	2	1	3
Tarlac (4)	"	24	14	..	1	4	6	18	7	2	..	38
Tayabas	"	10	4	1	..	9	2	7	2	2	..	23
Union	"	30	17	..	..	11	8	18	4	1	5	47
Zambales	"	23	27	..	..	12	14	11	0	..	4	50
San Lazaro Hospitals, Manila	(2)	134	85	18	12	68	35	38	27	10	16	219
Total		1818	1053	145	76	823	480	761	334	145	154	3225

(1) Revised reports not received.
(2) Filipinos, 217; Chinese, 2.
(3) European, 1; Filipinos, 544; Chinese, 1.
(4) Leyte: Filipinos, 57; Chinese, 1. Tarlac: Filipinos, 37, Chinese, 1.

beginning. This plan consists in removing all lepers from those islands which are well isolated and at the same time have only a few victims, and subsequently, of removing all lepers from such islands as soon as the disease is detected. In this way a large amount of territory can be freed from lepers in a very short time, and by thus removing the principal sources of infection, there are good grounds for believing that the early disappearance of the disease will result.

The conclusion of the Germany Leprosy Conference of 1897, and also, more recently, that of Kolle and Black, was that the initial lesion is a small ulcer in the nasal mucous membrane. If this is true, it is quite possible that many of the cases in which the source of infection is so difficult to understand may be explained upon the hypothesis that they came in contact with lepers who were not known to have the disease. In order that the policy outlined above may have best hope of success, special attention is being given to this matter.

The islands of Mindoro, Masbate, Romblon (including Tablas and other islands of the same provincial government), Siquijor, Oriental and Occidental Negros, Panay, Palawan, and Cuyo are now practically free from lepers through the operation of this plan. At the very inception of this work, it became the fixed practice not to confine anyone at Culion from whom leprosy bacilli cannot be recovered and demonstrated by microscopical examination. In pursuance of this plan, it is worthy of record that a fair percentage of those who were reported to be suffering from leprosy, in the islands mentioned, were found to be negative on microscopical examination, and that by proper medical treatment many were cured of their ailments and re-

stored to society. If this same proportion is found to maintain in the remaining islands, the number of lepers will be much smaller than heretofore estimated and the solution of the leper problem will be far less serious than it has been supposed to be.

The question of a self-supporting leper colony and of lepers contributing to their support has received most careful attention, with the result that very little in this direction can be hoped for under the present conditions. In the majority of persons, the disease soon produces disabling deformities, with destruction of tissue, loss of fingers and toes, serious impairment of the nervous system, loss of muscular power, and general debility, and renders the patients incapable of performing the amount of manual labor which would be required in the operations necessary to support themselves in agricultural pursuits. They are precluded from engaging in manufacturing on account of the widespread prejudice against buying articles that have been handled by lepers, even though they may have been rendered safe by sterilization; then again, so many of the patients are confined to their beds, and the wounds and ulcers of others require so much attention, that a large proportion of the services of those who are able to work must be devoted to these duties, so that really very few are in position to give their time to profitable pursuits. Considerable work is also necessitated in the purely domestic duties, such as cooking, the making of clothes, cleaning and taking care of the houses, and in maintaining the streets, roads, and other public utilities in a state of repair.

The industry of cattle raising seems to promise better results than anything else that has been considered so far. The cattle could be shipped to Iloilo, Cebú, Manila, or other markets for slaughter, thus avoiding the prejudice that would naturally obtain against prepared products or manufactured articles. As cattle are not subject to the disease, and as they would not have to be handled by the lepers, there would probably be very little danger to the public in shipping them from the colony to noninfected districts.

The colony at Culion has been in actual operation since May 28, 1906, on which date 365 lepers from the San Lazaro Hospital at Cebú, which had been abandoned on the day before, were landed on the island. Four Sisters of Charity, belonging to the Order of St. Paul de Chartres, and a Jesuit priest, who were already at the colony, assisted in receiving the lepers, who were agreeably surprised and very much delighted with their new home, and expressed themselves as thoroughly satisfied with the provisions which had been made for them. After the novelty of their surroundings ceased to attract and divert them, many became oppressed with a feeling of homesickness, and yearned for the old familiar scenes to which they had been accustomed all their lives, but at no time did they find fault with the conditions at the colony.

The present colony consists of about 125 nipa houses, each of which is large enough to accommodate from five to seven lepers. These houses have been built with due reference to street lines, so that symmetry and uniformity add to the natural beauty of the "leper city." The new town is located on a plateau, the highest portion of which is about 150 feet above the sea level. This plateau slopes in all directions towards the sea, thus giving ideal drainage conditions. A pipe line about a mile long conducts water from a running stream to the colony, and in addition there is a reservoir into which water is forced from a spring by a gasoline water pump. This reservoir has been constructed at a height of more than 250 feet above the level of the sea, and from it water is conducted through a modern system of pipes to all parts of the town, and supplies the kitchens, halls, bathrooms, modern water-closets, and laundries. A complete sewer system with septic tanks, through which the sewage passes before it is finally conducted into the sea, has been installed.

The old town of Culion, which was purchased by the Government, has still a sufficient number of buildings standing to furnish a presidencia, or town hall, and residences for the presidente and consejales. The old stone church, built in Spanish times, is still in a state of good repair, and is used as a place of worship by the lepers. A band of forty pieces has been organized and frequent concerts are given.

The lepers are given the greatest possible liberty, and are controlled largely by regulations for which they themselves are responsible. They punish those who commit misdemeanors, in accordance with their own ideas of justice. The law-making power of the colony is vested in a presidente (president) and twelve consejales (councillors) who are elected by the people, while the police power is administered by twelve police who hold office by selection from among their own people. The police force, under the direction of the presidente, is charged also with the maintenance of proper sanitary conditions in the town, and with the arrest of offenders against the local regulations. A government could not possibly be more democratic than that which prevails at the Culion Leper Colony.

Quarters have been provided for the nonleprous employees at a distance of about a quarter of a mile from the colony.

In addition to attempting to combat the disease by isolation, a great deal of attention is given to every method of treatment that offers any hope of curing the disease. So far, the only treatment that has given any hope of success is the application of the *x*-ray. Encouraged by the results obtained with the Roentgen ray in the treatment of certain forms of skin diseases, and of lupus and cancer, the Secretary of the Interior and the Commissioner of Public Health, in 1903, decided upon the purchase of an *x*-ray machine, and the treatment of leprosy by this method was begun for the first time in the Philippine Islands, in January, 1904, by Dr. H. B. Wilkinson, the resident physician at the San Lazaro Leper Hospital. Dr. Wilkinson's method was to select those cases which presented the greatest amount of leprotic deposit, and expose the most afflicted portions of the body to the rays for ten minutes, at a distance of from seven to ten inches, the apparatus used being a ten-inch spark machine with a bifocal tube exhausted for a ten-inch spark; the distance and time of exposure being subject to such variations as were indicated by the individual peculiarities of the area under treatment, so as to approach as nearly as possible the burning point without actually inflicting injury. In only two cases was the process carried sufficiently far to burn the skin, and it is interesting to note that these two cases were the first reported as cured. In all, three cases were reported as recovered; of these, the first patient died a few weeks afterward of atrophic cirrhosis of the liver. Upon the completion of the autopsy in this case, Dr. Herzog of the Bureau of Science reported that the histological and bacteriological examination furnished no evidence that the

patient at the time of his death was suffering from leprosy, either cutaneous or internal. The treatment of the two remaining cured cases was interrupted for a long time on account of the breaking down of the machine and the necessity of sending to the United States for additional apparatus, which could not be supplied in Manila. Before the treatment could be resumed, the two cases relapsed, one about six months after the original treatment was stopped, and the other about nine months afterward.

The *x*-ray treatment is now in progress again, on a larger scale, and a report will be published when the data and results are sufficiently verified to justify definite conclusions, but it may be of interest to report here that one of the cases that was reported cured before, and which later relapsed, and in which leprosy bacilli were continuously found for a number of months, again, after treatment was resumed, at the end of three months, shows an entire absence of leprosy bacilli in the skin scrapings taken from regions in which they were previously found.

Since the American occupation, there have been only one American and one European known to have developed the disease. The cause of death is almost invariably some intercurrent disease; tuberculosis and beriberi being the most frequent causes during the present year.

The policy of the Bureau of Health aims at the segregation of every leper in the Philippine Islands, but until this becomes practicable the situation must be handled so as to secure the greatest amount of free territory possible in the shortest time. In the colony and elsewhere, lepers are entitled to every chance for their lives that science can give or suggest, and it is the aim and purpose of the present administration to secure to them every advantage that can possibly accrue from a systematic plan of action which has for its purpose the protection of the public, the alleviation of the suffering of the afflicted, with such chances for their lives as science can offer, and the ultimate eradication of the disease from the Philippine Islands.

In conclusion, it is submitted that whatever may be the views of well informed persons with regard to the communicability of leprosy, and however widely eminent medical men may differ upon his question, yet the incontrovertible fact remains that every leper who is capable of giving off leprosy bacilli to the media which surrounds him is at least one center of infection, and the utter hopelessness of successfully eradicating the disease so long as the exact mode of transmission is not conclusively proven, will be apparent to all. Prophylactic medicine should not be permitted to be turned by a few sentimentalists from its march to a goal which offers the magnificent victory of the eradication of this plague from the face of the earth, and the saving of hundreds of innocent human victims who are now sacrificed annually to this most loathsome disease.

MANILA, P. I

Contribution to the Study of Facial Hemispasm of Peripheral Nervous Origin.—Giuseppe Roasenda presents five cases of facial hemispasm of peripheral nervous origin. There is clonic spasm of the side of the face, of a subacute nature, without pain in the mastoid region. Electrical excitability is lessened, there being partial degeneration reaction. There is absence of response to external muscular stimuli, due to paresis of the muscles. The muscles are not painful, which distinguishes the condition from painful tic. These symptoms indicate a peripheral origin for the disease. The treatment should be moderate faradism of the side of the face.—*Rivista Neuropatologica.*

A NEW BLOOD TEST.*

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EXAMINATIONS for the presence of blood have recently increased in significance ever since Boas[1] reported the occurrence of occult blood as an almost constant symptom in carcinoma of the stomach. Usually the aloin or guaiacum test is employed for the demonstration of the blood.

Recently a new test with benzidin has been described by O. and R. Adler.[2] According to Schlesinger and Holst[3] it is made as follows: (1) A knife point full of benzidin (Merck's) is added to two c.c. of glacial acetic acid and allowed to stand. (2) A small piece of feces (about the size of a pea) is mixed with two c.c. of water and boiled in a test tube closed with cotton. (3) Ten to twelve drops of benzidin solution are added to two and a half to three c.c. of a three per cent. peroxide of hydrogen solution. (4) Three to four drops of the boiled fecal solution are added to reagent three. In the presence of blood a green or blue color results.

For the testing of stomach contents Schlesinger and Holst advise boiling the filtrate and proceeding in a similar manner as in testing the feces.

The guaiacum-aloin, or benzidin test, require the preparation of fresh solutions, which makes the test more difficult. I therefore have tried to simplify the test by making a reagent paper. I prepared an aloin paper and a benzidin paper. Aloin paper was made by saturating ordinary filter paper with a solution of aloin in seventy per cent. alcohol; the benzidin paper by moistening filter paper with a saturated solution of benzidin and glacial acetic acid, and drying it. In preparing the paper, as well as in making the test, it is of importance to avoid contact with the fingers, as a drop of perspiration causes a similar reaction. In handling the paper it is best to use an ivory tipped forceps, or protect the hand by means of a towel. Aloin paper is much inferior in sensitiveness to benzidin paper; I would, therefore, recommend the latter.

Mode of Procedure.—A piece of benzidin paper is immersed in the solution to be examined and a few drops of hydrogen peroxide are added. The piece of paper is placed on a piece of white porcelain and is examined for the development of a blue color. In the presence of blood a green or blue color arises in a few seconds to a minute.

Regarding the sensitiveness of the reaction it is greater, if we allow more time for its occurrence. In dilutions of 1 part blood to 500 parts of water a distinct reaction occurs in between thirty to sixty seconds. In dilutions of 1 to 2,000 a trace of blue occurs one to two minutes later. To wait longer for the reaction does not seem advisable, as after thirteen minutes the benzidin paper with hydrogen peroxide alone without blood will yield a blue color. For practical purposes it will be best to wait but one minute for the occurrence of the reaction. If after one minute there is no trace of blue, then the test must be considered negative.

In examining for blood in stomach contents too great a sensitiveness is not important, but rather a certainty that the test will indicate only blood. The longer we wait for the reaction the more substances besides blood may cause it. Benzidin paper can be used for testing for blood in stomach contents, urine, and feces. As all kinds of food may be

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met with in the stomach contents, I have examined various articles of diet with the benzidin paper:

Benzidin paper + coffee + milk + sugar = 0.
" " + coffee = 0.
" " + pea soup = 0.
" " + boiled peas = 0.
" " + prune juice = 0.
" " + prunes = 0.
" " + tea + sugar = 0.
" " + red wine = 0.
" " + milk after one minute = 0, after one and one-half minutes = trace; aloin negative.
" " + milk ether extract after one minute = 0; aloin negative.
" " + potato substance = + trace.
" " + water in which potatoes have been boiled = 0.
" " + farina boiled with milk (thick) = + (at once).
" " + farina boiled with water = + (at once).
" " + white bread steeped in water = 0.
" " + hard boiled white of egg = 0.
" " + hard boiled yolk of egg = 0.
" " + boiled chicken = 0.

Farina and boiled potato applied to benzidin paper in substance produce a reaction. Decoctions of potato as well as thin gruels do not react. Milk after one minute gives a trace of reaction. If, when testing, we take the liquid part of the stomach contents and do not use the firm substance, the occurrence of the above substances (farina, milk, potato) would hardly influence the reaction.

To study the action of HCl on the benzidin paper the following experiment was made:

Benzidin paper + 1 to 1,000 HCl solution after one minute = 0, after two minutes = trace (?), after three minutes + green color.

Benzidin paper + 1-10 normal sodium hydroxide solution after thirty minutes = 0.

Benzidin paper + water after nine minutes = + trace.

Benzidin paper + stomach contents free from blood after three and a half minutes = +.

We can see, therefore, that HCl may cause the reaction, usually only after two to three minutes. If, therefore, we want to use the benzidin paper in testing for blood, we must not wait for a reaction longer than one minute.

I have made comparisons between the result obtained by benzidin paper and that by the usual aloin ether extract. It was as follows:

I.

TABLE OF STOMACH CONTENTS EXAMINED WITH BENZIDIN PAPER ALONE, AS WELL AS THOSE EXAMINED WITH BENZIDIN PAPER AND ALOIN ETHER EXTRACT.

No. of Stomach C'nt'nts Exam'd	Benzidin Paper Test	Aloin Ether Extract Test
54	Negative.	Not made.
8	Positive.	Not made.
13	Negative.	Negative
13	Positive.	Positive.
2	Positive (strong).	Negative.
4	Positive (trace).	Negative.
2	Positive.	Negative.
2	Test with ether extract, negative	Negative.

II.

COMPARISON OF THE BLOOD TESTS WITH BENZIDIN PAPER AND ALOIN ETHER EXTRACT IN VARIOUS DISEASES OF THE STOMACH.

a. Functional Diseases of the Stomach and Catarrh of the Stomach.

No.	Benzidin Paper	Aloin
09	Negative.	Negative.
4	Positive.	Positive.
1	Positive.	Negative.

b. Organic Diseases of the Stomach.

Disease	No.	Benzidin Paper	Aloin
Ulcer of Stomach	2	Negative.	Negative.
	11	Positive.	Positive.
	1	Positive.	Negative.
Cancer of Stomach	1	Negative.	Negative.
	5	Positive.	Positive.
Stenosis benigna	1	Negative.	Negative.
	1	Positive.	Positive.

Although there was no absolute coincidence between the benzidin and aloin test (see Table I), yet in most cases the result was the same.

Table II shows that the stomach contents may very well be utilized for blood examinations for the purpose of diagnosis instead of the more generally employed methods of examination of the feces. The frequent occurrence of occult blood was found, as stated by Boas, in cases of ulcer and cancer of the stomach.

The benzidin paper test can be recommended as a preliminary test. If there is a strong reaction at once or no reaction at all, we may regard the result as reliable. If, after one minute only a trace of reaction is present, then the aloin ether extract method may be used. If we use the ether extract for the benzidin test it makes it more sensitive and certain.

In examining urine and feces for blood I have also made use of the benzidin paper. For urine it is not as sensitive as an aloin ether extract. Feces of people living on common foods usually gives the reaction. The stool of a patient on a milk-and-egg diet does not give the reaction, except blood be really present. The stool may be examined in the following manner:

A small piece of feces (the size of a pea) is rubbed up with about two c.c. of water, the benzidin paper is immersed; a drop of hydrogen peroxide is added, and it is examined for blue color. Several stools of patients that have been on a diet free from meat were tested with benzidin paper and for comparison with aloin ether extract and with one exception the same result was always obtained.

I do not hesitate, therefore, to recommend the benzidin paper as a convenient method of testing for blood of the stomach contents, the urine, and the stool.

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20 East SIXTY-THIRD STREET

Too Much Civilization.—The South African Native Affairs Commission reports that while the adoption of European clothing by the natives has promoted public decency it has injured the health of the wearers.

SOME EFFECTS OF SPIRIT AND DRUG TAKING ON THE UPPER AIR PASSAGES.*

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THE object of this paper is to point out some facts which have not been considered prominent in a study of the causes of the inflammatory conditions of the throat and nose. While specialists in this field are familiar with these factors in the causation, they have not given them the importance which they deserve, simply because they are not familiar with the modern research work concerning the effects of alcohol and drug taking. The theory that alcohol is purely a stimulant and in so-called moderation has little or no influence on the membranes or organs of the body, is considered a fact beyond question, hence no inquiries have been made to determine its correctness. The conclusions from modern research that alcohol is a narcotic and corrosive in its action, particularly on the membranes, will be new to the general profession, yet the evidence on which it is based is voluminous and exhaustive. The multiplicity of new topics and tremendous advances in all departments of medicines are not only confusing to the general practitioner, but frequently turn his attention away from matters along every-day observation, and only when they are particularly pointed out are they recognized. The effects of spirits and drugs on the upper air passages are very marked and common, and yet they do not attract attention. It is always a question whether these effects are due specifically to any one cause or combination of causes, or are the results of general conditions, one intensifying the other; thus low vitality, sudden changes of temperature, reflex irritations, and congestions in distant parts, may all combine to produce disturbances: (1) The direct irritant action on the bronchial, pharyngeal, and nasal membranes, with thickening, anemia, and congestion; (2) the reflex irritant action from gastritis and other disturbances and irritations to other parts; (3) organic changes and paralysis of nerve tracts, cirrhotic states of the liver, kidneys, and mucous membranes generally. In my experience of nearly thirty years in the constant study and care of spirit and drug neurotics, it is an exception to the rule to find persons who have used spirits and drugs that do not suffer from catarrah and subacute inflammations of the throat and nose.

It is always an interesting question whether these inflammatory changes preceded the spirit and drug taking as exciting and predisposing causes, or followed as a natural result. Many persons have a history of nasal and throat congestions due to direct irritation, followed by exhaustion and debility, for which spirits and narcotics have been found most agreeable remedies. Common examples are of persons breathing air containing irritants and exposed to great changes of temperature, who have found cocaine, morphine, and other narcotics to give great relief. This is quickly followed by an addiction and a distinct drug neurosis in the future. Other persons have bronchitis and inflammatory states of the throat which are treated by spirits covered up with syrups, and the narcotic effect is so pleasant that the drugs are continued. All specialists and general physicians understand that there are degrees of susceptibility to take on inflammatory states of the membranes of the throat and nose from very slight and apparently insignificant causes. There is present a feeble resisting power in the mucous membrane to any changes and irritations; this is frequently inherited and depends very largely on the defective nerve centers controlling these parts, as well as want of training, bad surroundings, bad diet, etc. The direct irritant effect from alcohol on the membranes is well illustrated by comparison with its effects on the surface of the hand or body. Placing a drop of alcohol on the surface, a sensation of chill and irritation which follows will be increased by more alcohol, until inflammation and destruction of the skin follows. This is an example of its action on the mucous membrane of any part it comes in contact with. This is due specifically to its rapid water-absorbing properties, abstracting the moisture from the tissues with such rapidity as to give a sense of chill, followed by irritation, and finally ending in inflammation. These effects are noted in alcohol taken as a beverage in any form and the sense of irritation and burning in its passage over the mucous membrane is due to its water-abstracting property. Water is used before and after spirits are taken to overcome the sensation; the more pronounced the irritation, the greater the amount of alcohol. It will be readily understood that the frequent and continuous use of spirits, producing a constant irritant action of a greater or less degree, is a direct cause of inflammatory states of the membrane. Clinical observation confirms this, not only by examinations of the throats of drinkers, but the changed tone of voice indicating thickening and changes of the vocal cords. In chronic cases, both the bronchial and nasal tones are pronounced, the carrying properties of the voice are markedly lowered, and its volume is diminished and replaced by harsh, jerking, indistinct sounds, and even beer drinkers who sing bass lose their power of control and the tone becomes broken and harsh.

Leading singers quickly discover that alcohol and tobacco seriously impair and finally destroy their vocal powers. We shall show that these effects are due to both local and constitutional changes in the blood-vessels and nerve filaments and absorbents. It will be new to many persons that the congestion of the face so common in spirit takers is an exact duplication of what occurs in the membranes of the brain and mucous surface of the throat and nose. One with an intensely red or pallid face, showing hyperemia or anemia, has deranged capillary circulation of all the membranes, particularly those rich in blood-vessels. The vasomotor paralysis of the facial nerves diminishing the contractile power of the arteries on the face is the same in the throat and nose. A recent German writer has declared that "this palsy is followed by varicose states of both veins and arteries in the membranes of the throat and nose, accompanied with fibrinous deposits and exudations." The supposed stimulant action of alcohol is found to be an irritant and a paralyzant, and also a narcotic. It is a chemical irritant absorbing the water from cell and tissue. The flushed face of the spirit drinker is simply palsy and narcotism of the vasomotor centers regulating the circulation and the contraction and dilatation of the walls of the blood-vessels. The heart is greatly increased in activity by the use of spirits; more blood is sent to the surface, but with it comes the diminished contractile power of the nerves to force the blood back again, hence the forcing of the blood to the surface distends the blood-vessels and de-

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ranges the circulation more and more with each repetition until permanent degeneration follows. The whole capillary system of the membranes of the brain, upper air passages, and face is disturbed, deranged, and diseased. Drugs which produce anemia or blanching and diminution of the flow of blood in the vascular structures are followed by the same results. The nutrition suffers from this profound derangement and the metabolic processes are interfered with. The toxins and waste products are retained and form new centers of irritation.

Elimination is checked and suppressed. The mucous membrane of the throat and nose is very vascular and abundantly supplied with arteries, veins, and nerves, and hence suffers more directly from this cause. This is evident by the increased secretion of water and mucus. After a time the flushing of the face by the use of spirits becomes permanent and the walls of the arteries are hypertrophied, and the nerves atrophied. The mucous membranes suffer in the same way. In constant spirit drinkers the burning sensation of the throat becomes less and less, and strong spirits produce only slight sensations. Hypertrophy of the membranes and mucous exudations with subacute inflammatory states follow, then come bronchial coughs and distressing irritations of the nose and throat, resisting all ordinary treatment. In many instances these conditions are regarded as premonitory symptoms of tuberculosis and are treated with spirits, morphine, cocaine, and other narcotics. Dr. McKenzie of London remarked long ago that "it was comparatively easy to cure bronchial and nasal inflammatory states in persons who abandoned all use of alcohol or narcotics, but unless this was done the disease would continue almost indefinitely." The changes in the voice are very significant symptoms of both the inflammatory conditions of the nose and throat and their influence on the vocal cords. Good judges assert that it is possible from a study of the voice to determine the health or disease of the membranes, and also that there are certain peculiar sounds which distinguish the spirit drinker from the opium or cocaine taker. In a general way the spirit drinker has a rasping, explosive echo, while the drug taker has a tremulous, soft, muffled tone of voice. It is very evident in a singer, in whom tobacco and spirits sharpen and ruffle the timbre and volume of the tone. A tenor singer invariably exhibits the use of spirits or tobacco by his inability to sustain high or continuous notes, and by his constant tendency to sharp the notes. Some very interesting studies have been made with a phonograph to show the change of the voice and improvement following total abstinence in persons who have chronic inflammatory conditions of the throat and nose. The patient talks into the phonograph at different times, pronouncing sentences, or singing bars: the notes, volume, and timbre of the voice are thus accurately recorded. Defects of the senses, particularly of taste, smell, and hearing, following these inflammatory states of the membranes, offer a most fascinating field of study, because the changes and variations can be noted with a degree of exactness: also perversions of sight and mental changes due to these inflammations are of intense interest.

Many of these conditions are physiological variations, not only local but constitutional. There are now certain conditions and effects which may be considered positive from the amount of evidence on which they are based, thus the constitutional action of alcohol, not only as a vasomotor paralyzer, but as a disturber of nutrition, is continuous. The result of capillary congestion and anemia is diminished osmosis between the veins and arterial capillaries, associated with defective oxygen-carrying properties of the blood, and accumulation of carbon and fibrinous deposits. The blood corpuscles are shrunken and deranged and do not take up oxygen from the lungs freely, as is readily seen in examination of the blood of persons who are using spirits. In the blood currents the red corpuscles are diminished in exact proportion as the system becomes saturated with spirits. The phagocytes are shriveled and diminished, the hyperemias and anemias can be traced, not only in the blood counts but in the blood-cells. Another fact equally well established is that vascular congestion and defective circulation due to alcohol are always followed by accumulation of toxins, which form deposits and foci for the development of inflammatory states, and with this there is diminished power of resistance and ability to neutralize and throw off the germs lodged on the surface. Another fact is that alcohol coming in contact and carried by the blood vessels to the capillaries has a special corroding action on the cells and dentrites, not only because of its water-absorbing properties, but also by its union with the granular matter of the cell. Another fact which has not been noted is this, that when the system is saturated with spirits to a degree it is exhaled from the lungs as vapors and spirits, the mucous membranes of both throat and nose suffer directly from its irritant action. This point of saturation is not confined to local congestions of any one part of the body, but extends to all the organs, particularly the liver and kidneys. Its action is both corrosive and erosive of the dentrites, cells, and tissues, and is to all intents and purposes a veritable neuritis. Recently we have recognized that the so-called rheumatisms and pains, both local and general, in the extremities, in persons who use spirits, are due to inflammations of the nerve extremities, and are literally neuritis; also that many of the conditions termed la grippe, malaria, biliousness, and other derangements associated with chills, fevers, and exhaustions are purely toxemic. The poisons from alcohol and other irritants have concentrated on the nerves of the extremity as well as in the degeneration of the nerves of the mucous membrane, checking elimination and practically encouraging states of disease and inflammation.

The influences so prominent at this time of the year are very pronounced and intractable in the spirit and drug taker. Sir William Barlow declared that "alcohol was the largest factor in the production of la grippe and chronic catarrhs of the throat and nose, by deranging the capillary circulation and destroying the nutrition and vitality of the nerve cells." The periodic drinker, who uses spirits to excess, then abstains, recovers in some degree from the damage and immediate effects of spirits, but the continuous user of wine, or beer, or other spirits, in so-called moderate doses, has always pronounced throat and nose affections. It may be of a minor character, and not attract much attention at first, and is treated by home or proprietary remedies, but later, when the inflammatory conditions become chronic, degenerations and growths follow, and also ulcers and distinct local inflammatory conditions. When the spirit is removed the improvement is so marked as to prove beyond question the intimate relation as cause and effect between the alcohol and these disorders.

Probably one of the most dangerous and seductive drugs is cocaine, which has come into very common

use, both medically and surgically, for its analgesic action. Its value depends on its sudden paralysis of the nerve-fibers and capillary blood-vessels, producing pronounced blanching and anemia. The sensory fibers are suspended first and the walls of the blood-vessels are paralyzed, the blood is driven out, and then the motor nerves are checked and slowed up. When this action passes off there is an intense vascularization and secretion of water and mucus and a degree of irritation that calls for a repetition of the drug. It is asserted that this action is due to the chemical combination of the drug with the plasma and cell contents, suspending their action at once, and this is reflected to the brain and spinal cord. Later as an irritant, and still later when the amount is large and the use continues, the effects are noted by peculiar hallucinations; this paralyzing action becomes cirrhotic, the walls of the blood-vessels retract and become varicose, nutrition is lessened, and degeneration of a corrosive nature follows. The blanching of the face is palsy of both the constrictors and dilator nerves. All sensation is cut off and this condition of the membranes of the nose is followed by a deceptive sense of comfort. The drug is literally a narcotic, suspending nerve activity and nutritional force. After a time this derangement extends to the higher cerebral functions and becomes a neurosis of the most dangerous and seductive character. Constant erosion follows, which is concealed and covered up. Cocaine prescriptions for diseased conditions of the throat and nose have proved very useful and valuable remedies, but they must be given with care and discretion. The paralysis resulting from the constant use of this drug in the nasal passages extends down to the throat and larynx. And the changed tone of the voice registers this inflammatory condition. The hearing is also affected, and profound anemia of the nasal passages is often a symptom of the use of this drug. It should be remembered that many persons take this drug secretly, but after a time the mental and other symptoms betray them.

Tobacco is another irritant and narcotic to the upper air passages. Like cocaine, its effects are direct and in chronic conditions, where the system is thoroughly infected, it is an active cause of disease of these membranes. One of the worst forms in which it can be used is the cigarette, and this is due specifically to the combustion taking place in close proximity to the mouth, where all the gases and products come in immediate contact with the mucous membrane. In the case of the pipe and cigar, many of these poison products are condensed and deposited in the stem of the pipe and body of the cigar, and only a small part is carried into the mouth. In the cigarette, when the smoke is inhaled and driven through the nose, its action is direct and cumulative. The nicotine and other products are corrosive and irritating, not only to the terminal nerves, but the capillaries, and these poisons are absorbed and carried to all parts of the body. The injury not only disturbs the surface circulation and the osmotic and metabolic changes, but it destroys nutrition and produces states of local starvation. The cigarette smoker has both anemia and hyperemia of the mucous membrane of the throat and nose. He complains of catarrh and defective smell and change of voice, and his nerves become hypersensitive. By inhalation small quantities of smoke and other products are more thoroughly absorbed than if the quantity was larger and the smoking more rapid. There are various degrees of resistance to the poison of tobacco, but the effect of its continuous absorption is marked, not only on capillary disturbances, but on the nerves and brain sooner or later.

Morphine and other forms of opium have no specific direct effect on the upper air passages, except that of a narcotic, and these effects are followed by anemia and general pallor of the face and eyes. The senses are diminished and low forms of subacute inflammatory states of the membranes follow. They are thickened, and fibrinous deposits come on. The control of the voice is weakened and general conditions of exhaustion appear. Other drugs have a similar effect, only more pronounced, on the constitution.

In my particular work very marked changes are noted in the disappearance and practical relief from long-standing catarrhs and chronic inflammation of the throat and nose by abstinence from spirits. I have noted a number of cases of bronchial troubles supposed to be tuberculosis occurring in moderate drinkers. Removal of spirits, nerve rest, and constitutional remedies are often followed by recovery. A number of persons in these times of stress and strain who are secret spirit and drug takers, and who suffer from throat and nasal troubles, are the subject of much anxiety to both physicians and friends. When their real trouble is discovered and the drugs removed, the obscurity of the case clears up. One is greatly impressed with this fact by the number of persons supposed to be temperate who have decided disorders of the voice and who frequent the specialist for conditions that are very ill defined. Efforts to give relief by catarrhal remedies are unsuccessful, and a great variety of causes are considered as active, together with degrees of debility and general feebleness. Such persons go to sanatoriums and recover; in reality they have become abstainers, and the degenerative action of alcohol has been removed. There can be no doubt that rhinitis and bronchitis may precede tuberculosis, and the result of efforts to check these inflammatory states and prevent their so-called passage downward is of great uncertainty, unless the general constitutional condition of the person is known and treated. The general fact is coming more and more prominent, viz., that the effects of alcohol and drugs, taken either openly or secretly, in small or large doses, falls most heavily on the capillary circulation; this derangement predisposes to the growth and development of bacteria, and with this a diminution of the resisting forces of the body; these all form a chain of causes that should never be overlooked or misunderstood. I conclude with the statement made some years ago by the late Dr. Gross of Philadelphia. "The upper air passages reflect the damage of alcohol and tobacco, and should always be considered in a study of inflammations of these parts."

Surgery of the Biliary Passages.—Lejars considers choledochoenterostomy a makeshift among the various methods for exploration and drainage of the chief biliary passages. In one of his own cases, in which he had intended to perform cholecystenterostomy, he found the gall-bladder so small and retracted that he was not able to make the desirable anastomosis with the intestine. He consequently did a choledochoenterostomy. Although the patient seemed to improve, he died three days later. Lejars believes that this operation should be employed only as a last resort when nothing else can be done. In a case of old obstruction of the ductus communis choledochus, Lejars had recourse to duodenotomy. The result was excellent, the circulation of the ductus communis choledochus being reestablished. Since his last report of three cases, this operator has added to the list three more cases treated according to Kehr's method. In these six cases recovery took place.—*Gazette des Hôpitaux Civils et Militaires*

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RECENT ADVANCES IN OUR KNOWLEDGE OF SYPHILIS.

THE theory of syphilis established by Ricord and his school long remained unchallenged, but in the last few years many discoveries have been made which have greatly modified our conception of this disease. Mehler, writing in *Die Umschau* of March 16, 1907, briefly summarizes some of the more important work which has been done in this line. Experience had proved that syphilis is a contagious disease, communicable by direct contact, but the germ of syphilis remained unknown until Schaudinn and Hoffmann identified it, a few years ago, as a very thin filiform protozoon, *Spirochæta pallida*. This organism has been found in so many cases that there is now little doubt that it is the cause of the disease. Greff, a Berlin oculist, after producing syphilis in the eye of a rabbit by inserting a fragment of a syphilitic inguinal gland, found the spirochete in the rabbit's eye before any visible morbid change had occurred. But with the gradual accumulation of white blood corpuscles the germs diminished in number and ultimately vanished. This is a striking confirmation of Metchnikoff's theory of the agency of phagocytosis in the prevention of disease.

Now, although the spirochete can usually be found, without difficulty, in the primary and secondary stages of syphilis, its occurrence in the tertiary stage was not proved until very recently. Doutrelepont of Bonn has, however, found the protozoa, though in small numbers, in four cases of tertiary syphilis. Finally, in inherited syphilis, the spirochete has been found, both in the child after birth and in the fetus, in almost every organ, though chiefly in the liver, stomach, and intestine.

According to Ehrmann of Vienna, the germs spread from the focus of infection along and even through the nerves. This is an important discovery, which appears to confirm the current attribution of certain serious nervous diseases to antecedent syphilis, and as it is reasonably certain that the spirochete, like typhoid and many other bacilli, may remain in the organism for years in a latent state, we find here strong support for the view that tabes, at least in some of its forms, is a product of the syphilitic virus.

Next in importance to the discovery of the germ is that of the communicability of syphilis to monkeys. Neisser, in particular, has experimented on a large scale in Java and produced symptoms very similar to those of human syphilis in all species of monkeys and apes, the closest approximation to the human disease occurring in the highest species. Last year (1906) Neisser and others finally succeeded in inoculating monkeys with tertiary syphilis. Recent tertiary growths, in which suppuration had not occurred, whether appearing late or soon after the primary infection, produced typical primary syphilis in monkeys to which they were transplanted. The inoculation was not always successful, doubtless owing to the relatively sparse occurrence of the spirochete in tertiary syphilis.

In the light of these experiments every person showing even tertiary symptoms must be regarded as a possible source of infection. The primary and secondary products, however, are particularly dangerous, because they contain greater numbers of germs, occur on the genitals and mucous membranes of the mouth, and often present a harmless appearance. Inherited syphilis can also be transmitted by inoculation and the nasal mucus of syphilitic children is particularly virulent. Hoffmann has also apparently proved, in contradiction to current opinion, that the blood of recently infected patients is a source of contagion. From all this follows the extremely important conclusion that syphilis is contagious in every stage and type, and that every organ of a syphilitic person may harbor the germs of the disease.

It was formerly believed that a person who has once had syphilis is henceforth immune to the disease and that this immunity is shared by children of syphilitics, even if they have not inherited the disease—a reversal of the law that the sins of the fathers shall be visited upon the children, but this last assumption has long been disproved by the frequent occurrence of syphilis, acquired by contagion, in children of syphilitics. The supposed impossibility of a second infection has also proved illusory in numerous cases, although repeated infection is still regarded as exceptional. Recently, however, so many cases have been reported by competent observers that we can no longer speak of permanent immunity produced by a first infection. Finger and Landsteiner assert that a second infection is possible even before the first attack is cured. This second infection is not necessarily followed by the primary symptoms which it would have caused in a previously healthy subject, but rather by an aggravation of the symptoms already present as a result of the first infection. If the patient, therefore, is already in the secondary or the tertiary stage, the fresh infection simply increases the secondary or tertiary symptoms. This view, however, is disputed by some authorities.

Although these discoveries have thrown much light on the origin and nature of syphilis, they have suggested little in regard to treatment, except to indorse most emphatically the classical method. Mercury still remains the sovereign remedy for syphilis. Every attempted serum treatment has failed. Mercury alone is able to influence the disease in every stage, probably by paralyzing the spirochete. But it must be remembered that the administration of mercury simultaneously with the introduction of the germ does not prevent the outbreak of primary syphilis, although recent experiments would seem to show that the hope is not

without foundation that an effective serum will yet be discovered and that the cure of syphilis, as of other diseases, will ultimately result from the discovery of its germ.

THE TREATMENT OF CAISSON DISEASE.

The disease known by this name is not often seen by the general practitioner, yet it is of considerable interest, as the march of improvement has provided more opportunities for its occurrence. Caisson disease is met with in those who work in compressed air at pressures greater than the normal fifteen pounds to the square inch, and is believed to be due to the presence of gas emboli in the circulation. The liability and frequency of this condition make it necessary to institute the proper prophylactic measures in every undertaking where caissons are employed as part of the construction work, and these precautions are directed primarily to the physical character and condition of the men employed. The thoroughness of this examination may be appreciated from a recent article on the subject by Pelton (*American Journal of the Medical Sciences*, May, 1907), in which it is stated that the candidate's previous history with regard to ophthalmic, nasal, aural, rheumatic, cardiac, pulmonary, hepatic, renal, and venereal conditions and cranial injuries, is carefully inquired into. Observation has shown that the Anglo-Saxon and the negro are less subject to the evil effects of air pressure than are Italians, Poles, and men of other races. It seems to be very important to accustom the intended worker to the increased air pressure gradually. This is done by putting him in a pressure of from twenty-five to thirty pounds for a time and then submitting him to a second examination. Even if accepted for this work, the men must observe especial precautions, in which they are carefully instructed. The change from the caisson to the outer air must always be gradual, and proper living in the intervals of work must be insisted on. Four types of caisson disease can be distinguished, which are termed bends, staggers, paralytic, and comatose states, but no distinct lines can be drawn to differentiate these groups, the symptoms of which are often closely interwoven.

In the treatment of this so often fatal disease the first step is recompression of the patient—that is, he must be again subjected to the influence of compressed air—and this is accomplished in a specially constructed chamber called the hospital lock. In the milder cases this is usually sufficient to produce relief from the pains, although the process may be aided by the application of various counter-irritant measures. Analgesics, including antipyrin, codeine, and morphine, may be necessary, although aside from recompression little can be done in the way of specific treatment In the severer types, symptomatic treatment is indicated, particularly as regards stimulation of the heart and respiration. The after-treatment is also very important, and in addition to the general tonic measures the paralysis requires the routine measures applicable to the chronic stage of peripheral neuritis. It will be seen therefore that the treatment of this condition, which so long as the present methods of constructing certain engineering works are in vogue will be constantly met with, is now fairly well understood. The dangers connected with caisson work will not be correspondingly diminished unless the workers can be made to appreciate properly the necessary precautions, and this is apparently something which the human mind, as exhibited in many of the workmen, can only be made to realize with difficulty. We have had numerous reports of fatal accidents in compressed air workers which were distinctly due to carelessness on the part of the workers or those directly responsible for their welfare, but as we are now sufficiently well acquainted with the conditions, excuses for their occurrence cannot well be tolerated.

THE CAUSE OF SUBCUTANEOUS HEMORRHAGES.

Among the pathological conditions of which our knowledge is still very unsatisfactory are the hemorrhagic lesions associated with certain forms of septicopyemia, purpura, and a number of dermatoses, erythema nodosum among them. It has been assumed that these phenomena are the local or distant effects of some irritant, but whether of bacterial or other origin has never been satisfactorily ascertained. Naturally enough, the attempt has been made to reproduce these lesions in animals by the injection of bacteria or their toxins, but thus far no definite result has been obtained. The most recent study is made by Heyrosky (*Wiener klinische Wochenschrift*, No. 9, 1907), who used in his experiments sterile filtrates of bacterial cultures, and by inoculation in white mice produced hemorrhages under the skin and mucous membranes. For the purpose he employed glucose-bouillon cultures of *Diplococcus pneumoniæ* and *Streptococcus mucosus*, two varieties which are believed to be closely related in a biological sense. Within twelve hours after the subcutaneous or intraperitoneal inoculation of the filtrate the mice showed a localized hemorrhagic exanthem over the parts thinly covered with hair, while the more thickly covered parts were entirely free from this lesion. They were also affected with a more or less bloody diarrhea. The majority of the animals, which had received but one injection of from 0.2 to 1 c.c., recovered; when a second injection was given the mice either died or, in a number of cases, survived and resisted further injections.

Autopsies showed extensive minute hemorrhages in almost all the organs of the body, although those in the skin, the lungs, and the rectum were the most marked. Cultures made with the blood from these animals remained sterile, and staining of the tissues with methylene blue or the Gram-Weigert failed to show the presence of any bacteria. The report of the histological examination of the specimens is reserved for a later communication, but the preliminary statement as to the possible specific toxic character of this hitherto obscure disease is to be regarded with considerable interest. If proved to be true, it will not be long before an attempt will be made to place the treatment of the condition upon a more satisfactory and rational basis, the possibilities of which are indicated by the explanation of the etiology of the disease.

The Treatment of Frost Bite by Artificial Hyperemia.

While the number of plans of treatment recommended for the relief of the immediate and secondary results of the local action of excessive cold is very large, it must be confessed that they still leave much to be desired. It has been the object of some of these measures at least to reduce the venous stasis that forms so prominent a feature of the clinical picture of pernio, but according to Ritter (*Münchener medizinische Wochenschrift*, May 7, 1907) this vascular condition is to be looked upon as being a conservative process. In local freezing both arterial and venous hyperemia have the same object, that is, to protect the frost-bitten tissue with more blood and to assist regeneration of the injured cells. The stage of stasis is always preceded by a period of anemia, and the hyperemia is a curative effort. Ritter has employed artificial means to augment this natural hyperemia in about one hundred and fifty cases of freezing of various degrees of intensity, and recommends the method as being superior to all others. Two methods are used, passive congestion by means of Bier's bandage and the use of the hot-air chamber. While the author thinks highly of the former procedure, he states that he considers the hot-air treatment the best of all, especially for chronic cases. Usually daily sessions increasing in duration from fifteen minutes to one hour are given, and cures of even extensive lesions about the hands are to be expected in from three days to two weeks. The effect is said to be especially beneficial in promoting the healing of chilblains and ulcers, and great relief is afforded from the itching that is usually complained of by patients of this class. One drawback that would seem to attend this plan of treatment is the demands on the time of the physician that it entails, but the lesions of frost bite, while not ordinarily dangerous to life, are often incapacitating and well worthy sacrifices on the part of the patient and medical attendant for their relief. One especially valuable feature of the treatment is said to be the fact that it relieves the affected parts from the heightened susceptibility to cold that ordinarily persists for years after the original freezing.

Sea Air in the Treatment of Neurasthenia.

The value of climatic factors in the treatment of the disease indicated has been frequently disputed, mainly on account of the uncertainty of the results obtained, and idiosyncrasy has apparently been nowhere more marked than in this respect. In a recent article on this subject in the *Neurologisches Zentralblatt*, No. 14, 1906, Ide acknowledges that sea air has a two-fold action on the nervous system, as it may act either as a sedative or a stimulant. The sedative effect resides in the quality of the sea air itself, which provides in the first place for an equable and uniform evaporation of heat and moisture from the body, and in the second place stimulates the oxygen absorption. The latter, by increasing oxidation, naturally aids the excretion of various intermediary metabolic products which have an influence in bringing about certain neurasthenic symptoms. A stimulating effect, on the other hand, is produced by the physical properties of the sea air. Among these is the wind, and, further, the fact that, owing to the readier conductivity of the sea air, the warmth generated by the body is more quickly dissipated. These factors exert, however, a tonic effect on the system, and if the individual is too weak, or if the stimulus is too strong, the sedative is subordinated to the stimulating action, and the result is unfavorable. The essential point in the treatment, therefore, is properly to equalize the sedative and stimulating factors. The former may be brought out by rest cures, the latter by a gradual but methodically increased sojourn in the open, in the wind, and along the shore. It would appear, therefore, that with a sea-shore climate we can at will produce a sedative or a stimulating effect on the nervous system and at the same time favorably influence tissue metabolism.

Dissecting Puerperal Metritis.

Although puerperal infections are fortunately declining in frequency, severe types of the condition are still encountered. One of the more unusual forms is that known as dissecting metritis, and Offergeld (*Deutsche medizinische Wochenschrift*, May 9, 1907), as the result of an analysis of sixty-three reported cases, describes it as being a destructive uterine infection in which, in consequence of the necrosis of the deeper layers of the uterine wall, the dead tissue is cast off in a continuous membrane reproducing the form of the interior of the organ. It is the result of a coccal infection in which the organisms penetrate deeply into the substance of the muscle, and by virtue of great virulence cause extensive death of tissue. The symptomatology of the condition includes a progressive enlargement of the uterus beginning shortly after delivery, and accompanied by a moderate degree of fever. The pulse is very rapid, but is characterized by a better quality than is that of sepsis. The lochia are fetid, uterine tenderness and evidences of peritoneal irritation increase, and finally, in the course of the fourth week, the gangrenous tissue is cast off. The prognosis is bad, one patient in four succumbing, and, even if death does not follow, the uterus is usually so seriously damaged as to be incapable of functionating, and, owing to the stenosis of its lumen that is likely to result, hematometra and hematosalpinx are common sequels.

News of the Week.

Dr. Wm. Kelly Simpson will give a clinical lecture on "Intubation of the Larynx" in the amphitheatre of the Vanderbilt Clinic on Monday afternoon, June 10, at 4 o'clock, in connection with the exercises celebrating the one hundredth anniversary of the College of Physicians and Surgeons. Members of the medical profession are cordially invited to attend.

New York State Board of Medical Examiners.—The Board of Regents has appointed the following as members of the new State Board of Medical Examiners provided for by the consolidation of the three former boards: Drs. W. W. Potter and Lee H. Smith of Buffalo and W. S. Searle of Brooklyn for terms of three years; Drs. W. S. Ely of Rochester, Eugene Beach of Gloversville, and Floyd M. Crandall of New York City, for two years; Drs. Frank W. Adriance of Elmira, Floyd S. Farnsworth of Plattsburg, and Ralph H. Williams of Rochester, for one year. The Board of Regents elected Dr. Maurice K. Lewi of New York City, the present secretary of the joint medical boards, as secretary of the new medical board. Four members of the board are regulars, three are homeopaths, one is an eclectic, and one is an osteopath.

Public Health and Marine Hospital Service Examinations.—A board of officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, Washington, D. C., on July 15, 1907, for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service. Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination, as vacancies occur in that grade. Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. When quarters are not provided, commutation at the rate of thirty, forty, and fifty dollars a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service. Further information may be obtained by addressing the Surgeon-General, Public Health and Marine Hospital Service, Washington, D. C.

Civil Service Examinations.—The State Civil Service Commission will hold examinations on June 29, 1907, for the position of physician, sixth grade, regular school, State and County Hospitals and Institutions, with a salary of $900 and maintenance. The last day for filing applications is June 22. Full information and application forms may be obtained by addressing Mr. Charles S. Fowler, the Chief Examiner of the Commission at Albany.

To Restrict the Spread of Rabies.—At last week's meeting of the Board of Health it was decided to urge the Board of Aldermen to pass an ordinance giving the police authority to shoot all dogs without muzzles or collars found at large in the city, and to prosecute all persons suffering such dogs to roam at large.

Hospital Transfer Bill Passed.—Both the Senate and Assembly have passed over Mayor McClellan's veto the bill making the transfer of seriously ill patients from one hospital to another a misdemeanor punishable by a fine of $100.

A New Measure for Identification.—M. Bertillon, the Chief of the Intelligence Department of the Paris detective service, has introduced a new feature into his system of measurements of criminals by the aid of which the identification of suspects may be facilitated. It consists of a specially constructed piece of photographic apparatus, by means of which accurate measurements to scale of the prisoner's features may be obtained and recorded. In this great importance is attached to the measurement of the distance from the outer canthus of the eye to the external auditory meatus.

Medical College at Manila.—A medical school that is designed to be the first college of a future University of the Philippine Islands is shortly to be opened in Manila. The Philippine government has appropriated the sum of $62,000 for the first year's expenses, and a building formerly used by army engineers is being remodeled and equipped for this purpose.

Incoming Steamers Quarantined.—The liners *Kroonland* and *Statendam*, from Antwerp and Rotterdam respectively, were retained at Quarantine on account of the presence of smallpox and typhoid fever among the steerage passengers. All of these were transferred to Hoffman Island and the steerage quarters were fumigated before the vessels were allowed to dock.

Quarantine Against Havana.—The United States Marine Hospital Service has imposed a quarantine against Havana to be effective throughout the Gulf States.

Meningitis in Glasgow.—None of the medical or nursing staff of the Glasgow City Hospital have contracted cerebrospinal meningitis during the recent epidemic, although for weeks they had very large numbers of such patients under their care. Dr. Chalmers, the health officer of the city, as the result of an investigation of the question, has come to the conclusion that infection usually takes place through the nasopharynx and that the practice of promiscuous kissing, especially of infants and children, should be discouraged.

Berlin's Declining Birth Rate.—The Municipal Statistical Bureau draws attention to the decline in the birth rate in Berlin, which has been almost constant since 1876, when there were 240 births for every 1,000 married women. In 1906 the rate was only 10 per cent. Illegitimate births steadily increase, being now nearly 17 per cent. of the whole, compared with 15 per cent. in 1901 and 12 per cent. in 1875.

An Examination of Canned Meats.—The State Health Department has made an examination of 154 samples of roast, corned, dried, and potted beef, potted and deviled ham, canned chicken, turkey, and sausages. Twenty-five of the samples were found to be preparations with low grade meat contents, and seven with very poor meat contents, but one can of potted ham was found to be a preparation from diseased meat. Preservatives were found in many of the samples and adulterants also existed.

To Restrict the Use of Tobacco by Minors.—The Wisconsin Assembly has passed a bill prohibiting the use of tobacco by boys under the age of sixteen years.

A Title as a Fee.—According to the press despatches, Dr. Guiterrez, the Spanish physician who, with the English physician, Dr. Glendenning, was in attendance upon Queen Victoria during her recent accouchement, has refused to accept any pecuniary remuneration for his services, but will receive the title of Marquis bestowed upon him by the King.

Post-Graduate Hospital Tuberculosis Annex.—Owing to a lack of funds, the Post-Graduate Hospital annex for the treatment of tuberculosis will have to be restricted in scope or discontinued unless financial aid is secured for this object.

Dr. Andrew P. Biddle, of Detroit, for the past six years secretary of the Michigan State Medical Society, on the occasion of his recent resignation from that office was presented by the society with a suitably inscribed platter of silver.

Dr. George Sumner Huntington, Professor of Anatomy, College of Physicians and Surgeons, Columbia University, New York, received the honorary degree of Doctor of Laws at the eighty-second annual commencement of the Jefferson

Medical College of Philadelphia, held on June 3, 1907. Professor Huntington delivered an address on "Modern Advances in the Teaching of Anatomy and Other Medical Sciences."

Dr. Robert Smart, Lieutenant and Assistant Surgeon, has obtained an honorable discharge from the Army and will engage in private practice. He was admitted to the medical corps of the Army in 1901.

Dr. J. Blake White of this city was recently elected by the Board of Trustees a member of the consulting staff of the Littleton, N. H., Hospital.

Demonstration of Teaching Methods.—In connection with the celebration of the one hundredth anniversary of the College of Physicians and Surgeons, New York, a series of demonstrations illustrating some of the newer methods of teaching will be held on Tuesday, June 11, as follows: 9-10 o'clock. *Physiology*: at the laboratory of the department, by Professor Burton-Opitz and Dr. Haven Emerson: The action of the valves of the heart; the circulation of the blood in the capillaries; clinical methods of recording certain facts of circulation and respiration. 10-11 o'clock. *Surgery*: at the physiological laboratory, by Professor J. A. Blake and Dr. J. W. D. Maury: Recent studies at the surgical laboratory; the technique of undergraduate teaching in surgery. 11-12 o'clock. *Biological Chemistry*: at the laboratory of the department, by Professor W. J. Gies and assistants: The action of enzymes; some of the chemical phases of the newer physiology of digestion. 12-1 o'clock. *Pharmacology*: at the recitation room of the department, by Dr. A. N. Richards: The action of certain common drugs upon the heart.

Tuberculosis Camp.—A free sanatorium for indigent tuberculous patients is to be established at White Pine Camp, Mont Alto, Pa., at a cost of $300,000 or more, out of an appropriation of $600,000 made by the Legislature. The site is an admirable one by reason of its elevation, atmospheric conditions, and physical conformation.

American Gastroenterological Association.—At the tenth annual meeting of this Association, held in Atlantic City, N. J., June 3 and 4, 1907, the following officers were elected for the ensuing year: *President*, Dr. J. P. Sawyer of Cleveland; *Vice-Presidents*, Dr. J. A. Lichty of Pittsburg and Dr. G. D. Kahlo of Indianapolis; *Secretary and Treasurer*, Dr. Charles D. Aaron of Detroit.

New Jersey State Medical Association.—The coming meeting of this organization will be held at Long Branch on June 25, 26, and 27, 1907, instead of at Cape May as originally announced.

Middle Tennessee Medical Association.—Officers as follows were elected at the meeting of this society held in Murfreesboro on May 17: *President*, Dr. R. Douglass of Nashville; *Vice-President*, Dr. E. Jones of Murfreesboro; *Secretary and Treasurer*, Dr. William Litterer of Nashville.

Wayne County (Michigan) Medical Society.—Officers for the ensuing year were elected as follows by this society at its meeting held in Detroit on May 20: *President*, Dr. A. N. Collins; *Vice-President*, Dr. Kenneth Cunsolus; *Secretary*, Dr. W. D. Ford.

Vermont State Homeopathic Medical Society.—At the meeting of this society held in Montpelier on May 22 officers as follows were elected: *President*, Dr. W. E. Locke of Bradford; *Vice-President*, Dr. W. H. Everett of Castleton; *Secretary*, Dr. G. I. Forbes of Burlington; *Treasurer*, Dr. F. E. Steele of Montpelier.

Michigan Homeopathic State Medical Society.—The thirty-eighth annual meeting of this organization was held in Detroit on May 23, and officers were elected as follows: *President*, Dr. S. H. Knight of Detroit; *Vice-Presidents*, Dr. J. H. Ball of Bay City and Dr. A. V. Avery of Parma; *General Secretary*, Dr. D. W. Myers of Grand Rapids; *Corresponding Secretary*, Dr. F. A. Kelley of Detroit; *Treasurer*, Dr. R. M. Richards of Detroit. The next meeting will be held in Ann Arbor.

Connecticut State Homeopathic Medical Society.—At the twenty-seventh annual meeting of this society held in Norwich on May 17 officers as follows were elected: *President*, Dr. S. S. Ives of Meriden; *Vice-President*, Dr. S. Worcester of Stamford; *Secretary*, Dr. H. A. Cameron of Waterbury; *Treasurer*, Dr. E. J. Walker of New Haven.

Nebraska State Homeopathic Society.—At the annual meeting of this Society, held May 21 and 22, at Lincoln, the following officers were elected: *President*, H. R. Miner, Falls City; *First Vice-President*, F. A. Marsh, Seward; *Second Vice-President*, F. F. Teal, Omaha; *Corresponding Secretary*, W. K. Foote, Omaha; *Recording Secretary*, F. S. Whitman, Omaha; *Treasurer*, O. S. Wood, Omaha.

Obituary Notes.—Dr. Edward R. O'Reilly of Elizabeth, N. J., died on May 27 of appendicitis, at the age of forty-eight years. He was born in Norwalk, Conn., and after receiving his degree from the New York University Medical School began practice in Elizabeth in 1882. For five years he was a member of the New Jersey Board of Health and was for eight years City Physician of Elizabeth. He was also at one time County Physician.

Dr. J. Fields Hasty of Murray, Ia., died on May 21, at the age of forty-four years. About a year ago he was compelled to give up active work on account of the development of a tumor of the brain, which was the cause of his death.

Dr. Joseph D. Mansfield of Wakefield, Mass., died on May 22, at the age of ninety years. He was born in Lynnfield, and received his medical education at Dartmouth College and from the Vermont Medical College at Woodstock, from which he was graduated in 1841. Since the date of his graduation he had practised in Wakefield, and he had been a member of the Massachusetts State Medical Society for more than half a century.

Dr. J. P. Lewis of Topeka, Kan., died on May 20, at the age of fifty-eight years, after an illness of several months. He was born in Sulphur Springs, O., and in 1873 was graduated from the Ohio Medical College at Cincinnati. After practising for a time in Lexington, and later at Pleasantville, O., he came to Topeka in 1883. He served in numerous public offices, and was the first county health officer of Shawnee county.

Dr. George D. Duggins of Denver, Col., died on May 17, at the age of sixty-seven years. He was born in Saline county, Mo., and served through the Civil War as regimental surgeon in McGruder's division. At the close of the war he completed his medical training at the St. Louis Medical College, from which he was graduated in 1866. He practised for a time at Fort Leavenworth and Miami, Mo., and in 1881 removed to Pueblo, Col., where he had remained until a few months before his death.

Dr. P. A. A. Collet of Fall River, Mass., died on May 21, at the age of sixty years. He was born

in St. Henry, Can., and received his medical degree from Lavalle University in 1871. He came to Fall River ten years later, and had served several terms as city physician and member of the Board of Health.

Dr. CHARLES SIMPSON of Minneapolis, Minn., died on May 17, at the age of sixty-four years. He was graduated from the College of Physicians and Surgeons in 1871, and began practice in Minneapolis shortly afterward. He served as Health Commissioner, was a member of the Board of Education, and from 1895-1898 was a member of the State Board of Medical Examiners.

Dr. EDGAR POPPLETON of Portland, Ore, died on May 16, at the age of seventy-four years. He was graduated from a medical college in Cincinnati in 1854, and shortly afterward made the journey across the Continent, settling at Lafayette, where he resided for many years, afterward removing to Portland. He was the first coroner of Multnomah county.

Dr. GEORGE BOICE DURRIE of this city died on June 1 of heart disease. He was born in New Haven, and served in the Twenty-seventh Connecticut Volunteers during the Civil War. After the close of the war he completed his medical education at Yale, from which he was graduated in 1865. For thirty-five years he practised in this city, and was formerly visiting physician to the Metropolitan and Hahnemann Hospitals.

Dr. AMASA M. BUCKNUM of Denver, Col., died on May 25 at an advanced age. He was graduated from Castleton Medical College in 1849 and practised for thirty-two years in the two towns of Spring Harbor and Parma, Mich. In 1881 he went to Denver, and had practised there since that time, occupying several hospital and dispensary positions.

Dr. JAMES B. EVERETT of Everett, Mass., died on May 20, at the age of seventy-nine years. He was graduated in medicine from Dartmouth College in 1860, and after practising for ten years in Falmouth, N. H., removed to Everett.

Correspondence.

THE TRYPANOSOME OF DOURINE.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Pathologists will be interested in the information that the *Trypanosoma equiperdum* has been found in a mare clinically affected with dourine, or *maladie du coit*, at the Quarantine Station established by this Department at Lethbridge, Alberta, in 1904. The first demonstration was made by Drs. E. A. Watson and M. V. Gallivan on February 11, 1907, in material taken from a vesicle on the mucous membrane of the vagina of the animal above referred to, which was found to be affected with dourine on the premises of her owner, Mr. R. Tiffin, near Lethbridge, on December 21, 1906, and subsequently removed to the Quarantine Station for purposes of experimental observation.

The disease was successfully transmitted in February to a yearling filly and the parasite subsequently observed in preparations from a fresh plaque. The finding was confirmed by Dr. C. H. Higgins, pathologist of the Department, on March 21, and was further observed in preparations taken by him on the 23d and 25th of the same month.

The identity of dourine, or *maladie du coit*, as seen on this Continent, and hitherto diagnosed by American and Canadian veterinarians from clinical manifestations alone, with the disease as known in Africa and Asia, as well as in southern Europe, is thus fully established. A detailed report of the discovery and of the work which led up to it, as well as of the steps subsequently taken, will be issued at the earliest possible date.

J. G. RUTHERFORD
Veterinary Director General

OTTAWA, ONTARIO.

"DIPSOPHILIA."

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In Boswell's Life of Johnson, we read: "After supper, Dr. Johnson told us that Isaac Hawkins Browne drank freely for thirty years, and that he wrote his poem, *De Animi Immortalitate*, in some of the last of these years. I listened to this with the eagerness of one who, conscious of being fond of wine, is glad to find that a man of so much genius and good-thinking as Browne, had the same propensity."

As I do not agree with the opinion of many eminent members of the medical profession that alcoholism is a disease, but consider it rather a propensity, hereditary or acquired, I shall, for want of a better term, designate it "dipsophilia," otherwise any similar addiction, or fondness, for some inordinate passion, such as bridge-whist, golf, or any sport or pastime, might, with equal justification, be inserted in the index of morbid conditions. Any defect in our nature which exhibits a tendency to withdraw us from the path of morality or rectitude must not necessarily be regarded as a diseased process, and to term alcoholism a disease is an abortive attempt on the part of the profession to elucidate a social problem in a manner altogether inconsistent with modern thought and progress.

I have always considered, regarding the regrettable habit of indulging in alcoholic beverages, that those who are thus afflicted are made infinitely worse by those who themselves boast of their rigid adherence to total abstinence or irreproachable sobriety. The man who takes liquor is no more to be despised than the inveterate snuff-taker, the confirmed tobacco-smoker, or the society sylph who, weary and worn, is ushered into the Land of Dreams by her familiar chloral hydrate or sulphonal. All are equally guilty of moral turpitude—just the same as the poor laboring man who "cannot do without his glass of ale." Fierce and blatant harangues against drinking, in which the unhappy toper is reviled, scorned, and painted by some anemic orator as a foul and loathsome creature—a vampire sucking the life's blood of his wife and children, and a being altogether outside the pale of salvation—are unworthy of a moment's consideration. These enthusiasts forget that Christ himself drank grape juice in moderation, and that many of the ancient patriarchs were themselves wine-bibbing profligates.

Let us take the percentage of suicides. We shall find that no small number are recruited from the ranks of drunkards. What does this teach us? It discloses the fact that some unstable individual, who has been unable to control his irresistible and insatiable appetite for alcoholic stimulation, has awakened from his debauch, and, smitten with a horrible remorse, has sought to expiate his downfall by "a sleep and a forgetting." Instead of finding sympathy extended towards him; instead of finding his tremulous hand grasped by the firm fingers of an honest brother, he too frequently awakes to find himself battered, beaten, and bruised in the *atrox spelunca* of a modern dungeon. Then he is brought before a sleek and sarcastic Recorder (probably no angel himself) and openly proclaimed a hopeless and abandoned outcast. He is then sentenced to a harsh term of imprisonment—instead of some sequestered retreat—amid the jests of a ribald multitude and the tears and anguish of his starving dependents. Thus the last state of that man is worse than the first.

In order to improve this lamentable condition of affairs we want no nauseating doggerels about "Father, dear father, come home to us now," nor do we want to punish the inebriate any more than the morphine-taker or the tea-tippler—we want to find out how the evil can be remedied without having to appeal to the justice of the Middle Ages. We punish some poor, discouraged, and distraught wretch for attempting to commit suicide, when a ten-dollar bill would snatch him from the stygian slough in which he is engulfed. It is not the drunkard or the suicide that is to blame: it is "man's inhumanity to man." It is the State which makes its citizens drunk; it is for the State not only to sober them, but also to lead them into no further temptation. Under any conditions it is the Legislature that is culpable and not the individual.

RAYMUND H. PHILLIMORE, M.D.

MONTREAL.

PILOCARPINE IN PRURITUS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Regarding the use of pilocarpine in pruritus, as advised in the MEDICAL RECORD of May 25, it has been the writer's custom for many years to use this drug with advantage in cases of urticaria (so-called, really lichen urticatus), with intolerable itching. As these cases have usually

a debilitated condition as their underlying cause, a mixture containing quinine, arsenic, strychnine, and pilocarpine, all in the form of the chloride with dilute hydrochloric acid, has been found uniformly successful.

JOHN W. MCCULLOUGH, M.D.

ALLISTON, ONTARIO.

OUR LONDON LETTER.

(From Our Special Correspondent)

OLIVER-SHARPEY LECTURES; DEGENERATION AND REGENERATION OF NERVES—SANATORIA FOR WORKERS' ASSOCIATION; PRINCE OF WALES PRESIDING—TEMPERANCE HOSPITAL—TOTTENHAM HOSPITAL—OBITUARY.

LONDON, May 17, 1907.

PROFESSOR HALLIBURTON delivered the Oliver-Sharpey lectures at the Royal College of Physicians on the 29th and 30th ult., taking for subject "New Facts in Relation to the Processes of Nervous Degeneration and Regeneration." In the first of the two lectures, he dealt almost exclusively with nerve degeneration from a chemical point of view. He pointed out that the decomposition products of lecithin, as shown by Dr. Mott and himself in previous investigations, can be detected in the circulating fluids in degenerative nervous diseases. Accordingly, taking cholin as one such product, they suggested that if found in the blood or cerebrospinal fluid it showed that nervous tissue was breaking down, and therefore would help to distinguish organic lesions from functional disorders. The methods first used for detecting cholin have been held by some observers to be unreliable and further investigations have been made. The plan now adopted by the lecturer is to add a strong solution of iodine in potassium iodide to cholin platinochloride, whereupon the crystals are replaced by dark-brown plates and prisms somewhat like crystals of hemin. This periodide of cholin rapidly changes into oily droplets of a brown color if the slide is left to stand to evaporate. The addition of more solution causes a repetition of the changes. The obtaining of a large crop of crystals, whether of the cholin salt or a mixture of potassium and cholin salts was stated to be diagnostic of extensive breakdown in nervous tissues. The contrast between such cases and the insignificant yield from normal blood was most striking. A further investigation has been started for the estimation of the potassium in the cerebrospinal fluid and blood in cases of acute degenerative diseases of the nervous system in comparison with the normal. At present no final figures were given, but as far as the preliminary work has gone the lecturer said it indicates a considerable increase of potassium in those cases where disintegration has occurred and where cholin is discoverable.

In his second lecture, Professor Halliburton turned to the question of regeneration of nerves. He related experiments designed to settle whether the autogenetic regeneration theory, which has lately been revived in this country and Germany could be maintained. His investigations, and those of others working with him, led to the conclusion that it cannot, and so far go to rehabilitate the Wallerian theory. In no one case did he obtain any evidence of autoregeneration. Rather, his facts taken in conjunction with those of Cajal, Langley, and Anderson are strongly in favor of the Wallerian doctrine that new nerve fibers are growths from the central ends of divided nerve trunks. The facts recorded by Bethe and Kennedy he held are easily explained on the lines emphasized by Langley and Anderson of accidental, unnoticed connection of the peripheral segments with the central nervous system by means of other nerves cut through in the experiment. If such connection is effectually prevented, real regeneration of structure and restoration of function never occurs. Moreover, the regenerated fibers always degenerate in a peripheral direction, and that only when the link binding them to the central nervous system is again severed. The most striking new fact brought forward by the lecturer is in reference to the development of the medullary sheath; this appendage of the axis cylinder appears earliest at situations near the point where the ends of a nerve have been joined together and reaches the distal portions later. In the peripheral segment of a divided nerve there is multiplication, elongation, and union into long chains of the neurilemmal cells, and the same change occurs in the central end, but is more vigorous. Here the nutritive function is effective, and provides for the nourishment of the actively lengthening axis cylinders, while at the peripheral end it is ineffective unless the axons reach it.

The Prince of Wales presided on Tuesday evening at a dinner in aid of the National Association for the establishment of sanatoria for workers suffering from tuberculosis. The gathering was a very influential one, including royalties, ambassadors, and other notabilities. The health of the King having been honored, the toast of the other members of the royal family was proposed by the American ambassador, who said this was a toast always welcome to more than British circles, there never having been a time when American chivalry did not bow low in respect to the Queen of England. Touching gracefully on the advent of the Danish princess and subsequent events, he passed on to say no characteristic has distinguished the Queen, as well as the whole royal family, more than their eager identification with every beneficent helping hand held out by those who have to those who have not, and particularly in the struggle by the well-to-do to sustain hospitals for the poor—that tender recognition of the common brotherhood of the human race which becomes so strong a hope for the permanence of social order and the development of human progress. Other equally felicitous expressions filled the Ambassador's speech, to which the Prince replied, proposing success to the Association which has established the first sanatorium, as I have previously informed you, and which is already in need of enlargement. The subscriptions announced at the dinner amounted to £13,261

On Tuesday the Princess Louise opened a new out-patient hall at the London Temperance Hospital. The chairman, in an address, pointed out that last year the patients attending averaged 220 a day, and, though no charge was made and they were very poor, they had contributed £300 to the funds. The Princess hoped the new hall would enable the hospital to do tenfold the work it had been doing. It is curious how managers still harp on the large numbers they provide for, and yet the profession has long been protesting against the abuse of the out-patients' departments. A very different interpretation might be placed on the figures with which the public is supplied.

The Prince of Wales opened new wards at the Tottenham Hospital last week, and announced that at the request of the Princess Louise, president, and the governors, he was willing for the institution to be named after him. Accordingly, in future it will be known as the "Prince of Wales' General Hospital."

The death of Dr. Robert Barnes, in his ninetieth year, will recall to the oldest members of the profession one whose name was among the most honored in their early days. His M.D. Lond. dates from 1848. He was made F.R.C.P. in 1850, and there are only three Fellows surviving who were senior to him in the Fellowship. As perhaps the foremost obstetrician of his time, he filled in due course the various offices in his college, was examiner from 1864 to 1876, Lumleian lecturer 1873, councillor 1876, censor 1877-8. He was also F.R.C.S., Eng., 1883, and in 1887 the Irish College of Physicians conferred on him the honorary Fellowship. The societies and academies at home and abroad which conferred their highest distinctions upon him are too numerous to mention. The Royal Maternity Charity, the London Hospital, St. George's Hospital, the Children's Hospital, the Seaman's Hospital, St. Thomas's Hospital, and others had the benefit of his work, and the attached schools that of his teaching. In all these positions he was admired for his great acquirements, his able teaching, and the high tone of his conduct, so that his name was synonymous with all that is most learned and most upright. His "Obstetric Medicine and Surgery" and his lectures on "Obstetrical Operations" will be known to your readers as the text-books of a generation. His "Clinical Exposition of Diseases of Women" and his works on "Placenta Prævia and Fatty Degeneration of the Placenta" may also be mentioned among his contributions to obstetrical literature. The *Transactions* of the Obstetrical and Gynecological Societies contain other valuable essays from his pen. He was one of the principal founders of both these societies, and retained his interest in them to the last. He was a hale and healthy man, full of energy in his old age. He had for some years retired to Eastbourne, but thought nothing of a run up to London when his affairs seemed to him to need attention. He had a cerebral attack some three or four weeks ago, but recovered enough to drive out daily, and he came to London in the first week of this month. On the 10th, however, he had another attack, and died on the 12th.

Mr. J. F. C. H. Macready, F.R.C.S., Consulting Surgeon to the great Northern Central Hospital, died on the 29th ult., aged fifty-seven. He was a son of the celebrated actor. He became a student at St. Bartholomew's Hospital, took his M.R.C.S. in 1874 and the Fellowship in 1876. Two years later he was appointed surgeon to the Great Northern, which he served through many years on the committee as well as the staff. He was also surgeon to the Truss Society, to the City of London Chief Hospital,

and other institutions. He wrote a "Treatise on Ruptures" in 1893 and contributed to the journals on this and allied surgical topics.

Dr. John Mill Frodsharn, J.P., formerly Physician to the North London Consumption Hospital and some other institutions, died on the 12th inst., at the age of seventy-two. He took the M.R.C.S. in 1856 and M.D., Edin., the next year. He was a King's College student, of which he became Associate.

Dr. Samuel Lodge of Bradford died on the 9th inst., aged eighty-three, after a long illness. He was many years surgeon to the police, and on one occasion was stabbed with a pen knife by a lunatic. Early in his practise he also lost the sight of one eye, and later he broke a thigh, from which he became permanently lame. He wrote on Woolsorter's disease, as to which he had considerable experience; also on hydrophobia, on china grass as an absorbent and antiseptic, etc.

Surg.-Maj. L. Armstrong of the old Thirteenth Light Dragoons (retired) died at Weston-super-mare on Saturday after a brief illness. The late officer, who was seventy-seven years of age, served as an army surgeon throughout the Crimean war and attended the wounded among the survivors of the six hundred at Balaclava.

The death is also reported from Mentone of William Higginbotham, M.D., in his ninety-fourth year.

PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

FOURTH ANNUAL MEETING.

(From Our Special Correspondent.)

At the closing session of the Philippine Islands Medical Association, held March 2, the first paper, entitled "Quantitative Investigations of the Phenomena of Agglutination" was read by Dr. Y. K. Ohno of the Biological Laboratory, Bureau of Science. The next paper was entitled "Observations on the Etiology of Dengue Fever," by Captain P. M. Ashburn, Assistant Surgeon U. S. Army, and First Lieutenant Charles F. Craig, Assistant Surgeon, U. S. Army. The principal feature of this paper may be summarized by the statement that the authors have conclusively shown that dengue can be transmitted by mosquitos, and that in all probability the offending mosquito is the *Culex fatigans;* that the average incubation period of the disease is three and a half days, and that eleven cases were produced experimentally in United States soldiers who volunteered for the experiment, and that the most painstaking scientific research has failed to show any microorganism as the causative factor of the disease. The authors were further of the opinion that the organism must be ultramicroscopic and to be classed in the same category as that of yellow fever. They concurred in the findings of Stitt that leucopenia is an important diagnostic aid.

The next paper, entitled "Some Remarks Concerning Kubisagari, or Vertige Paralysant," by Kinnosuke Miura, Professor of Internal Medicine in the Imperial Japanese University at Tokio, was read by Dr. R. P. Strong. He stated that this interesting disease had prevailed for a considerable period among the peasant class of Japan, more especially in the neighborhood of Homori and Iwatekin, northern provinces. The principal symptoms are dimness of vision, ptosis, diplopia, difficulty in speech, in deglutition, and in mastication, weakness in the muscles of the back of the neck and of the extremities. He stated that this disease was identical with that observed by Gerlier in Ferney, Switzerland. The disease was most common in the summer time. He stated that the length of the attack was short, not exceeding ten or fifteen minutes. The patients were apparently perfectly well between the intervals of the paroxysms. The causative factors of the disease are not definitely known, and are usually ascribed to bodily exertion, especially to labor in a stooping position, and repeated uniform movements. The attacks are usually diminished, or stopped altogether by a change of climate and by rest. Many superstitions have been ascribed as being the cause of the disease. Gerlier was the first to emphasize the close connection between those who work in horse and cow stables, and pointed particularly to the fact that it occurred in laborers and other persons employed in the care of cows or horses, or who lived in houses in which cows and horses are kept. The writer found that the disease occurred among the same class of people in Japan. Prophylactic measures consisted in removing from the neighborhood of cow and horse stables, and the avoidance of such places especially for the midday or night sleep. Very little can be attained by the use of medicaments, but potassium iodide and arsenic seem to give the best results.

"Infant Feeding in the Tropics" was the title of a paper read by Dr. W. E. Musgrave, of the Biological Laboratory, Bureau of Science. He quoted statistics from the Bureau of Health, which showed that of 26,180 children born since 1903, 18,795 had died before they reached the age of one year. This was a most appalling mortality. He attributed it principally to the lack of knowledge in proper infant feeding, and stated that the milk of the Filipino mothers was entirely inadequate in quantity and in quality, in consequence of which rice, and even sometimes meat, were fed to the young offspring. In addition to the efforts which were made by the Bureau of Health to spread information of this kind throughout the islands by means of circulars, and through instruction in the different schools, he believed that a large public movement was necessary before satisfactory results could be obtained.

Dr. Sia Tien Pao, Delegate from His Imperial Chinese Majesty's government, delivered an address before the Association which was not strictly of a medical nature, yet was full of interest. He took occasion to justify the American occupation of the Philippines, and stated that no disinterested observer could come to the Philippines and fail to be impressed with the grand work of beneficence which was being carried on by the United States. He believed that his country was now awakening, and that the Chinese would naturally turn to the United States as the fountain of higher learning, and to obtain therefrom valuable aid necessary in the greater part of the work along lines of medical reform.

The last paper before the Association was entitled "A Summary of Some Experimental Work in Plague Immunity," by Dr. R. P. Strong, Chief of the Biological Laboratory, Bureau of Science. He stated that among prophylactic and curative serums there were encountered those which possessed antitoxic properties, of which diphtheria serum might be named as a type; those which manifest a bactericidal power, an example of which is encountered in immunization against cholera; those which combined antitoxic and bactericidal power, such as one obtained from animals immunized to the dysentery bacillus; those which possess antiinfectious power, of which plague serum may be given as an example. With regard to opsonins, he stated that much of the work that had recently been reported upon was done by trained investigators, yet a considerable proportion had been performed by men new to the field, and he felt convinced that the claims by many of the results attained would not be warranted by more careful work in the future. He stated that there were many sources of error in determining opsonic indexes and the personal equation is of considerable importance. It seemed to him not unlikely that in some of the experiments performed in the study of opsonins it is sometimes the action of the complement alone, and sometimes, although more rarely, the action of the immune body which has been considered to represent the opsonic action. He also investigated the question as to whether human beings and animals vaccinated against plague organisms, possess a higher opsonic index against the organism than do normal human and animal sera. His method was to take an unimmunized animal, such as the guinea-pig and inoculate it intraperitoneally with 10 c.c. of a sterile suspension of aleuronat. After from 12 to 16 hours the animal was killed with chloroform. The abdominal exudate, if sterile, is collected and mixed with a 1 per cent. of ammonium oxalate solution in 0.85 per cent. sodium chloride solution and thoroughly centrifuged. The packed corpuscles were then washed several times in excess of saline solution, and each time recentrifuged. In performing the tests one volume of leucocytes, plus one volume of the serum to be tested, are thoroughly mixed and incubated for 30 minutes at 37 degrees centigrade. After this, smears are prepared and stained with methylene blue. Control experiments with two normal sera of the same species of animal, as well as the control of the nonphagocytic power of the washed leucocytes, were prepared. The method of counting the phagocytic cells, as suggested by Simon, rather than the number of bacteria in each phagocyte, as recommended by Wright, is simpler, and the error of variation between repeated counts is obviously not so great. In carrying out the above experiments it has not been difficult to show that the blood of an individual or animal immunized against pest usually shows increased opsonic action over that of normal human or animal blood. However, since the normal opsonic index varies considerably in different individuals, and in the same individual from time to time, variable results may sometimes be encountered in a few instances. The general law may be determined from the study of a series of cases. In conclusion, he stated that plague immune serum acts neither as an antitoxic nor typical bactericidal serum, but that its action may be said to be antiinfectious and opsonic in nature.

At the business meeting of the Association different reports were read and a number of resolutions were passed.

In connection with the meetings of the Association, a pathological exhibit, which was changed every day, was also ready for examination at the Bureau of Science; some 200 specimens were shown. Among other things shown were piroplasmata, about which Dr. Kannusuke Myajima read a paper, and excellent specimens of the disease gongosa, which has recently been found in the Philippines, and many other interesting specimens.

Several resolutions were passed to the effect that the Committee on Public Policy and Legislation should report to the commission the desirability of appointing a commission to investigate uncinariasis in the Philippines, and also that steps be taken to arouse public interest in connection with infant mortality.

The following officers were elected for the ensuing year: Dr. W. E. Musgrave, *President;* Dr. C. F. Craig, *First Vice-President;* Dr. G. Singian de Miranda, *Second Vice-President;* Dr. Paul C. Freer, *Councillor* for five years.

Progress of Medical Science.

New York Medical Journal, May 25, 1907.

A Case of Melanuria.—The patient of F. Bierhoff was a man nineteen years old in his first gonorrheal attack in its fifth week. In addition he had a prostatic abscess. After a steady improvement from three weeks' treatment in the author's hands, he passed, one morning, blackish, sooty urine and examination showed that the color was caused by granules and clumps of melanuria. The patient had been subjected to an intense nervous shock some thirty-six hours before the melanuria was noticed. Its occurrence did not lead the author to make any change in his treatment of the gonorrheal condition, and in forty-eight hours more the urine was clear. The microscope still showed granules of pigment, but even these disappeared in two days more. In all the patient remained under observation six weeks longer without any return of the melanuria. The author makes some remarks as to the occurrence of this condition, stating that the urine may be dark on voiding, or it may in the presence of the chromogen of melanuria become dark only after exposure to the air. Under the lens the pigment is visible as dark brown or perfectly black granules or masses, irregular in shape, and usually of small size.

Congenital Stenosis of the Pylorus.—A case is reported by J. J. Gilbride, who refers to recent literature on the subject and gives a general description of the condition. His own patient was a male infant seven weeks old who, after he had passed his fourteenth day of life, began to vomit intermittently after nursing. The condition gradually grew worse and finally everything was rejected and he fell off from ten pounds, the weight at birth, to five. The chest revealed nothing abnormal. Inspection of the abdomen showed epigastric distention and the outline of a dilated stomach. Peristaltic waves passing from left to right were distinctly visible. Abdominal wall was thin and the pylorus palpable. A diagnosis of complete pyloric stenosis was made and operation advised. The parents wished that medical treatment should be followed a few days before surgical intervention. Lavage of the stomach, small amounts of food by mouth, and nutrient enemata brought no relief and the child died. No autopsy was held. Medical treatment may be of benefit in cases of partial stenosis only. Mortality from medical treatment in complete stenosis is 100 per cent.; from surgical 4.65 per cent.

Serum Therapy and Serum Diagnosis in Syphilis.—S. Pollitzer reviews recent progress along the lines indicated in his title. Space forbids the description of all the laboratory and clinical experiments which have led to our present knowledge. It has been demonstrated (1) that the immune serum of syphilitics contains antibodies and (2) that the syphilitic extracts contain antigens. By way of control it has been shown that (1) the immune serum of apes gives the reaction only with the syphilitic material of man or apes, not with the nonsyphilitic materials of either; (2) that normal nonsyphilitic ape serum is ineffective with syphilitic material; (3) serum of apes treated with extracts from the organs of nonsyphilitics gives no reaction with known syphilitic material. Finally the immune serum works equally well whether prepared with human or simian syphilitic material, a striking corroboration of the identity of human and simian apes. This, then, is a specific serodiagnostic reaction for syphilitic material which enables us to determine in the laboratory *in vitro* the presence of specific antibodies against the syphilitic organism in human serum or in prepared immune serum, and, second, to show the presence of syphilitic substances in a given organ.

The Results of Excision of the Hip in Tuberculosis of the Joint.—C. Ogilvy discusses the relative values of early and late excision, the bearing on the question of the age of the patient, etc. He prefers the Langenbeck operation, which is thus described: A longitudinal incision four to five inches long is made in the middle of the great trochanter, extending upwards beyond the trochanter for two to three inches, in a line the direction of which runs towards the posterior spine of the ilium. The bone is immediately exposed, the gluteal muscles are separated, and the rotators now exposed are cut transversely. The finger is passed along the neck of the bone. The capsule comes into view as the superior external part of the acetabulum. The capsule is split longitudinally, and the head exposed. The muscles over the trochanter with their attachments are raised with the periosteum by the scalpel and elevator. The cotyloid ligament is incised, the head rotated out and the ligamentum teres cut. The head of the bone can now be pushed through the opening in the capsule, and the excision be completed. This can be done rapidly and with very little hemorrhage; sometimes without having to ligate a single vessel. After operation, extensive immobilization and protection should be continued for at least a year. The length of time for continuance of mechanical treatment will depend upon the grouping of conditions in each particular case. Passive and active motion of the limb and, later, weight-bearing should be begun as soon as possible, care being taken not to cause inflammatory irritation sufficient to again light up the disease. Mortality is always high. Statistics are given from different reporters. At least 10 per cent. of all deaths are caused by general miliary tuberculosis. Excision is by no means a prevention of systemic infection. It would even seem at times that it was a cause rather than a prevention if we consider the number of cases which develop miliary tuberculosis after the operation.

Journal of the American Medical Association, June 1, 1907.

The Final Triumph of Scientific Medicine.—N. Senn reviews the progress of medicine, especially of late years, and says that there is no country, with the possible exception of Japan, in which the medical profession has made more rapid strides than in the United States. As evidence of this he points out our many thoroughly equipped medical schools and laboratories, the activity of the profession as shown by the number of medical societies and the interest in their meetings, the reorganization of the American Medical Association and consequent greater unity of the profession, the higher status of American medical literature, and the higher standards in medical education and in the conditions for admission to practice. All these things, he says, have been brought about in a very short time by the voice and action of a hard-working united profession. The triumphs of preventive medicine are also reviewed from the discovery of vaccination, over a century ago, to the more recent acquisitions in the prophylaxis of tetanus, typhoid fever, cholera, yellow fever, malaria and bubonic plague. The medicine of the future is preventive medicine, and its final triumph will be the suppression of disease.

The March of Sanitation.—The progress of modern sanitation and the duties of government, both as regards their own special jurisdictions and their international relations, form the subject of an address by Surgeon-General Wyman of the Public Health and Marine-Hospital Service. He refers to the numerous recent advances that have been made, the lowering of the death rates and the elimination of typhus in English towns, the disappearance of smallpox and typhoid from Germany, the conquest of malaria in Italy and elsewhere, the sanitary measures in Mexico and Brazil, the suppression of yellow fever, the passage of the Food and Drugs Act, etc., and says that the nations are now beginning to see that international cooperation is required for complete success in the war against disease. This idea has found expression in the suggestion of a combined effort against yellow fever in the Western Continent, in the international conferences at Venice and Paris, and in the sanitary convention of the American republics in 1905. So far, the actual agreements have related almost exclusively to quarantine matters, but the idea of international sanitation as an advance on international quarantine, was brought forward in the Third International Conference of American States at Rio Janeiro in 1906, and resolutions were passed recommending that the delegates to the next international sanitary convention, to be held in Mexico in December, 1907, be authorized to study and ascertain the practical measures required for this purpose.

Wyman offers the suggestion that the subject might also be considered to advantage in coming peace conventions and that international hygienic work would divert the energies now uselessly expended in warlike matters. The sanitary awakening in this country is noticed as shown in the increased activities of municipalities and State boards, in the antituberculosis movement, etc. The well-to-do cannot afford to neglect the poor in this matter: the disease germ is a social climber and social position or wealth is no protection if disease-breeding slums are neglected.

Bimanual Vibratory Palpation.—H. A. Kelly finds that the difficulties of accurately outlining a kidney or uterine or ovarian tumor can be overcome by using what he calls vibratory palpation. In the case of a pelvic tumor, for example, the finger in the vagina rests lightly on the cervix if it is uterine, or on its lower pole if it is ovarian. Then the upper hand plays lightly over the abdominal wall, over the tumor, touching first its central portions and then advancing radially out toward its periphery, in all directions, communicating a series of very rapid light vertical succession movements. These little vibrating thrills are felt very distinctly by the finger in the vagina as long as the tumor is played on, and are lost as soon as the vibrations fall on the intestines or fat abdominal wall just beyond the edge of the growth. The vibrations are communicated by giving from three to five little tremulous movements every second to the palpating fingers. The actual to and fro movement need not extend over one centimeter. In this way an accurate outline of the tumor and its irregularities can be obtained.

Erythromelalgia.—I. W. Voorhees treats at some length of the theories of this disorder and describes what is known of its symptoms and treatment. He is inclined from his investigation of the subject to agree with Lewis and Benda that it is not a distinct disease entity, but is a symptom-complex that may have either a central or a peripheral origin, and with Eulenberg, would put it in the same class with Raynaud's disease, as simply different phases of the same condition, the one being dependent on undue dilatation of the terminal arterioles and the other to an undue contraction of the same. They have been observed in the same patient by different observers, and there is not the slightest doubt, Voorhees says, that they exist together as symptoms of some marked pathologic state and notably in that disease of the blood-vessels, known as arteriosclerosis. Treatment has generally been ineffective, and he considers that in intractable or specially distressing cases, even recourse to surgery would be advisable.

Radical Cure of Umbilical Hernia.—W. J. Mayo describes his overlapping from above down method of operation for the relief of umbilical hernia, by which he finds the largest protrusions can be satisfactorily reduced and the hernial opening closed without tension. The tendinous aponeurotic structures involved are among the strongest in the body, and when overlapping is accomplished the resistance is nearly perfect. The sutures merely maintain the structures in apposition, while the intraabdominal tension itself prevents displacements. The operation is simple. Two transverse elliptical incisions are made, cleanly exposing the neck of the sac and the aponeurotic structures for several inches above and below it. The neck of the hernial protrusion is cleared as high as the aponeurotic structures extend, the sac is then opened and any contained intestine returned into the abdomen. The contained omentum, if any, is ligated in sections on a level with the abdominal orifice and the stumps returned into the abdomen. The sac, with all adherent omentum, including the skin, is cut away without further manipulation. A stout curved needle threaded with strong celluloiden linen is passed from without in through the aponeurotic structures and peritoneum from two to three inches above the margin of the opening. A large tablespoon to guard the needle as it enters the peritoneal cavity is a valuable aid. The needle and thread are drawn down and out of the hernial opening. A firm mattress stitch is then caught in the upper edge of the lower flap about one-fourth of an inch from the margin, the needle is then carried back through the hernial opening into the peritoneal cavity and made to emerge one-third of an inch lateral to the point of original entrance. On each side of this is introduced a similar mattress suture of strong chromicised catgut. These three sutures are drawn tight, pulling the entire thickness of the aponeurotic and peritoneal structures behind the upper flap. The margin of the upper flap is now retracted to expose the suture line, and what gaps exist are closed with catgut sutures. The upper flap is now sutured to the surface of the aponeurosis below by continuous chromicised catgut suture and the skin and superficial fat closed. The patients are kept in bed for from twelve to twenty days. It is thirteen years since this operation was first performed and of the 88 patients operated on between 1894 and 1895, 75 were traced. One had a partial relapse described by her physician as a boa-shaped stretching at the site of the former operation, but giving no inconvenience. Another patient supposed to have suffered a relapse was operated on and a second opening found to exist above and lateral to the umbilical opening which was found closed. The operation is illustrated.

Hemoglobinuric Fever.—W. H. Deaderick holds that hemoglobinuric fever is always malarial in the human subject, and explains its pathogenesis substantially as follows: The primary blood destruction is due directly to the malarial parasite, chiefly through the act of sporulation, possibly also by the production of a toxin, though this has not been demonstrated. The hemoglobin thus liberated is carried to the liver, where certain receptors of the liver cells are capable of transforming free hemoglobin into bile pigment. When these receptors are exhausted the deficiency is met by overproduction, and when the cell becomes overfilled some of these side-chains are cast off into the general circulation, where the receptor becomes an amboceptor, and meets the complement present in normal serum and the complete hemolysin is formed. The nature of the complement is unknown, but certain facts throw suspicion on lecithin. It is highly probable that when the production of the hemolysin is not too rapid there is formed at the same time an antihemolysin that may exactly balance the hemolysin without destroying it. So long as this balance is maintained no hemolysis occurs, but should the balance be greatly disturbed by fresh malarial invasion, cold, fatigue, quinine or other and probably unknown factors, hemolysis and hemoglobinuria occur. Under this exact equilibrium the patient is in a condition very similar to that of paroxysmal hemoglobinuria; a close relation between these two affections has been claimed by Sambon. It is possible that a slight and temporary loss of equilibrium may result in a limited hemolysis, producing hemoglobinemia instead of hemoglobinuria. Some cases of anemia, cachexia, and post malarial secondary fever can be explained in this way. Deaderick believes that this theory "explains the occurrence of hemoglobinuric fever during and after malarial infection, with or without the use of quinine; it explains why the malarial attack may precede by months the appearance of blackwater; why cold, fatigue, etc., may bring on an atack; why the hemolysis does not always coincide in time with the sporulation of the parasites when the latter are present; it accounts in a measure for the complex relation with quinine and explains obscure anemia and post malarial secondary fever. Lastly, it coincides with the prevalent ideas of tropical physicians of an intimate relation between hemoglobinuric fever and biliousness."

The Lancet, May 18, 1907.

On the Control of Supernormal Arterial Pressure.—George Oliver notes that a persistent pressure rise may be regarded generally as the outcome of some alteration in the chemical composition of the plasma or of organic changes in the circulatory mechanism. His own observations were made by means of a special secondary instrument referred to in his paper. Treatment of this abnormality should begin with diet. The bulk of each meal should be reduced as much as possible, and various salts, soluble extractives, alcohol, etc., should be avoided, as they stimulate the cardiovascular apparatus. Fluids at meals should be cut down to a minimum. Mildly alkaline waters are preferable. Tea and coffee may be used in moderation, provided no disturbing results, as palpitation, giddiness, etc., follow. Alcohol is better cut out altogether. A chloride-free diet should be aimed at. Milk and vegetables are our chief dependence. Cheese in moderation is the least objectionable form of proteid. Boiled meats are preferable to roast meats. Fresh water fish are allowable. Tobacco should be cut off. Rest in bed plays an important part. The skin must be kept active. Venesection may be of service in some cases when vasodilator drugs fail to act. The author then passes in review the various drugs which have been recommended, dwelling particularly on ingested thyroid. He finds that the ingestion of this substance increases arterial caliber and lowers arterial pressure. He finds it especially serviceable in gouty and obese patients from

forty-five to fifty years, but it should not be given in a more routine manner. Results with any plan of treatment will depend greatly on the fact as to whether the patient can completely rest or is compelled to follow his regular avocation.

A Case of Chloroma.—A detailed history of the case is given by W. E. Reynolds, whose patient was a boy of fourteen years with symptoms which led to a provisional diagnosis of acute leukemia. The whole period covered from the initial symptoms till death was about ten weeks. The terminal symptoms were a rapidly progressive anemia, an irregular fever, and enlarged spleen. No progressive glandular enlargement could be made out and with the exception of the last day or two of life the patient did not complain of any pain. Autopsy findings are given in full and microscopical examination was made of sections of tissue from different parts of the body. The final diagnosis was chloroma. This disease, says the author, is often classed with melanotic sarcoma. Some authorities regard it as a form of leukemia. In this particular case the history, clinical course, and distribution of gross lesions suggested an infective process. The morbid histology showed a general dissemination of what looked like lymphoma, but the blood-vessels were well formed and the presence of newly formed capillaries indicated changes analogous to those found in subacute and chronic infections; but in spite of this the characters of the cells and their nuclei were indistinguishable from those found in sarcoma. The quantity of the pigment found in the tissues was greater than could be accounted for by hemolysis alone. It was therefore evident that it was derived in part from cellular and nuclear destruction. The pigment appeared to be of the nature of a fatty acid combined with iron, and it had very strong reducing power. The whole case is fully worked out from every point of view.

Diseases of the Upper Air Passages in Relation to Life Assurance.—W. H. Kelson dwells particularly on paralysis of the larynx, laryngeal tubercle and syphilis, nasal obstruction, the condition of the tongue, and nasal discharge suggesting disease of the accessory sinuses. He suggests that the life insurance examiner should include in his category of questions such inquiries as "do you ever suffer from hoarseness or difficult breathing," "can you breathe freely through the nose," "have you any mattery discharge from it," "is your tongue sore," etc., and on the replies obtained thereto advise his company as to the acceptance or postponement or rejection of a given risk. He points out the possible dangers which might result in case of an affirmative statement by the patient to the foregoing questions. He considers the tongue condition as of special importance. It may give valuable indications of the applicant's past life history and habits, such as a tendency to chronic alcoholism, as shown by the furred tongue inclined to tremor with a more or less characteristic odor of the breath. In chronic superficial glossitis, also, we have a complaint both common and important with its various forms or stages, as leucoma, psoriasis of the tongue, and the red glazed smooth form. Its exact etiology may be somewhat obscure, but syphilis, excess in smoking, and alcohol (especially spirits), stand out preeminently as contributors to its development, and gout and rheumatism are also believed to be factors. As regards leucoma and cancer it may be said that leucoma is a very strong predisposing cause of cancer, and if in a case of leucoma any ulceration with induration is found, we may be pretty sure that the carcinomatous stage has already been reached.

Clinical Observations on Mucomembranous Colitis.—A general description of the disease is given by J. Liddell. In considering treatment he refers particularly to that employed at Harrowgate. At the outset of treatment we must naturally eliminate any known cause. The original exciting cause may be no longer in operation. Next one must adopt the best means of overcoming the stasis of the bowel and procure a regular and complete evacuation of its contents. The necessity of this is apparent, since it is the retention of mucous secretion, feces, products of putrefaction, and microbes which causes the constitutional disturbances and increases the local irritation. Moreover, requisite means have to be taken to improve the mucous membrane and the muscular coats of the intestine. For evacuation of the bowel aperients prove unsatisfactory in colitis. They never effectually clear the bowel without producing considerable local and general disturbance, and really aggravate the condition. As they lose their power in course of time the patient requires to take larger quantities and take them more frequently, thus making the local condition increasingly worse. Probably the best means of evacuating the bowel and at the same time lessening its irritation is by colon irrigation. When this is properly administered it clears the bowel more effectually than aperients do, and instead of having a pernicious effect its action is most beneficial. A somewhat extensive experience has taught the author the value of this method and that it is by far the best way to commence the treatment of colitis. It has to be carried out with very great care and under certain restrictions, as it may do harm instead of good. But properly administered its value is undoubted. The fluid used must be of a bland unirritating nature. It must also be given under a low and equable pressure or painful spasm will occur and irritation of the colon. The temperature and the quantity of the fluid are also matters of importance. The remainder of the paper is occupied with a description of the details followed out at the Harrowgate institutions.

British Medical Journal, May 18, 1907.

Calcium Salts in the Treatment of Certain Types of Pneumonia.—J. D. Cree believes that it is quite as important to know when to withhold calcium salts in pneumonia as when to prescribe them. He gives the histories of two cases. Case 1 was that of a stout woman of thirty-eight years who was suffering from severe dyspnea, low tension pulse, albuminuria, and was raising over a pint of watery hemorrhagic sputum in twenty-four hours. The picture was that of a patient drowning in her own excretions rather than dying from a toxemia. She was of the hydremic type and her condition was regarded as due to an insufficiency in the coagulability of the blood. Diet was restricted and she was given twenty grains of calcium chloride in water by the mouth. Ten grain doses were continued hourly for twelve hours, and were then reduced to every four hours. Half a day showed a decided improvement in the patient's condition. The sputum in particular was reduced to half its previous amount, and the bright hemorrhagic appearance gave way to a dull, rusty color. In Case 2, that of a thin woman of twenty-five years, the clinical course of the disease was from the start very different, the case running throughout a "dry" course. In this case thrombosis was feared and the aim was to decrease or rather to prevent any increase in the coagulability of the blood. The patient was allowed soft diet and fruit, and was encouraged to drink lemon juice in water. The author makes a plea against the unreasoning use of the calcium salts in pneumonia. In the first type it renders great service; in the second there is no logical reason for its administration and there is one very good reason against it.

Morphinomania Treated Successfully with Atropine and Strychnine.—M. S. P. Strangman reports one case, that of a man addicted to over thirty years' use of the drug. His latest allowance was two wineglassfuls of laudanum in the day and he presented the usual symptoms of the habit. The treatment was begun with atropine sulphate 1/100 grain and strychnine nitrate 1/60 grain three times daily, increasing as rapidly as the patient could bear until on the eighth day his dosage was atropine 1/50 and strychnine 1/20, but it was soon necessary to reduce the atropine to 1/60. Under this plan of treatment immediate beneficial results were noted. Finally the atropine was stopped and the strychnine continued a while longer. The opium was suddenly withdrawn in this case with the usual result of nausea, vomiting, and diarrhea, but the patient finally weathered the storm.

Regeneration of Nerves with Regard to the Surgical Treatment of Certain Paralyses.—The observations of C. J. Bond center about the case of a man of forty-six years who had been struck in the back by the buffer of an engine twenty days previously, and sustained a fracture dislocation of the lowest dorsal and first lumbar vertebræ, with crushing of the cord and complete paraplegia. Laminectomy was performed, the neural arches of the last two dorsal and first two lumbar verterbræ being removed, and the dura mater laid freely open. Finding that (as was expected) the cord was completely divided, and acting on a previously considered plan, the reporter divided the last dorsal nerve-roots intact above the crush on the right side as low down as possible before their exit through the theca, and also similarly divided the first lumbar nerve roots intact below the disorganized portion of cord, also within the thecal canal, and turning these latter upwards he united the cut proximal ends to the cut proximal ends of the dorsal nerve roots previously divided. A corresponding junction was also made in the left side. It was hoped that by so doing a path might be provided for the possible transference of nerve impulses—afferent, efferent, and trophic—across the gap caused by the crushed portion of the cord.

The patient recovered from the operation and the wound healed. He remained in the hospital until June 24, when he left for his home, where he died seven weeks later, and unfortunately no post-mortem examination was obtained. During the three months of his stay in the hospital there was no evidence of any return of voluntary movement, though there was a transitory alteration in the level of the anesthetic area. The bladder condition remained as before.

The Physiological Action of Whiskey on the Circulation.—Experiments have been made in this direction by F. J. Charteris and E. P. Cathcart. They note that many pharmacological experiments which have influenced the ideas of physicians as to the effects of alcohol on the system have been made with pure alcohol and not with the forms in which it is employed in medicine, such as brandy, whiskey, champagne, and port wine. It is difficult to define just what whiskey is. In Scotland it is the pot-still product and not the patent-still product. The former is more complex in character and may contain secondary ethereal products; the latter is a poorer and cheaper substance. The authors made a series of experiments on three men, practical abstainers, noting the relative effects on the circulation of absolute alcohol and whiskey. The dose given corresponded to one ounce of absolute alcohol and sufficient water was added to make the dilution of alcohol one to four. The conditions under which the experiments were carried out are fully specified. In general terms it may be said that the effect upon the pulse and pressure of all three alcoholic preparations, in the above dosage, was very slight, and that after the first ten minutes practically no difference could be detected in action between the absolute alcohol and the whiskies examined. In other words, the action of whiskey on the pulse and pressure depends upon its alcoholic content and not upon any special body distilled over either in the process employed in the manufacture of pot-still whiskey or in that used in the preparation of the patent-still whiskey. The same result was obtained in a series of pneumonia cases and a series of intravenous injections on rabbits.

Berliner klinische Wochenschrift, May 13, 1907.

The Effect of Injections of Cocaine on the Sensibility of the Abdominal Organs.—Kast and Meltzer point out the apparent discrepancy between the statements of Lenander and other surgeons who have found that the abdominal viscera, even in the inflamed state, have no sensibility for painful stimuli, and the constantly occurring clinical observation of severe abdominal pain in many different conditions. By an extensive series of animal experiments the authors were able to show that while it was true that surgeons who operated under local anesthesia did not find that manipulation of the intestine or other abdominal viscera was painful, this condition was the result of the injections of cocaine used to anesthetize the skin for the abdominal incision. In animals (dogs and cats) the injection of 0.02 to 0.03 g. of cocaine sufficed to render painless stimuli to the intestine that without the cocaine would have been resented. It seemed to make little difference whether the site of injection were close to the seat of operation or at a distant part of the body, such as the extremities. Intramuscular injections were found to be more promptly effective than hypodermic injections, and the authors express the view that the mode of action is through the medium of the circulation. The sensibility of inflamed organs in untreated animals was found to be greater than that of uninflamed organs, but the action of the cocaine injections was equally pronounced in such cases. Another observation made was that the cocaine injections had a distinctly quieting effect on the post operative restlessness of animals that had been subjected to ether anesthesia.

The Nature of Carcinoma.—Westenhoeffer reviews at length some of the considerations that lead to the view that the malignant growths represent true parasitic cell colonies which are at once anarchistic and despotic in nature. While originating from the body cells, they are made up of cells which have lost the normal characteristics that belong to these and have become an entirely independent type. This change the author endeavors to explain on the assumption that there has been an atavistic reversion of certain cells which have gone back to the primitive cell type, which is the lowest form of life and is represented by the unicellular animal and vegetable organisms. In order to prove this hypothesis he has made many biological experiments, one group of which was founded on the method of anchoring the complement and by which he tries to show that the cells of carcinoma metastases are heterolytic to animal and vegetable albumin of all varieties. The manner in which certain cells are supposed to be liberated from their normal restraints and rendered capable of this reversion to the ancestral type is explained somewhat in accordance with Ribbert's view of the effect in this regard of chronic irritation and inflammation.

The Effect of Salt and Sugar Injections in Infants.—Schaps found that the infants in the Berlin Asylum for Children sometimes manifested elevations of temperature, that appeared suddenly and disappeared quickly, in conjunction with the addition of a larger quantity of sugar to the food. He was led to believe that this did not depend on any bacterial cause or the absorption of toxins, but rather was the result of the sudden increase in the carbohydrate of the diet; in other words, that an alimentary fever is possible. In order to test this hypothesis he gave infants infusions of glucose and lactose in a strength isotonic with normal salt solution. He found that a typical febrile movement followed this procedure and that even normal salt solution gave rise to an evanescent rise in temperature. He therefore concludes that an alimentary fever exists, and explains it as being due to the disorder of cellular metabolism that is temporarily caused by the alteration in the tonicity of the fluid in which the cells are bathed. The infant, with its imperfectly developed intestinal tract, is especially prone to manifest fluctuations of this nature.

Münchener medizinische Wochenschrift, May 7, 1907.

Intestinal Obstruction Due to Gallstones.—Brentano, in discussing the operative relief of this condition, calls attention to the necessity for investigating the bile passages and intestine for the existence of other calculi which might give rise to serious complications during the patient's convalescence, as was the case in an instance that he reports in which the patient died as the result of a second obstruction caused by another stone about two weeks after the original operation. He considers that in every case of gallstone ileus the proximal portion of the intestine should be palpated for the presence of other stones, and any that are found should be removed if possible through the same incision as the one that is impacted. If this segment of intestine is empty, but the gallstone removed displays facets indicating the presence of other stones in the gall-bladder the incision must be prolonged so as to give access to this viscus and permit of its being emptied. This is particularly desirable if the stone removed has a large round facet pointing to the presence of another equally large calculus. In view of the possibility that it may be necessary to invade the gall-bladder region, it is wise in cases of suspected gallstone obstruction to open the abdomen by an incision above the umbilicus. The incarcerated stone may easily be removed through this incision, as it is usually in a coil of the ileum. Longitudinal incision of the intestine is preferred to transverse incision for the removal of the stone.

Observations on Anguillula Intestinalis.—Bruns reports three cases of infection with this parasite and gives a detailed review of what is known in regard to it. His own patients were miners and apparently were not incommoded by the presence of the parasites. The manner in which these individuals became infected could not be determined. As the result of his studies of the subject, Bruns is of the opinion that it is impossible as yet to determine the relationship existing between the occurrence of intestinal disorders and the presence of the parasites, that is, whether intestinal catarrh encourages the multiplication of the organisms or whether it is itself evoked by them. In view, however, of the circumstances that the parasite lives in the intestinal mucosa, that its youthful forms may occur in the circulating blood, that infection may take place through the uninjured skin, and that in its entire biological relationships there are many points of similarity with the ankylostoma, it is hardly justifiable to regard it as entirely without pathogenic significance. All the cases that have so far been reported in Germany have been sporadic, but it seems advisable to cultivate the study of the parasite with greater interest than has heretofore been the case.

A Study of Some Tropical Ulcerations of the Skin, with Particular Reference to Their Etiology.—Richard P. Strong's observations have led him to conclude that a number of forms of chronic ulceration of the skin are to be encountered in Manila, among which (after excluding certain ulcerative lesions of syphilis, yaws, leprosy, and lupus) there still exist at least several types of different etiology. A somewhat rare form is evidently of blastomycetic origin, in which the torulæ encountered have somewhat the appearance of the forms which have been described in certain cases of Oriental boil or sore as species of protozoa related to the Donovan-Leishman bodies.—*The Philippine Journal of Science.*

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-eighth Annual Session, Held at Atlantic City, June 3, 4, 5, 6, and 7, 1907.

(Special Report to the MEDICAL RECORD)

HOUSE OF DELEGATES.

Monday, June 3—First Day.

THE PRESIDENT, DR. WILLIAM J. MAYO, OF ROCHESTER, MINN., IN THE CHAIR.

THE Committee on Credentials presented a preliminary report. The minutes of the Fifty-seventh Annual Session were read and adopted.

President's Address.—Dr. WILLIAM J. MAYO, following the custom of his predecessors, directed the attention of the house to some of the more important matters to come before it for decision. It was fortunate that as president he was relieved of the business control of the Association by the board of trustees, to whose wise control of its affairs the Association owed its place as the largest and most powerful medical organization in the world. Dr. George H. Simmons of Chicago, the general secretary of the Association, had won his admiration. Dr. Mayo spoke particularly of the success of the *Journal* of the Association; it had brought to the Association a profit of over $50,000 during the year. The president expressed his appreciation of the ability with which Dr. J. M. McCormack of Bowling Green, Ky., had performed his duties as chairman of the committee on organization. He called attention also to the evil of medical schools owned by private corporations and conducted for their own advantage, hoping that the moral force of the Association might be lent to the correction of this condition. The committee on life insurance would make a report upon the vexing question of fees for life insurance examinations, which was one causing much dissatisfaction in the ranks of the profession, affecting at least 10 per cent. of its members. The speaker thought that physicians were quite as unreasonable in the use of proprietary preparations as were the public in the use of patent medicines. The work of the Council on Pharmacy and Chemistry deserved the support and encouragement of the profession. To expedite the business of the House of Delegates, and thereby save the time of its members, the president recommended the creation of a new committee.

The president then announced the membership of committees.

Report of the General Secretary.—Dr. GEORGE H. SIMMONS presented this report. The membership of the American Medical Association on May 1, 1906, was 23,636. During the year the names of 2,135 were discontinued on account of deaths, resignations, nonpayment of dues, and noneligibility. To the list, however, had been added 6,014 names, giving a net gain of 3,879 for the year, and a present membership of 27,515. The secretary had received official advice of the amalgamation of the Oklahoma and Indian Territorial Associations. Committees had been appointed in accordance with resolutions adopted at the Boston session as follows: Committee on Tropical Medicine, Ludvig Hektoen of Chicago, Chairman; Maximilian Herzog of Chicago, George Dock of Ann Arbor, Mich., Dr. L. F. Barker of Baltimore, and Col. Wm. C. Gorgas of Panama. Committee on Ophthalmia Neonatorum, F. P Lewis of Buffalo, chairman; J. Clifton Edgar of New York, and F. F. Westbrook of Minneapolis. In his report of last year he had called attention to the ambiguity of the provisions of the by-laws with reference to associate membership, it being claimed that those eligible to full membership, wut who did not care to avail themselves of it, might acquire temporary membership. He thought it obviously unjust to active members to permit those not caring to assume the obligations of active membership to become associate members, and thus obtain special privileges. On the other hand, there was a distinct class who were not licensed to practise medicine who should enjoy the advantage of the membership without the formality of election each year. He therefore proposed the amendment of the by-laws to obviate the ambiguity and uncertainty. The relations between the secretaries of the various constituent associations and the General Secretary's office were constantly becoming more intimate. The growth of the organization involved the necessity of a more accurate registration system, which, inaugurated two years ago, was proving more and more valuable. Regular reports were received during the past year from thirty-nine State secretaries, and reports, though not regular, had been received in sufficient fullness, with one exception, from the remaining secretaries to cover all membership transactions during the year. The presidents and secretaries of county societies had been receiving the Councillors' Bulletin, which, issued at intervals during the past year, had contained much matter of importance to them. The Bulletin now had a circulation of nearly five thousand. The biographical card index of the individual members of the profession was being constructed from over sixty thousand personal biographical reports now in the hands of the Directory Department. Though the correspondence with Porto Rican physicians had been continued, no success had yet met the efforts looking toward the organization there of a constituent association. Organization matters generally had attracted increasing interest throughout the country, more attention than ever having been paid to the prerogatives and duties of physicians as members of the community.

Report of the Board of Trustees.—Dr. T. J. HAPPEL of Tennessee, Chairman of the Board of Trustees, presented their report for the last calendar year. The net revenue had been $31,915.10. The net earnings of the *Journal* amounted to $55,000 for the year. The Council on Pharmacy and Chemistry had maintained its close censorship of advertising matter, yet without an increase in the advertising space the increased circulation of the *Journal* had made possible an increase of $2,800 in the income of that department. The experience of the Association had justified the purchase of the buildings now owned by the Association. Whereas formerly $5,000 annually had been expended for rent, the Association now received the same amount from the rental of space it possessed in excess of its own needs. Thus Dr. Happel considered the Association to be ten thousand dollars a year better off than it had been before. Much money had been invested in the Directory, but its first edition having been completed and copies delivered, the Association was now recouping itself. Despite the rather favorable financial showing, the Board of Trustees felt it necessary to recommend the creation of a sinking fund of not less than a hundred and fifty thousand dollars. Debts must be discounted and bills met promptly and a margin left for emergency. Heretofore the Association at its conventions had been dependent to a very considerable extent upon the hospitality of the local body of the profession. This year for the first time it had provided its own meeting places, and had met the entire expenses of the convention, save for the entertainment of the ladies attending the sessions, for which it was indebted to the local committee. This year also the manufacturers' exhibits were closely supervised, and only such products accepted as might be admitted to the advertising pages of the *Journal*. A suspicion had existed in the minds of some that the Council on Pharmacy and Chemistry had discriminated against some manufacturers in favor of others. This feeling had been dispelled, and the success of the efforts of the Council was gratifying. Every member of the medical profession throughout the country should be

willing to lend his hearty support to the Council in this work. The Committee on Medical Legislation had accomplished much. The full report which it would present to the House of Delegates would justify the wisdom of the appropriation of $4,500 for the committee's use during the year. The Committee on Medical Legislation had kept the Board of Trustees advised of its work, which, though remaining under the supervision of the chairman of the committee, would in future be carried on largely by one of the assistant secretaries with headquarters in the building of the Association. While the Board of Trustees was prepared to furnish in detail desired information concerning the present condition of all appropriations, it would consider it poor policy to publish such details to the world. The Board had been encouraged in its work by the diminution of captious criticism on the part of those less well informed regarding the business of the Association. The Trustees had at an annual meeting extended a vote of thanks to the editor and general manager of the *Journal*, Dr. George H. Simmons, for his painstaking and efficient efforts.

Report of Committee on Senn Medal.—Dr. A. F. Jonas of Omaha, Neb., the chairman of the committee, being absent, the secretary read his report for the committee. Only two theses having been presented, neither of which the committee considered of such merit as to deserve the medal, the committee had determined to make no award. A permanent notice was recommended to be inserted in the *Journal*, setting forth the conditions attending the competition for the medal.

Of the appropriation of $5,000 for the relief of the California earthquake sufferers, only $3,000 had been called for during the calendar year. The chairman of the committee had been advised informally that the $3,000 had since been returned to the Association.

Report of the Council on Medical Education.—Dr. Arthur N. Bevan of Chicago, Chairman, presented an extended report, outlining what the Council had accomplished so far and what it hoped for the near future. The Council had been created in 1904 to take up the work which, up to that time, had been carried on with indifferent success by committees on education, which had labored under the disadvantage of a rapidly changing membership. The Council desired to see organized a permanent national bureau on medical education, with an adequate clerical force, and a permanent base. This bureau in giving publicity to the evidence which it would collect would be effective in producing reforms, even though it were without legal powers. The Council had had two conferences with representatives of State examining boards in April, 1905, and May, 1906, respectively. At the first conference the questions of a standard of preliminary educational requirement, the medical curriculum, and the relation of the college of liberal arts to the medical school were discussed. As a result of this conference the Council formulated a minimum standard for the time being: A college preparatory education, passed on by a State official, graduation from an approved medical school having a course of four years of thirty weeks with thirty hours' work in each week, and a licensing examination. The Council also formulated an ideal standard to work for in the future. At the second annual conference, May, 1906, was considered the most important subject of the relative standing of medical schools based on the success their graduates had had before licensing boards. Schools were classified with reference to the percentage of failures. Such tables, it was believed, would, if published periodically, be of much service in elevating medical standards. A personal inspection of medical schools throughout the United States had been undertaken during the past year in the attempt to ascertain the exact character of their work and to mark them on a civil service basis. The task had been found a large one, but in its value would justify itself in enabling the Council to form a better idea of existing conditions than could otherwise have been obtained. The question of increasing the requirements for matriculation had been pursued with many colleges. A year ago only seven medical schools in the United States demanded preliminary work in a college of arts. Now forty-nine schools would, by January 1, 1910, require one or more years of college work for admission. Furthermore, there were now only six States where non-graduates might receive licenses to practise. Interstate reciprocity had made considerable strides recently. Forty-five States now had State committees on medical education, which in their reports to the State Associations had done good work in several instances. It was thus that each State medical society would be kept fully informed of the relative standing throughout the country.

Report of the Committee on Medical Legislation.—Dr. Chas. A. L. Reed of Cincinnati, Chairman, outlined the influence which the Association had exerted upon Congress, resulting in the final passage of the Pure Food and Drug Bill, despite serious obstacles. Through persistent presentation of the case of Dr. James Carroll, who as the result of his experiences with yellow fever in Cuba had become largely incapacitated, had finally met success in the promotion of Lieut. Carroll to be Major and Surgeon. The project to secure an army general hospital had resulted in an appropriation of two hundred thousand dollars. The Army Medical Reorganization bill, though pressed assiduously, had met the determined opposition of the Speaker of the House of Representatives, and in the opinion of the committee had little chance of becoming law in the near future. The disparity between the professional requirement for license between the United States and many foreign countries was emphasized in the course of an investigation of a report that the Anglo-Japanese treaty discriminated against American practitioners in Hong Kong. It was learned that licenses were there granted under the Imperial Medical Practice Act of Great Britain, which required a five years' course of medical instruction previous to graduation as a prerequisite to license. Thus American physicians, though not discriminated against as Americans, suffered in competition with the men of other nationalities. The efforts which the Association had put forth in former years to have the chief medical officer on the Isthmus of Panama given coordinate rank on the Isthmian Canal Commission recently met with success when the president named Colonel Gorgas as a member of the commission in charge of sanitation. Through the assistance of medical men, members of Congress, the osteopathic practice bill for the District of Columbia, which had passed the Senate, was defeated in the House. The subject of the creation of a national department of public health was now in the hands of a popular "committee of one hundred." Other matters of legislation, National and State, were mentioned by the committee as meriting attention.

Dr. Frank S. Billings of Chicago offered a resolution to communicate to the Director of the U. S. Census the wish of the American Medical Association that an enumeration of deformed and ruptured children in the United States should be made in connection with the next census.

Report of Committee on Organization.—Dr. J. N. McCormack of Bowling Green, Ky., chairman, reported in some detail his conferences with various State officials. Interest in county societies was waning, he believed, for the need of a more systematic method of study. The committee favored the elaboration of a scheme of post-graduate work, covering an extended course of study adapted to the needs of the average county society. After a full consideration by the House, the committee hoped such a system might be evolved as to meet the needs of many practicing physicians who at present did not attend any

association meetings. The development of the idea would require the expenditure of perhaps $600, the appropriation of which the committee suggested. Dr. McCormack pointed out the fact that the antagonism between certain mercenary interests and the profession at large had resulted in a more or less open breach between the physician and the druggist, which would merit the kindly and dispassionate attention of the House of Delegates. The chairman of the committee presented a second report recommending the organization of branches of the American Medical Association, dividing the territory of the entire country into seven geographical divisions. Membership in these branches should be limited to the members of the State and County societies, and should be purely voluntary. Meetings of the branch associations should be held coincidently in time and place with those of the State societies, and should so far as possible be held in the fall, midway between the conventions of the National Association. This plan would tend to diminish rather than to increase the total number of the societies of the country, and would afford to the younger men an opportunity for activity not presented by the National Association.

Report of the Committee on Ophthalmia Neonatorum.—Dr. F. Park Lewis of Buffalo, chairman, presented a report discussing the etiology of blindness in the United States. The purpose of the committee was not to discriminate as to different methods of procedure, but to solve the problem of how best to put into execution a course of procedure of known value. That the subject of prevention of needless blindness had been sorely neglected was shown by the statement that in New York State, for instance, midwives had no legal status save in a few of the western counties, and that forty-two per cent. of the total number of births last year in Greater New York were presided over by women required to have no standard of efficiency and under no adequate supervision. The committee reminded the House of Delegates of the obvious duty of the State to protect the individual from injury through needless exposure to disease, whether it be smallpox, diphtheria, or ophthalmia, and that full responsibility must attach to any person caring for the mother and her new-born babe. Extensive popular education as to the dangers of the disease and the methods of its prevention must be undertaken. Unwilling, without further advice, to recommend a detailed plan of procedure on so important a matter, the committee recommended that its work be continued, and that it be permitted, with the advice and consent of the chairmen of the sections on Ophthalmology, Obstetrics, and Hygiene and Sanitary Science, to formulate a detailed plan of procedure, with the cooperation of committees already appointed by the Academy of Ophthalmology and Oto-Laryngology and the American Ophthalmological Society, in making effective such a plan as may be determined upon. The committee also recommended that the Health Officer of each State or Federal Territory, and the president of each State Medical Society be also invited to cooperate with the committee in carrying these procedures into effect throughout the United States. It was moved and seconded that the report of the committee be accepted and its recommendations carried out. The motion was adopted.

Report of Committee on Section on Tropical Medicine.—A communication from the chairman of the committee, Dr. Ludwig Hektoen, of Chicago, to the effect that it was not in a position to make any report, was read by the secretary, and the committee was continued.

Report of Committee on Plan of Organization of a Department of Public Instruction.—Dr. John G. Clark of Philadelphia, chairman, reported that the popularization of knowledge on scientific subjects had not extended in any marked degree to the field of medicine. Leading editors had found it difficult, largely through ethical considerations, to obtain satisfactory matter for publication. Inasmuch, however, as it was the citizen to whom we must look of assistance, through his individual effort and through legal means, to limit the ravages of disease, the layman as well as the physician must have more or less accurate information regarding its cause and prevention. The American Medical Association was competent indeed to meet this need, through the assistance of the public press. The investigations of the committee had led to the conclusion that four separate means should be followed to accomplish this education. First, the publication in the daily press of timely articles, as for instance, during a prolonged heated period caution as to how to prevent sun stroke; second, the organization of a central bureau to distribute in pamphlet form information which should be preserved by the laity for reference; third, the organization of public lectures at medical colleges, and under the auspices of the county societies, and, fourth, correspondence by circular letters with the individual members of the medical profession, thereby preventing professional lethargy. In this latter category must be included the discussion of venereal disease, uterine cancer, etc., which, from their nature, it would not be feasible to accomplish by other methods. The committee outlined the organization of a board of public education, composed of seven representatives, to be appointed by the President of the Association, and having a paid secretary to attend to editorial and executive work. The authorship of published articles, the committee thought, should not appear, the board accepting the responsibility for the publication. An appropriation would be necessary to meet the immediate expenses, and the committee suggested the sum of $3,500 per year to inaugurate the scheme, hoping that its continuance might be accomplished by aid through philanthropic channels. The report was referred to the Committee on Hygiene and Sanitation, with instructions to confer with the Board of Trustees as to the feasibility of the necessary appropriation and to make a comprehensive report upon all matter.

Dr. Craig moved an amendment to the by-laws to provide for the creation of a Board on Public Instruction on medical subjects.

Dr. Denslow Lewis of Chicago presented a resolution commending to the public authorities the exception from the category of obscene matter of all literature on matters of sexual education.

Tuesday, June 4—Second Day.

The meeting was called to order at 2:15 P.M., by the President, Dr. Joseph D. Bryant.

Report of the Reference Committee on Constitution and By-Laws.—Dr. George W. Guthrie of Wilkes-Barre, Pa., chairman, reported favorably upon amendments to the by-laws providing that the admission of dental and pharmaceutical members should be subject to confirmation by the House of Delegates, that representative teachers and students of the allied sciences resident in the United States and not eligible to regular membership might become associate members on the recommendation of the officers of a section and on election by the House of Delegates, such associate members to enjoy the same privileges and to be subject to the same conditions as regular members, and that representative teachers, students of sciences allied to medicine, and distinguished physicians of foreign countries might be invited by the general officers or by the officers of a section to attend the annual session and to take part in the scientific work. They should be designated invited guests, and should hold their connection with the Association until the close of the annual session to which they were invited. These amendments were adopted on motion.

The committee reported unfavorably upon amendments

proposed by Dr. Grosvenor of New York providing that all reports presented to the House of Delegates should be acted on seriatim, except such reports as contained only one proposition, and that in balloting for all elective officers and for the place of meeting of the Association each member of the House of Delegates should cast his own ballot. A motion was made and seconded to accept the unfavorable report of the Reference Committee.

Dr. Grosvenor then addressed the house. On the former amendment he remarked that much criticism had been heard in the past that committee reports had been made rather by wholesale. The present constitution, he said, had been adopted without consideration seriatim. To disarm such criticism, he thought the by-laws should provide for consideration of reports seriatim. Other members pointed out that the House was competent at any time to consider reports in this manner, but that a uniform rule would entail much needless loss of time. With reference to the second amendment Dr. Grosvenor believed that it should not be necessary for a member to present a formal objection to the procedure of electing officers by means of a unanimous ballot of the House cast by the Secretary—practically election by acclamation—but that he should have the privilege of balloting for whomever he chose, without appearing openly to oppose a leading candidate.

Dr. Cantrell of Texas considered the amendment entirely unnecessary, inasmuch as unanimous consent was required for the suspension of the rule on individual ballot.

Dr. Guthrie of Arkansas believed, on the other hand, in the maintenance of the utmost respect for the ballot, and approved the amendment.

The chairman of the Reporting Committee pointed out that adoption of the amendment would deprive the House of its own liberty of action. The report of the committee was adopted and the proposed amendment was defeated.

Report of the Committee on Scientific Research.—The Secretary read the report of Dr. Alfred Stengel of Philadelphia, chairman of the committee, showing that four grants, aggregating $550, had been made by the committee for the year 1907, to Drs. G. F. Ruediger of Chicago, H. T. Ricketts, Richard M. Pearce of Albany, and J. N. Wainwright of Scranton, Pa., for research work on various lines. The committee had restricted its grants as far as possible and had not used all of its funds, but requested a continuance of the same appropriation for the next year. On motion, the report was accepted and referred to the Trustees.

The Judiciary Council, Dr. G. W. Guthrie of Pennsylvania, chairman, had no report to make.

Report of the Committee on the Davis Memorial.—Dr. H. O. Marcy of Boston, chairman, presented a report showing contributions received during the last year, and asked that the committee be continued. It would make a special effort during the coming year and hoped to make a satisfactory showing next year. On motion, the report of the committee was adopted.

The resolution presented at the Monday morning session by Dr. Billings, requesting the Director of the Census to conduct an enumeration of ruptured and crippled children in the United States in connection with the next census, was reported favorably by the Reference Committee, and was adopted by the House without objection.

The Reference Committee returned to the House the report of the Committee on a Board of Public Instruction, with a favorable recommendation, save for that part relating to an appropriation, which was without its province, and asked that the question of the publication of the names of the authors of contributions to this work be laid before the House for its decision. The report was adopted on motion. Dr. Woodward recommended that the articles be unsigned, but hoped the matter would be brought before the House for a vote.

The resolution presented by Dr. Lewis of Chicago with reference to the dissemination of information on sexual hygiene and venereal prophylaxis, was reported back from the Reference Committee with a recommendation that it be referred to the Board of Public Instruction. The resolution was so referred.

The Reference Committee on Sections and Section Work reported back the proposition to insert in the *Journal* an advertisement regarding the Senn Medal award, recommending that the matter be referred to the Executive Committee of the Section on Surgery. The recommendation was adopted.

The Reference Committee on Legislation and Political Action reviewed the report of the Committee on Legislation, recommended its adoption, and that a vote of thanks of the House be extended to the Committee on Legislation. It also recommended that the House of Delegates indorse again the Army Medical Organization Bill and the bill for the restoration of the army canteen; that the matter of a department of public health be left in the hands of the "committee of one hundred," and the adoption of resolutions expressing appreciation of the efficient service to the profession rendered by the medical members of the House of Representatives. It favored the extension of the work of the Committee on Medical Legislation into the field of legislation by the several States.

The Army Canteen.—Dr. Mills recommended the adoption of the report as a whole, which motion was seconded. Whereupon Dr. Grosvenor of New York protested against the indorsement by the House of the recommendation in the report respecting the restoration of the army canteen, submitting his views and his reasons for believing such restoration to be undesirable, quoting General Sheridan and General Miles. Dr. Solis-Cohen of Philadelphia did not believe the matter to be germane to the work of a scientific organization, being essentially a moral question. Dr. Reed of Ohio, the chairman of the Committee on Medical Legislation, supported at length the recommendation of the committee. Dr. Jones of California drew a comparison of conditions at the Presidio before and after the abolition of the canteen, showing the great disadvantage, moral and physical, which had resulted from the change. Dr. Rees of New York and Dr. Guthrie of Arkansas opposed the restoration of the canteen on moral grounds, while Drs. Essig of Washington and Gile of New Hampshire were convinced that the matter was not a proper one to receive serious consideration by the House of Delegates. Dr. Chas. Richard, Major and Surgeon, U. S. Army, sought to make clearer in the minds of the House the true nature of the canteen, the advantages which the soldier had derived from its social and restraining influences, showing how the physical and moral being of the soldier had suffered since its abolition. The matter finally received a vote on an amendment to a motion to accept the report, providing that the House expressed no opinion upon the question of the canteen, and the report was so adopted.

Report of the Committee on Insurance.—Dr. John H. Musser of Philadelphia, chairman, said the committee had at present nothing to add to its report, published last December, in which it had set forth the result of its conference with the officers of the life insurance companies in New York, who, though at first

declining to meet the members of the committee in their official capacity and expressing their determination to negotiate with the individual examiners rather than with the profession as a whole, had among themselves agreed upon a common course of action. The Equitable and Mutual companies had declined to restore the $5 fee unless the New York Life did the same. There the matter stood. The committee was convinced that $5 should be the minimum fee for a life insurance examination. It had now nothing further to report and asked that it be discharged. Dr. Work of Colorado offered a resolution approving the report of the Committee on Insurance and urging action in accordance therewith upon the county societies. Upon the motion of Dr. Cantrell of Texas the matter was referred to the proper Reference Committee.

Dr. Lund announced that the Reference Committee would be glad to hear all those who wished to appear before it in connection with the report of the Committee on Medical Education.

The Reference Committee on Constitution and By-Laws presented an amendment providing for the organization of a Board of Public Instruction to consist of seven members, to be appointed by the President, the term of service to be four years.

Dr. Lewis of Chicago, on behalf of the Section on Hygiene and Sanitary Science, and by its instruction, requested a report on questions presented last year upon matters of sexual hygiene, etc., and then referred to the Committee on a Board of Public Instruction. After some discussion, on motion of Dr. Craig, these resolutions were recalled from the Committee and referred to the Committee on Sanitation and Public Health.

It was announced that the sixteenth International Medical Congress would be held in Budapest in 1909, and that Dr. J. H. Musser of Philadelphia had been appointed chairman of the American Committee on the International Congress. A motion for confirmation of Dr. Musser's appointment by the House of Delegates was adopted.

Dr. D. A. T. Bristow of New York presented a resolution providing for the appointment of a committee of five on nomenclature and classification of disease to cooperate with representatives from other bodies interested, in order to send a suitable delegation to the Paris Commission in 1909, which would revise the international classification of causes of death. The resolution was adopted.

Dr. Richard Cabot of Boston presented a resolution aimed to eradicate rabies. The resolution was referred to the proper committee.

GENERAL SESSION

Tuesday, June 4—Second Day

The meeting was called to order by the retiring President of the Association, Dr. William J. Mayo, of Rochester, Minn.

Prayer was offered by the Reverend H. M. Gessner, Pastor of the First Presbyterian Church of Atlantic City.

His Honor the Mayor of the city, F. P. Stoy, in a graceful address extended a cordial welcome to the convention, presenting to President Mayo the key of the city.

Dr. Alexander Marcy, President of the Medical Society of New Jersey, welcomed the Association, on behalf of the medical profession of the State, on the occasion of its third convention to be held in Atlantic City during seven years. Owing to the rapid growth of the Association it would soon be difficult to find elsewhere the necessary accommodations for the annual convention, and sooner or later a permanent meeting place would have to be considered. When that time should come New Jersey would offer its incomparable Atlantic City, and say to the association: "Come and abide with us forever." The time was not far hence when no reputable physician could afford not to be a member of the Association.

The President introduced to the convention the following named foreign guests: Dr. Gustav Killian, Freiburg, Germany; Dr. Charles Trow, Toronto; Dr. George T. Ross, Montreal; Professor Küster, Marburg, Germany; Professor Kocher, Berne, Switzerland; Dr. D. G. Wishart, Toronto; Professor Hess, Wurzburg; Dr. Reeves, Toronto; Professor Adami, Montreal; Mr. Herbert J. Paterson, London; Professor Schmieden.

Reports were presented by Dr. Philip Marvel of Atlantic City, Chairman of the Trustees' Committee of Arrangements, and Dr. W. Blair Stewart of Atlantic City, Chairman of the Local Committee of Arrangements, summarizing their work, acknowledging the hospitality of the city, and making necessary announcements.

Dr. Mayo then said that it was his pleasing duty to introduce the incoming President, "a man who is so well known in this country that although his home is in New York his election came, not from New York, but from the whole of America—author, teacher, and surgeon—Joseph D. Bryant of New York."

President's Address.—Dr. Bryant then delivered the Presidential Address (see page 925).

Evening Session

The second general session was held on Tuesday evening, the order of business being the delivery of the general addresses.

Oration on Medicine.—Dr. James B. Herrick of Chicago took as his subject in this address "The Relation of the Clinical Laboratory to the Practitioner of Medicine." The change that had been brought about in our conception of disease and in the manner of its detection through the discovery and invention of instruments and methods of precision and the application of improved laboratory technique was one of the most striking characteristics of the marvelous advance in medicine of the last half century. To realize what this means, he said, one had but to think for a moment how comparatively helpless we should be were we suddenly deprived of bacteriological aid in diagnosis with its attendant specific serum reactions; of the improvements in technique of the last fifty years in the way of microscopy, stains, section cutting, etc.; of the study of the corpuscles of the blood and the estimation of its hemoglobin; of our knowledge of the chemistry of the stomach; of the cytological, bacteriological, chemical, and physical facts concerning normal and pathological fluids of the body; of the means of measuring blood pressure; of the numerous electric light appliances enabling us to explore nearly all the orifices and cavities of the body; of the Roentgen ray; of the improved qualitative and quantitative chemistry of the urine and feces; of aids from physical chemistry. Nothing had given a greater uplift to medical thought and practice, and especially to diagnosis, than the laboratory. Its aid was indispensable. But it had its own proper place. The earlier tendency to overvalue its work and to undervalue that done at the bedside was having the natural result in a swing back of the pendulum, and we were now hearing voices on either side of the Atlantic cautioning against the undue magnification of the laboratory at the expense of other aids to diagnosis. In our own country several writers had recently referred to the subject, and within a few weeks a large body of select medical men—the Congress of American Physicians and Surgeons—had considered the subject in a symposium, "The Relative Value of Laboratory and Clinical Methods in Diagnosis."

Certain mistaken notions had obtained regarding labora-

tories, which had led at times to strained relations and misunderstandings between the practitioner and the laboratory expert. These were due to faults that lay partly in the laboratory worker, partly in the physician. There was often a failure on the part of the laboratory worker to acknowledge his limitations. He should bear in mind the possibility of error in technique or of false interpretation of the facts observed, and the fact that we were more or less even yet ignorant of some of the common laboratory reactions; he should ever be on the lookout for artefacts; he should hesitate to assert positively from microscopical examination alone that a smear from a throat does, or especially does not, contain diphtheria bacilli, or that a cellular form observed is the *Amœba coli*. He should always realize the gravity of the duty imposed upon him by the practising physician; he is often so remote from the patient that he does not feel the personal responsibility that weighs upon the clinician, and so, not realizing the importance which may attach to his decision, he may make it on insufficient grounds. Were he to feel the full import of this decision, in doubtful cases he might admit more frankly to himself and to the physician his inability to reach a positive conclusion. Repeated or later examinations could then be made, thus clearing up the diagnosis. Or, if the result were still inconclusive, he should be ready frankly to admit that he did not know. Finally there was a tendency for some laboratory workers to step beyond their province and make diagnoses that were unwarranted by the facts and perhaps unasked for, and even to advance a prognosis and advice as to treatment. The laboratory's function ceased when its findings were announced. The interpretation of the laboratory findings rested with the practitioner. No sharp line should be drawn here, for the man in the laboratory and the clinician should work together; but Dr. Herrick would criticise such a laboratory report which he had seen more than once, as: "This urine is from a typical case of chronic interstitial nephritis" when it was not; it was from a typhoid patient drinking huge quantities of water and passing urine of low specific gravity and of large amount, with a trace of albumin and an occasional cast. Often he had seen the positive diagnosis of pernicious or secondary anæmia made from a blood smear alone sent in to a laboratory—a possible, but risky diagnosis. And many times he had seen a report that said in substance, often in so many words on the basis of a Widal reaction: "This is (or is not) a case of typhoid fever." And when free hydrochloric acid had been found in the stomach contents the statement was returned: "This is not a case of carcinoma." Such reports were wholly unwarrantable and inexcusable. Nothing had done more to bring the laboratory into disrepute than this irrational, almost meddlesome, method of venturing a diagnosis on wholly insufficient grounds.

The physician had done his share in creating more or less prejudice against the laboratory by failing to recognize its limitations and by holding the notion that laboratory methods were infallible and rendered unnecessary careful bedside observation. Consequently misinterpretation of laboratory findings by the practitioner was common and was grave. And this was due to no fault on the part of the laboratory, but rather to the shortcomings of the methods themselves and the failure on the part of the practitioner to take cognizance of this fact. Many of the aids to diagnosis were regarded as too far-reaching and comprehensive; they were looked on as pathognomonic and as without exception infallible. This came about because earlier reports as to the value of these tests were often rosy-hued and conclusions were sweepingly and definitely stated. The later observations throwing doubt on the method were slower to get into print and were less likely to attract the attention of the busy practitioner than was the favorable report. The physician, furthermore, had no right to throw the entire responsibility of an important decision on the laboratory. The decision in a perplexing case should be a combined one, the men working as colleagues, and each man sharing in the responsibility. These faults—of laboratory worker and of medical practitioner—were not irremediable, the author maintained. The solution lay in two directions—first, in a better practical training of the undergraduate in laboratory technique and methods so that he might realize the difficulties, limitations, and possibilities of the laboratory; second, in the closer relation between the laboratory expert and the clinician and when possible their union in the one individual. The closer the laboratory and the patient the less the liability to error. The less the scattering of responsibility the surer was the responsibility to be met. To these ends there should be laboratories in our medical colleges for the training of undergraduates, and these should be as closely connected with the wards of the hospital and the clinic as possible. No modern hospital should be regarded as well equipped that did not make provision for a laboratory. The ideal would be for each practitioner to have his private laboratory, but practically for the majority of physicians this was not feasible. Groups of men might, however, combine to employ some young man to do their laboratory work. Similarly the county medical society might have its clinical laboratory under the charge of some young man, paid a salary or fees for separate examinations, who would conduct a laboratory to which any member might feel free to go for the help that for various reasons he could not get in his own office. Laboratories for counties had already been established and, if not too much entangled in politics, ought to be successful, especially in the way of guarding the health of the community and in aiding in the diagnosis of charity cases. In the same way municipal laboratories had become a recognized feature of the modern city, though the carelessness of the political appointee or his incompetence often detracted from the value of their results. Commercial clinical laboratories in our large cities were of great service and had a legitimate place, their value depending on the personnel of their staff and on how far they permitted the commercial side to overshadow the scientific. What the orator contended for, therefore, was not less laboratory work, but more, more for the undergraduate and more for the practitioner.

In concluding, Dr. Herrick said that one should not look on the laboratory as a short cut to a diagnosis. Sometimes it was, but often its workings were slow and cumbersome, and because of their complexity the results were not easily expressed in practical, every-day, usable terms, and were, therefore, inconclusive or confusing. In other words, the laboratory diagnosis was not yet one of machine-like accuracy. The time had not yet come when a diagnosis could be made without the exercise of brain power. We did not wish our professional work to be degraded by being "dementalized," to use Weir Mitchell's expression. Anamnesis, physical, and laboratory findings were to be studied and compared and a result reached that not only gave a name to the disease, but gave a conception of the disease as it existed in the particular individual, with all that such a comprehensive diagnosis implied in the way of prognosis and hints as to therapy.

Oration on Surgery.—Dr. WILLIAM H. WATHEN of Louisville delivered this oration, taking as his title "Acute Suppurative Peritonitis (Local, Spreading, Diffuse, and General)." One reason for selecting this subject for an address before a general medical audience was, he said, the fact that the essential questions involved in the study of the etiology, pathology, diagnosis, and treatment of acute suppurative peritonitis were of equal interest to the internist and the surgeon. The greatest success of surgery in saving life in these cases depended on early surgical diagnosis and timely operation, before pathological condi-

tions could develop that might so impair the vital resistance of the body tissues as to cause death of the patient with or without surgical intervention; and as these patients usually first consulted the internist, early operation was impossible unless the surgeon was promptly associated in consultation. The intrauterine life and at birth the intestinal canal was sterile and remained so until bacteria had been introduced with the food. The bacteria ordinarily found in the alimentary canal varied according to the food, but the one constant normal inhabitant was some type of the colon bacillus; in childhood the *Bacillus lactis aërogenes*, closely related to the *Bacillus coli*, was also normally present. These two germs, independently or jointly, might conduce to health by aiding digestion, antagonizing intestinal putrefaction, and inhibiting the growth of pathogenic intestinal bacteria. In splitting carbohydrates they generated acids which limited intestinal putrefaction by the proteolytic bacteria, and might prevent pathological processes which would otherwise develop in the existing alkaline fermentation. So long as there was perfect digestion, absorption, and assimilation, the great number and variety of bacteria living on the carbohydrates and proteids were not only harmless but conducive to health, but when some pathogenical condition in the gastrointestinal tract disturbed the circulation, digestion, and nutrition, they might quickly become mildly or virulently pathogenic, multiplying rapidly and generating toxic substances in the tissues of the body, or causing peritonitis by passing through injured walls or a perforation into the peritoneal cavity.

Since bacteria were introduced with the food it might be reasoned that the intestine when emptied of its contents would become sterile, and experimental investigation had shown the truth of this assumption. It was possible to utilize these facts in certain intraperitoneal operations and sterilize the stomach and some part of the upper intestine by giving the patient no food by the stomach for several days before he was operated on; or, when the patient's condition would not admit of this, by giving sterile liquid food, and have him cleanse his mouth frequently with some efficient antiseptic liquid for a few days.

The infectivity and virulence of bacterial invasion of the peritoneum was measured by the relative number and pathogenic powers of the bacteria that entered the peritoneum from the different parts of the gastrointestinal tract, the virulence being greatest when the infection occurred from the lower part of the ileum with the maximum intensity at the ileocecal and appendicular region. In perforative duodenal ulcer the leakage into the peritoneal cavity was often free of pathogenic bacteria and did not cause diffuse suppurative peritonitis, and when infective bacteria were present they were usually so mildly pathogenic that the resultant peritonitis remained local or spread so slowly as to admit of successful surgical interference. This applied also in pyloric perforation, because of the character of the contents in this part of the stomach, and also because of its relation to adjacent structures to which it might quickly form adhesions to close the perforation, or to localize the infection. It was not true, however, in ulcerative perforation of the cardiac end of the stomach, because the anatomical relations were so entirely different as to minimize the protecting influence of adhesions to adjacent structures in closing the gastric opening or in limiting the area of infection, and also because of the greater number and virulence of the bacteria in the leakage, for these perforations often occurred with food in the stomach containing bacteria that acid secretion had not destroyed.

As acute suppurative peritonitis was often caused by the invasion of pathogenic bacteria from the organs contained in the pelvis, it would be well to consider briefly the bacteriobiology of the vagina, uterus, Fallopian tubes, and urinary bladder. No pathogenic bacteria inhabited the upper part of the vagina, the cavity of the cervix or body of the uterus, or the bladder when these organs and the kidneys were in a state of health, and pathogenic bacteria were found only in diseased conditions of these structures, having been introduced from without by infected media. With an intact and normal epithelium of the urinary tract, bacterial growth was inhibited and the urine was free of bacteria and in no sense infective. But any part of the tract or the entire tract might become infected by the tubercle bacillus introduced through the kidneys, or by pyogenic germs of any degree of infectivity introduced through the urethra, and under such conditions acute suppurative peritonitis might result from perforation or rupture of the bladder. Pathogenic bacteria might be abundant at the vulva and in the lower part of the vagina, but they could not be cultivated from the secretions of the upper part of the vagina or in the neck or body of the uterus, the acid secretions of the lower half of the cervix and the vagina positively inhibiting bacterial growth. The uterus and Fallopian tubes might be infected, however, by bacteria of all degrees of pyogenic and pathogenic virulence, resulting in mild or fatal forms of toxemia or septicemia or local and diffuse acute suppurative peritonitis.

In conclusion, Dr. Wathen emphasized in a general way a few things, on the observance of which might mainly depend success in the operative treatment of all perforations into the peritoneal cavity, and in the prevention and treatment of local, diffuse and general peritonitis from any cause.

"1. Operate as soon as a surgical diagnosis is made and avoid purgation and opium before and after the operation. Give no food or liquid, and if there is no gastric perforation empty the stomach by lavage, and remove fecal matter from the colon by rectal enemata.

"2. Operate rapidly and, if possible, treat the foci of infection by suturing gastrointestinal perforations, or bladder wounds, by cholecystectomy or cholecystostomy, by appendectomy, or the removal of the uterus or its adnexa, always remembering to avoid peritoneal traumatism so as to protect peritoneal resistance to bacterial invasion and toxemia.

"3. Expose or handle the intestines as little as possible, and do not separate adhesions or irrigate or sponge the peritoneal cavity. Establish drainage from the bottom of the pelvis through a suprapubic incision, and, if indicated, also drain the site of infection, using a large split rubber tube with or without gauze, with the patient in nearly a sitting posture.

"4. Pour into the peritoneal cavity, before closing the abdominal wound, hot horse serum or saline solution to stimulate leucocytosis, and when the patient is returned to bed use saline solution by rectum, after the fashion of Murphy, and, if necessary, use the horse serum or saline solution subcutaneously.

"5. Enterotomy is never indicated, except in some delayed cases of intestinal obstruction or paresis, and it should then be performed quickly and with a minimum exposure of the intestine; enterostomy is contraindicated.

"6. Physicians should be educated to impress on their patients the fact that acute diffuse and general peritonitis may usually be prevented by the early surgical treatment of gastric or duodenal ulcer, cholelithiasis and cholecystitis, appendicitis, tubal and ovarian infections, and acute intestinal obstruction; also in many cases of gastric and duodenal perforations."

Finally, the orator insisted with special emphasis upon the fact that the treatment by purgation, opium, and delay of the pathological conditions that caused acute local, diffuse, and general peritonitis, and bacteriemia and toxemia, had caused more deaths during the last ten years than had been sacrificed on the battlefields of the world;

and that in this progressive age of civilization he who obstructed the progress of science, medicine, and surgery in the prevention and cure of disease and the prolongation of life, was committing an offense against the State, humanity, morals, and religion for which the ethics of his environment may cause the people to hold him to a rigid accountability.

Wednesday, June 5—Third Day.

Address on State Medicine.—Dr. SAMUEL G. DIXON of Harrisburg, Commissioner of Health of Pennsylvania, delivered this address, taking as his subject, "Law, the Foundation of State Medicine." On State medicine, he said, the happiness of the people and the prosperity of the nation depended, for that nation would be strong which was vigorous in the health of its individuals. The contention that the enforcement of sanitary laws could be an infringement of personal liberty was puerile, for, as Parks has said, if we would aim to render growth more perfect, decay less rapid, and life more vigorous, we must give up many primitive or individual liberties. One factor in bringing about the wonderful achievement of the Japanese army was the high rank accorded to their medical and sanitary departments. In their particular branch of the service these men were supreme. In all great movements they were consulted. Unless a military necessity prevented, they supervised routes of march, sources of water supply, and sites for encampment. So long as the medical service was made subordinate to the strictly military service in our own army, so long, the speaker said, would repetitions of the disgraceful slaughter of Camp Alger and Chickamauga be of common occurrence in our military operations. In all matters pertaining to the health of the troops the medical staff of an army should be the authority, and in all councils of war their voice should be of equal authority with those of the combatant officers. It was only the skill of the medical officers of our army that made the present occupation of Cuba by our forces possible without frightful loss of life. It was only their knowledge of the mysteries of the transmission of the *Plasmodium malariæ* and the yellow fever microorganism by mosquitos that had enabled us to undertake the construction of the Panama canal and to convert the Canal Zone from a valley of death into a region in which men could live and labor in health and safety. Our legislators, Dr. Dixon said, were in general striving to do what was for the greatest good of the community in health matters, but they could not always distinguish between the true advisers and the false, between real scientists and pretenders, and the only way was for the Government to call upon educated medical and sanitary experts for advice; better yet it would be, if, as had been so often urged, there were established a Department of Health with a Secretary, a Cabinet Officer, at its head. The keynote of State Medicine was, however, compulsion and not persuasion. Without the law to back it, State Medicine might be a beautiful science, but it could never be a practical art. Certain public health questions were of national concern, and such matters as the prevention of the pollution of interstate rivers and streams, the prevention of food adulteration, and the sanitation of public conveyances on interstate lines of travel, both by land and water, must be controlled by federal law. The author then spoke of recent sanitary legislation in Pennsylvania. The first noteworthy enactment was the substitution in place of a State Board of Health of a Department of Health with a single official at its head, having a seat in the Governor's cabinet. The same legislature which gave the commissioner such broad powers also placed under his charge all the waters of the State and laid on him the duty of reclaiming them from pollution. No new system of water works for the supply of water to the public, and no addition to a system already existing, and no new sewerage system or addition to a sewerage system already existing could be made without a permit from the commissioner, in whose office must be filed certified copies of the plans, surveys, and descriptions of such systems. Pennsylvania was until recently without a State system of registration of vital statistics, but this was now no longer the case. The legislature had passed an "Act for the Immediate Registration of Births and Deaths," and to make this law effective in the rural districts nearly a thousand local registrars and two hundred subregistrars had been appointed.

An Epitome of Sanitary Legislation in the Several States.—Dr. Dixon then presented a review of what had recently been accomplished by other States in the way of sanitary legislation, the data for which had been furnished by a special bulletin of the State Board of Health of Rhode Island and the Providence Plantations compiled by Dr. Charles V. Chapin. In 1905, which was a year of unusual activity in sanitary legislation, the matter of registration was taken up in California, Connecticut, Michigan, Minnesota, South Dakota, Utah, Wisconsin, and Nebraska. In five of these States a complete system was inaugurated. These were California, South Dakota, Utah, Wisconsin, and Nebraska. In the remaining three, the acts were intended to remedy defects in systems already existing. These were Connecticut, Michigan, and Minnesota. In California, in addition to the complete law for the registration of deaths only, the old law for the registration of births and marriages received several amendments. A law establishing a State Board of Health or considerably enlarging its powers was passed in Minnesota. Acts establishing or regulating local boards of health were enacted in Indiana, Minnesota, Nevada, New Jersey, and Oregon. In Nevada and Oregon, county boards of health were created. Legislation for the better control of contagious diseases was accomplished in California, South Carolina, Maine, Tennessee, Utah, and Wisconsin. Emergency funds were established for special use in epidemics in Maine, Pennsylvania, and Wisconsin. Hospitals or sanitoria for consumptives were projected, established, or aided in Massachusetts, Michigan, Missouri, Rhode Island, Wisconsin, Georgia, Indiana, and New Hampshire. Acts to regulate the practice of medicine were established in fifteen States—Colorado, Indiana, Michigan, New York, Missouri, South Carolina, South Dakota, Tennessee, Texas, Washington, Wyoming, Florida, Michigan, North Dakota, and Wisconsin. The action of Colorado, Michigan, Wyoming, Nevada, and Wisconsin in forbidding the granting of licenses, or certificates, or registration to persons guilty of immoral, dishonorable, or unprofessional conduct, and empowering the State boards or courts to revoke and annul any license or certificate issued to such persons, cannot be too highly commended. Laws regulating the practice of undertaking and embalming were adopted in Illinois, Indiana, Massachusetts, New York, Pennsylvania, West Virginia, Wisconsin, Minnesota, North Dakota, and Oklahoma. Cigarette smoking was considered an evil of such magnitude as to require prohibition in Arizona, Indiana, Nebraska, Oklahoma, and Pennsylvania. State laboratories for bacteriological or chemical analysis were established in California, Connecticut, North Carolina, Wisconsin, and Pennsylvania. The practice of osteopathy was legalized in Colorado, Indiana, Montana, Nebraska, Tennessee, South Dakota, and New Mexico. The examination and registration of nurses was provided for in California, Colorado, Connecticut, and New Jersey. More stringent provisions to regulate the sale of poisons and narcotic drugs were adopted in Connecticut, Massachusetts, Minnesota, Nebraska, North Carolina, Texas, and Wyoming. An act to provide a method for locating and destroying mosquito-breeding areas had been adopted by the State

of New Jersey. This list indicated an advance, but there was always need of vigilance on the part of sanitarians. Anyone who was on the ground during a session of a State Legislature could but be struck with the amount of crude, ill-digested, and even nefarious legislation of this kind which was presented, and with the necessity for having intelligent medical men on the spot who could watch purely commercial schemes presented under the guise of sanitation and science and inform the legislators of their true character. An intelligent and conscientious chief executive was, however, often the only bulwark against disaster.

The speaker then referred to the scheme now being outlined in Pennsylvania for the limitation of tuberculosis. It contemplated utilizing the great forest reservations of the State for the purpose of hospital or sanatorium treatment. It was proposed to have two colonies at widely separated points that they may be accessible from different parts of the State. Instead of large and massive structures of brick or stone, there would be erected a large number of frame cottages, each of which would accommodate a small number of patients. Somewhat apart from these would be an infirmary for those in the more advanced stage of the disease. In this building those to whom hopes of recovery could not be held out would be afforded shelter and comfort in the closing days of life, and this extension of relief would be more than justified in the fact that such patients would be removed from their confined, crowded, ill-ventilated, and often impoverished homes at the time when they would be most in danger of communicating the disease to others. In addition to this, it was planned to establish in each of the sixty-six counties of the State a dispensary for tuberculosis, under the direct supervision of the Department of Health. The object of these dispensaries will be twofold: Many patients who might be unable to leave their homes for a prolonged stay in a sanatorium could frequently go there for advice in regard to matters of diet, medication, and the open-air treatment, so far as it was possible of being carried on at home. They would also receive careful instruction in all the precautions necessary to be observed for the protection of others. In this matter of the care for the tuberculous and the limitation and prevention of the disease, the speaker hoped to see a generous rivalry between the States, so that each might deserve well of the republic.

SECTION ON PRACTICE OF MEDICINE.

Tuesday, June 4—First Day.

DR. THOMAS D. COLEMAN OF AUGUSTA, GA., IN THE CHAIR.

Early or Premonitory Symptoms of Pernicious Anemia.

DR JOHN H. LICHTY of Pittsburg read this paper, in which he said, as far as we knew, pernicious anemia is the result of a toxemia. The symptoms and course of the diseases were clearly in accord with this, and the study of the bothriocephalus anemias permitted scarcely any other conclusion. What the exact nature of this toxin was was still a matter of speculation and doubt. It was generally accepted that its origin was in the intestinal canal. In a recent paper by Dr. C. A. Herter it was shown that the *Bacillus aërogenes capsulatus* was an active hemolytic agent, and that when the *Bacillus coli* type was sufficiently meagre to permit a very large growth of the *B. aërogenes* alterations appeared in the blood similar to a secondary or pernicious anemia. The blood change was not the cause of the symptoms—it was a part of the symptom complex of pernicious anemia. Other prominent symptoms were loss of muscular power, dyspnea and cardiac oppression, pallor, edema, subcutaneous and submucous hemorrhage, loss of appetite, achylia, diarrhea or alternate diarrhea and constipation together with certain nervous manifestations. From the literature on this subject it was evident that there was no recognized regularity in the order of the appearance of symptoms. The blood picture generally gave a high color index, with megaloblasts and megalocytes, and these were pathognomonic, but before this appeared certain premonitory symptoms arose which would lead one to make a most thorough blood examination. If the blood examination was negative and other diseases could be excluded, a provisional diagnosis should be made and the patient treated accordingly.

DR. GEORGE B. HERRICK of Chicago said that it was necessary to look back into the patient's past history and find out about gastrointestinal symptoms, as well as paresthesias. In case of changes in the cord, tingling of the fingers or toes was frequently present. Hunter had called attention to the fact that these cases often have sore tongues and sore mouths.

DR. W. S. THAYER of Baltimore said that pernicious anemia was more common than was generally supposed. He spoke of the importance of the early nervous symptoms, and particularly of paresthesias of the lower extremities with ataxia, while the upper extremities showed increased reflexes.

DR. F. F. GOODWIN of Mount Vernon, N. Y., said that from a study of pernicious anemia he was led to believe that all anemias arise from some disturbance in the gastrointestinal canal, such as the fermentation of carbohydrates or the partial oxidation of protected substances like nucleoalbumin.

DR. G. W. MCCASKEY of Fort Wayne, Ind., said that all were agreed that pernicious anemia was due to a toxemia, but whether that toxin came from the gastrointestinal canal or some other part of the body was a question still unanswered. He thought it was of great importance in these cases to estimate the amount of iron excreted. If, as is usual in these cases, there is a destruction of the red blood corpuscles then there would be an increased amount of iron excreted in the urine. This also was true in most of the chronic nutritional diseases.

DR. MAX EINHORN of New York City spoke of a patient with achylia who developed pernicious anemia. For three years this condition was still unchanged. He was improved somewhat on a liberal diet, low in meat.

DR. H. S. ANDERS of Philadelphia considered floating kidney an etiological factor.

DR. N. S. DAVIS of Chicago wished to speak of early degenerative changes that took place in the spinal cord in these cases. When one met with a case of ataxia pernicious anemia should be thought of and the case should be watched to see if this condition developed, even if the blood examination showed only a moderate anemia.

DR. C. S. HOOVER of Cleveland asked whether anyone had seen recovery in a case of pernicious anemia after spinal cord symptoms had developed?

DR. FRANK SMITHIES of Ann Arbor said that many physicians were apt to neglect the blood examinations. Many cases would show cardiac disturbances. One examination of the blood was not enough, but five or six examinations must be made. He had always found oval cells in the early part of this disease. The doctor asked Dr. Lichty what was his interpretation of the so-called "megaloblastic showers?"

DR. LICHTY closed the discussion by stating that the "megaloblastic showers" were a sign of the approaching end. He agreed with Dr. Davis and Dr. Hoover in regard to the changes in the spinal cord, but did not think that a movable kidney could cause pernicious anemia. He wished to bring out one point, that of the occurrence of cardiovascular symptoms in the early cases and the great importance of blood examinations.

Some Observations on Digestive Conditions in Pulmonary Tuberculosis.—Dr. James Rae Arneill of Denver, Colorado, read this paper. He said that during the last ten years he had been greatly interested in enteroptosis and had been on the lookout for this condition in patients of all classes. The frequency of this condition in slender patients, suffering with malnutrition, psychoneuroses, and tuberculosis was decidedly impressive. Most examinations of tuberculous patients did not include an examination of the abdomen. If one palpated the kidneys, and looked for Stiller's sign, the contracted colon, and the succussion sound in the stomach and the large intestines, he would find a surprising number of enteroptosis cases. Patients born with the enteroptotic type of physique were prone to malnutrition, psychoneuroses, and tuberculosis. Analysis of the stomach contents and the motor power were very often valuable aids in treatment. The most effective treatment was fresh air, absolute rest, generous feeding, attention to the skin and bowels, optimistic suggestion, and isolation with diversion and exercise. In the consumptive the cure must be prolonged and modified to meet conditions. Notwithstanding the remarkable work done along the line of opsonic therapy, our sheet anchor in the cure of tuberculosis must be the nutrition of the patient. Gain in weight and increased adiposity were only a part of nutrition. Rest, exercise, and fresh air were all of value, because they increased the appetite and oxidation. The average case of indigestion in the consumptive could be treated on symptomatic lines. Bitter tonics, hydrochloric acid and ferments, alkalies and antifermentatives were used when indicated. Application of some form of abdominal bandage was often of value in properly selected cases. Operative interference was occasionally necessary in the tuberculous patient, such as gastroenterostomy and appendectomy, in order to correct serious digestive disturbances. The successful treatment of tuberculosis chiefly depended on intelligent guidance of spontaneous resistance and recovery.

Dr. Woods Hutchinson of New York City opened the discussion on this paper. He said that there was more in pulmonary tuberculosis than the discovery of the germ or the signs brought out by the stethoscope. The most important information was found outside of the chest. The changes in the heart and abdomen were important. Often the heart was distinctly undersized, the stomach dilated, and the colon displaced.

Dr. Judson Deland of Philadelphia spoke of the importance of the use of the *x*-rays in diagnosis and as an aid in determining whether the supporters were doing their work by holding the organ in its proper place. He said that graded courses of exercises were most beneficial.

Dr. M. G. Lichty of Cleveland brought out the relation of consumption to gastrointestimal diseases.

Dr. J. H. Wetherspoon of Nashville, Tenn., said that he thought hyperchloracidity was a much graver condition than hypochlorhydria

Dr. Arneill in closing the discussion spoke of the importance of altitude in the treatment of these cases. He referred to the experiments of four noted German physiologists who made observations upon soldiers in the Alps. They found that low barometric pressure was followed by an increased proteid metabolism, also that low barometric pressure increased the activity of the blood-forming organs A high altitude gave 20 to 30 per cent. more hemoglobin.

The Continued Fevers of Southern Georgia.—Dr. H. F. Harris of Atlanta, Ga., read this paper. He said that this continued fever was known under different names, such as "slow fever," "Wallacoochee fever," and typhomalarial fever. It lasted from one to ten weeks. It was considered by some as malarial, by others as typhoid. The onset often came with a chill, the temperature was comparatively high, and the usual manifestations of a malarial paroxysm were present, but plasmodia were not found Other cases began like typhoid. The speaker had studied forty-five cases, making observations of the blood, urine, and feces, and in seventy-five per cent. typhoid or paratyphoid bacilli were isolated. In some cases a mixed infection was present. The prognosis was good. He thought medication did not modify the course of the disease, although some believed that large doses of quinine were beneficial.

Dr. J. H. Wetherspoon of Nashville, Tenn., said these cases of continued fever were not similar to malarial fever or typhoid and that quinine was not effectual. It began with a chill, there was rapid prostration, and the patient was irritable. The tongue was not that of a typhoid case neither was the pulse, which was rapid, and the belly was not tympanitic. If tenderness was present, it was over the liver or the sigmoid. This fever was not affected by the season of the year. The patient was constantly hungry and there was a rapid change in temperature similar to that of a septic case.

Dr. Wood of Wilmington, N. C., said that these cases were mild typhoid and gave a positive Widal reaction. It was most important to teach people the great danger of these cases.

Dr. John W. Litchy of Pittsburg said that a similar discussion had taken place in Louisiana. In Pittsburg where no malaria was they had "slow fever" cases and all gave positive Widal reaction.

Dr. Alexander Lambert of New York City asked if blood cultures had been made in any of these cases which were suspected as being typhoid. He said that in Bellevue Hospital 90 per cent. of the doubtful cases gave a positive culture of typhoid fever. Of course the Widal reaction varied in individual cases.

Dr. Howard Fussell of Philadelphia said the typhoid fever varied in form, but that the name typhomalarial was a shield of ignorance and should be banished.

Dr. Harris, in closing, said he accepted the view that this slow fever, so called, was a "mild" typhoid. In a few cases blood cultures were taken and the positive reaction obtained.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Tuesday, June 4—First Day.

Dr. J. Wesley Bovée, Chairman

The Status of the Fight Against Cancer of the Uterus.—Dr. J. Wesley Bovée of Washington delivered the Chairman's address, taking this as his subject. He said that from the many articles catalogued on the subject, the observer would think it was hackneyed and that great enthusiasm existed in the professional ranks concerning the treatment of cancer. There were many remedies presented, from surgery to the use of the newer remedies, *x*-ray, radium, etc. W. Dean Bluchcr modestly claimed a curative effect of radium on cancer, but did not claim that it would benefit uterine cancer to any great extent. The great things that have been claimed for some of the new remedies were very far from the actual facts. Those who were brought into actual contact with cancer of the uterus knew that it was one of the worst scourges flesh was heir to. It appeared that in no country, race, or society were women free from this disease. Some claimed immunity for the North American Indian, the inhabitants of Africa, and the negro of this country, but such was not true. Seldom was the speaker without a negro woman in his wards with cancer of the breast or uterus. It usually occurred during the few years preceding the menopause or after. It should be remembered that cancer of the uterus, whether of cervix or the body, was a local disease in

the beginning, but soon lost its local character, passing to surrounding tissues. The cancerous tissue was often isolated and at a distance from the focal point. It was important that there be a uniform classification, and Sampson of Albany had suggested a good working classification. Much work had been done to discover the cause, but no conclusion had been reached. Much was hoped from the bacteriological theory, and while it was possible to transfer from one animal to another, it had not been proved that the origin was a bacterial one. After all the most that could be said was that it might have its impetus from a chemical irritant circulating in the blood. The cancer age was from near the menopause to the end of life. This held true in the vertebrates other than human. The element of heredity was a very important one. The question of contagion should not be overlooked, for he had cases in which there seemed no doubt that the disease was communicated from another patient. Dr. Bovée quoted from A. Lapthorn Smith, who offered many instances in which cancer was communicated from one person to another and claimed that cancer had increased thirty per cent. in a decade. The question of vital import was the cure of cancer, and since it was admitted that it started as a local disease, there was great necessity of early diagnosis. The fact that the uterus was a concealed organ, that women often hesitated to have examinations, that the disease was one occurring at times near the menopause (the physician being often misled to think it was a condition associated with that event and did not make an early diagnosis) often prevented the early radical treatment. With the many handicaps the surgeon had not been able to demonstrate to the general practitioner that he could cure cancer by radical operation if taken in the early stage, and industrious effort would be necessary for years to overcome these obstacles. Women should submit to examinations at regular intervals when they have reached the cancerous period, the same as they would consult a dentist about their teeth. In this way they might be guarded against a progressive condition that would prove obstinate and fatal. All cervical tears or injuries should be repaired and prophylactic measures be employed. Radical operations in early cases had proved quite satisfactory. In the later stages of the disease Byrne's method of the galvanocautery had been beneficial. Trypsin was now much used in nonoperable cases. The uterus seemed too deep seated for use of the *x*-rays. In conclusion Dr. Bovée said stress should be placed on early diagnosis; special care in the classification of the varieties; *x*-rays and radium were of little use, and no time should be wasted with these when the case was an operable one; the cautery should not be used as a substitute for a radical operation, and the vaginal route did not offer as good results as the abdominal. He also suggested that all rooms occupied by cancerous patients should be fumigated before being occupied by the non-cancerous, and everything possible should be done to stamp out the disease.

How Can We Lessen the Mortality of Uterine Cancer?—Dr. E. E. Montgomery read this paper. He said the bacterial origin of cancer had not been proved, but the influence of heredity was an important factor as was also the resisting power of the patient. The fact of heredity might have to do with either the cancerous tendency or diminished resisting power. Most cases of cancer were found in women who had borne children and one of the great causes was injury or long irritation of the part affected. The damaged cervix was a factor to be heeded and all such conditions should be attended to. The treatment was preventive, curative and palliative and the first two were vital. Of course the early diagnosis was all important and if the cervix or the body of the uterus was in any way affected treatment should be directed to its correction. The general health of the patient was of vital importance and all gastrointestinal fermentation and irritation should be avoided and the patient should drink large quantities of water and if necessary sleep in the open air. Experience demonstrated that the earlier in life the disease occurred the more rapid was its progress, and at all times an accurate knowledge of the disease and its early recognition were essential for its radical removal and cure.

Dr. Howard Kelley of Baltimore said he would emphasize the necessity of the early diagnosis. He thought much could be gained by systematic classification, but found many varying individual cases. He thought much harm was often done to the patient by the length of the operation. That an operation requiring two or three hours was too much of a drain on the power of the patient. By the use of long clamps in clamping of the arteries the operation had been reduced in time.

Dr. Marstey said that he was using a modification of the zinc-mercurial cauterization he presented at New Orleans with good success in two cases. Instead of using a general anesthetic he applied the cautery as long as the patient could well bear it, one-half to one hour at 200 milliamperes without great discomfort to the patient. One of the patients had been well for over three years and the other for nine months.

Dr. Margaret A. Cleaves made a plea for the use of trypsin and said she had patients who according to all rules of the disease should be dead, but were living with no symptom of the disease. She had noticed that patients in whom trypsin was injected often reacted in markedly different manner. One presenting fever, chills, and all the serious evidences of eosmophilia and the other going along in a normal way. She had found these cases were different in that the former were sufferers from a malignant condition and the latter were not, although the diagnosis had been the same in both cases. If trypsin were administered many of the cases began to improve at once.

Dr. Boldt said that in patients 30 years of age the vast majority were doomed. It was important what route should be pursued in the operation. In cases over 50 years he advised the vaginal route as there was less shock to the patient and in these cases his experience with the abdominal route had not been good. He thought that radical operation was the right method.

Dr. D. L. Craig said that three years ago he had reported an investigation of cases treated in a hospital for women and that in cases where there were no lacerations or the cervix had been repaired there was no cancer, and he thought many cases were due to some form of irritation. The general practitioner could do much toward the prevention of cancer.

Dr. Carson said there were two important things to keep in mind; how to prevent and how to save the patient. He laid special stress on the fact that at some time it was a local disease; perhaps as big as a pin point or as a pea, but it was then a local disease and it was the physician's place to keep a watch for a starting point.

Dr. Montgomery said in closing the discussion that he agreed with the majority of the speakers and that other methods than the radical operation might in time prove to be preferable, but at the present and with the light we now had he held to the radical operation in all operable cases.

Parasitic Uterine Myomata.—Dr. Thomas S. Cullen said that by the term he meant myomata that had become completely or partially weaned away from the uterus and got their blood supply from another source. These might get the greater part from the omentum, the large or small bowel, the bladder, mesenteric vessels, or Fallopian tubes, or from several sources at the same time. In many cases the omental adhesions were associated with pelvic adhesions or with pus tubes. Sometimes the peduncle became very small and most or all of the blood supply came from some

other source. In cases where the blood supply was from the omental vessels they became very large and tortuous, but as a rule there were large arteries each accompanied by two veins. At first there might be but little omental change when the blood supply was from that source, but as the tumor increased the omental fat gradually disappeared. The function of the omentum seemed marvelous in some cases, as in one where the tumor weighed 89 pounds and was attached to the uterus by a very small pedicle, its chief supply coming from the omentum. In the operative treatment of these tumors one of the first things to do was to control the omental vessels. This could be done by tying off the omental vessels on the proximal and once on the distal tumor side. They were so delicate that they should be tied instead of using forceps. The arteries should be tied under sight and one should not attempt to liberate adhesions far under the abdominal wall as they might contain blood-vessels that would give trouble. Dr. Cullen showed illustrations of myomata and insisted that the greatest care be exercised in the operation lest a blood-vessel be ruptured.

Dr. Isaac S. Stone said that ten years ago he had written on that subject, but it had been passed in the way of many things. He thought it a most interesting subject and the writer had presented the subject most interestingly. He supposed that when a fibroid started on its way it might take an exceedingly varying course.

Dr. Boldt said the important point was the blood-vessels and the greatest care should be taken that they be not injured or the tumor removed until all were secured.

Prevention of Peritoneal Adhesions by Adrenal Salt Solution, with Especial Reference to the Pelvis.—Dr. Emery Marvel presented this paper. He said peritoneal adhesions resulted from a pathological process active within or adjoining to the peritoneum. Their formation was Nature's effort to combat an injurious process in which adhesions were good and a protection to the organs. In many cases they were injurious and it was desired to prevent them. The thin-walled vessels of the peritoneum favored free exudation of serum and became the agent by which the surfaces were united. Now in an operation the dilated blood and lymph vessels gave a leaking orifice with exudation that meant adhesions. To prevent adhesions the purpose was to dilute the serum and thus hasten absorption and prevent further exudation. Then too the irritated surfaces should be kept apart until partial repair had taken place. In order to remove the irritant and release the parts salt solution might be used, and then should be added to this for the purpose of preventing further exudation adrenalin chloride. The salt solution aided absorption of the secretions and the adrenalin prevented the exudation of further secretions. The bulk of the fluid kept the surfaces apart and thus the threefold purpose was accomplished.

Dr. Lawrence said much of the trouble from adhesions was due to the methods of operations. Too much was done in the abdomen and with all the drainage tubes, the sponges, the handling of the parts traumatism resulted and adhesions. Much of the adhesion was defensive and Nature's method of protecting herself, and as for himself he did not look with great favor upon the method advocated by the writer

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SECTION ON SURGERY AND ANATOMY.

Tuesday, May 4—First Day.

Address of the Chairman.—Dr. Arthur Dean Bevan of Chicago spoke on the importance of a further study of anesthetics and anesthesia, and, after commenting on the value of the findings of the British Commission, urged the creation of a similar body in this country. The use of gas as an anesthetic, he said, had until very recently been relegated to the dental fraternity, in the more progressive surgical centers this was now very generally being recognized as a great mistake. Cases of aneuria, among many others, were singularly suitable for the induction of anesthesia by gas—there was indeed a very long list of capital operations in which for a half hour or more anesthesia might, without detriment to the surgeon and with lasting benefit to the patient, be used to the exclusion of ether or chloroform. Operations in two specific regions, namely, the perineum and within the abdomen, were not favorably conducted under gas. One objection to the employment of gas lay in its relatively great cost. It averaged about two dollars an hour. Certain savings in this cost might be effected, however, if hospitals were to make their own gas—a plan that was practical to follow.

Dr. Powers of Denver made a motion embodying the suggestion of the chairman and requesting the section to create a Commission on Anesthetics which should consist of three or five men—one of them to be the chairman of the section, the others prominent men qualified specially to carry on investigations along the lines of interpreting and correlating the great mass of information regarding anesthetics now available at every hand, but not made the fullest use of. This commission was to have the power to create sub-commissions in special regions and was to report to the Section on Surgery and Anatomy the result of its findings every year. Its expenses were to be paid by an appropriation to be voted by the trustees.

Dr. Rodman of Philadelphia seconded the motion—said he regarded the creation of an Anesthetic Commission similar to that of the British Empire, and especially its reporting to the surgical section, as a most important and valuable departure.

Intestinal Perforation in Typhoid Fever; Its Surgical Treatment, with Report of a Case.—Dr. J. E. Allaben of Rockford, Ill., read this paper. He gave a full but concise summary of the literature of the subject. He spoke of the improvement in the death rate, which had been lowered by about ten per cent. during the past four years. Fully ninety-five per cent. of the perforations occurred in the ilium, although there were a sufficient number in the colon to make every search which did not fully include that organ incomplete. Coma had, in earlier days, been considered a valuable point diagnostically, but it was now well established that to wait for its appearance in a suspected case was to sacrifice all hope of saving the patient. Pain, rigidity, and tenderness to pressure were the cardinal symptoms calling for operation. The value of the leucocyte count to which Cushing had called attention was lessened by the fact that it frequently occurred in transient waves. Buxton's experiments, which showed the importance in germ absorption of the lymphatics of the diaphragm, proved that flushing of the abdominal cavity after operation was not alone not indicated, but was evidently positively dangerous, for it carried the germs to the diaphragm whence they might easily be absorbed.

Dr. Murphy of Chicago laid great stress on the need of early operation. Hyperleucocytosis was frequently absent. He urged the importance of washing the system out by properly conducted and continuous proctolysis. This to be well done should be induced by saline flowing continuously from a level just high enough to overcome intra-abdominal pressure—not from a considerable height—with the tube clamped so that the saline might run in drop by drop. He urged, further, the wisdom and necessity of a careful examination of the colon for perforation.

Dr. L. J. Hammond of Philadelphia spoke of the value of surgical prophylaxis. Most cases of perforation, he thought, were due to the preexistence of some lesion—such as adhesions or ulcers in the typhoidal bowel. He believed that perforations in typhoid rarely occurred ex-

cept in the presence of such antityphoid lesions and advised, therefore, that in all individuals whose history was known well enough to justify the supposition that lesions, non-typhoidal, existed, should be subjected to operation at once. Such lesions he thought were indicated by the appearance of abdominal symptoms very early in typhoid fever.

Dr. Allaben in closing said that collapse was due to the liberation of endotoxins in the blood due to breaking down of the bodies of bacteria.

An Operation for Exstrophy of the Bladder.—Dr. JOHN T. BOTTOMLEY of Boston read this paper. He discussed the shortcomings of the three classic types of operation for this abnormality and showed that in each there seemed to be an insuperable difficulty yet to be overcome. The first was the plastic, in which substitutes were made for the deficient wall of the bladder. The second was the making of a new receptable. The third was the diversion of the urinary stream. The operations on the pelvic girdle, many of which were brilliant, were nevertheless attended with a mortality of twenty-eight per cent. As to the employment of the rectum as a reservoir of urine, he said that even after the brilliant work of Madyl we were still unable to do it satisfactorily and without great danger, either of intestinal leakage or of ascending infection. For nothing could be more surgically unclean than the sigmoidal mucosa. Eight per cent. died of peritonitis and the operation was dangerously long. It was to be borne in mind, however, that by no means all cases of pyelonephritis were due to operative intervention, for the very nature of the abnormality itself predisposed to such a condition. Patients suffering from it rarely attained to their twentieth year. He urged the transplantation in certain selected cases of the ureters to the loins and the utilization by the patient of a well fitting rubber girdle which kept the skin dry and was eminently practical. Loin skin, he said, could be kept clean and thus much less septic and unsurgical than sigmoidal mucosa.

Dr. H. H. YOUNG of Baltimore said that the subject was still an open one, whether it were better to employ a permanent drainage tube from the kidney, as he had frequently done, or to make use of ureteral transplantation to the skin.

Dr. BOTTOMLEY in closing said that he never intended to suggest that this operation should supersede certain others, but that it be employed in specific chosen cases which were suited to it.

How May Our Present Methods of Medical Illustrations Be Improved?—Mr. MAX BRÖDEL of Baltimore read this paper. He contrasted the excellent character of some of the illustrations in the lay press with the inferior work frequently appearing in the medical publications. An important reason for this law in the inability or unwillingness of the artist thoroughly to familiarize himself with the subject of his work from both physiological and pathological standpoints. The artist should know more of science and the scientist more of art. He showed how outline illustrations of specific regions might be useful to surgeons in presenting important details to artists for their elaboration.

Dr. WILLIAM MAYO said that the entire profession owed Mr. Brödel a debt of gratitude for his development of an entirely unique school of artists. He said that much of the medical literature which had been so ably illustrated by Mr. Brödel had been intelligible to him only after a study of the illustrations.

Gall-Duct Obstruction Caused by Movable Kidney.—Dr. MARTIN B. TINKER of Ithaca, N. Y., read this paper. He referred to the known frequent association of biliary tract affections with diseases of the stomach, pancreas, and appendix. The connection between these lesions and movable kidney had, however, but in rare instances been dwelt upon. His personal experience had led him to the conclusion that the movable kidney, pressing upon or adherent to the duodenum and common duct, was a not infrequent cause of biliary obstruction. He recited in detail the history of two cases which illustrated and supported this belief. He believed that nephropexy combined with cholecystostomy would almost always afford relief.

Bier's Treatment in Chronic and Acute Surgical Affections.—Dr. WILLY MEYER of New York read this paper. He said that even to-day, more than ten years after its discovery, this admirable addition to the prophylactic treatment of wounds had been but little employed in America. During the past few years, however, its advantages seemed to have become more generally appreciated and as a consequence the literature of the subject was growing at a very rapid rate. He considered that the results following its employment in chronic bone disease might be simply astonishing. He had seen a tuberculous elbow recover in a few months under moderate elastic compression of the arm and the results were equally gratifying when the method was employed to combat acute local extremity infections which were tending to become generalized. He concluded that, however applied, whether by compression by cups or by hot air, hyperemia was a most valuable aid to surgical therapeutics.

Dr. SCHMIEDEN of Berlin, one of Bier's assistants, spoke of the very general manner in which the treatment was employed in Germany and expressed the hope that all the American hospitals would give it a trial.

Dr. HOLLISTER of Chicago said that hyperleucocytosis was by no means so important a factor resulting from the hyperemia as was hyperobsination. He cited a most instructive series of cases in which experimental observation had proven that the opsonic index of the serum exuding from a sinus was below ONE, while after treatment it rose to ONE or plus ONE. Further, the series showed that by combining the congestion treatment with vaccine therapy the best results were obtained.

Dr. SMITHIES of Ann Arbor said that there were very marked limitations to the compression treatment—that it was capable, if not properly employed, of causing much damage. This was particularly to be feared in anemic cases, such as arthritis deformans and chronic rheumatism.

SECTION ON DISEASES OF CHILDREN.

Tuesday, June 4—First Day.

The Status of the Child.—Dr. J. ROSS SNYDER of Birmingham, Ala., presented the Chairman's address. Certain changes in our way of living would seem imperative if the integrity of the nation was to be preserved. The rapid increase in the number of defective and degenerate persons called for the better safeguarding of the children of to-day in order to insure an oncoming generation of well-equipped individuals. Some of the evils that beset children were associated with their home life, and in this connection the physician could render lasting service to the country. The position assumed by modern society with reference to the unborn child had been such that physicians rather shrank from approaching the subject. This should not be so, however, and physicians should instruct the prospective mothers under their care in matters pertaining to the care of the child. Enough consideration was not given by physicians to the conditions which surrounded the mothers of the country. Attention was called to the increasing tendency on the part of women to adopt measures for the prevention of conception—a tendency born, many times, of fear engendered in the minds of newly married women by stories told by older women of the horrors of child-bed. It should be the duty of the physician to overcome this fear in the minds of women, and to so educate and prepare the expectant

mothers in matters pertaining to the child's needs that her later duties will be less arduous. A failure on the part of the mother to furnish her child with a sufficient supply of natural food tended to make motherhood burdensome. A large proportion of defectives and degenerates in America came not from homes of poverty, but from homes of wealth, for the thoughtless care of children was confined to no status of society. A strong plea was made against child labor. Physicians took just pride in the part they had played in bringing about various reforms with reference to children; in the direction of suppressing obscene literature, however—chief and probably most harmful of which is the modern newspaper—it would seem that all efforts were unavailing.

Some Needs of Institution Children.—Dr. JOHN RUHRÄH of Baltimore, Md., read this paper, in which he outlined the general causes which led to failure on the part of institutions to raise children coming under their care. Certain requirements should be adhered to. First of all, the matter of ventilation should be looked after. One thousand cubic feet of air space should be provided for a child under one year of age. Under no circumstances should admission to the institution be allowed to exceed the capacity of the wards. Children should be kept out of doors as much as possible. A strong plea was made for the separation of sick from well children and for the prompt isolation of infectious diseases. A special ward, kept at a higher temperature than the others, should be provided for congenitally weak children. Each ward should have a competent trained attendant. Babies should not be kept in bed all the time, and should not be fed in bed. The nurses should be allowed ample time for that most important factor in the care of children in institutions—the "mothering" of the child. He advocated simplicity in diet.

Dr. GRAHAM of Philadelphia emphasized the importance of the requisite air space, and of out-door life. This had not been appreciated in institutions until within the past few years. He wished, also, to emphasize what the reader of the paper had said about nurses. In very few hospitals and institutions devoted to the care of children would it be found that nurses were allowed sufficient time for "mothering" the children under her care, yet he considered this a very important factor. The feeding of the infant in hospital and institutional practice was a subject to which much attention had been directed, and he was surprised to hear what Dr. Ruhräh said on this subject.

Dr. SHAW of Albany, N. Y., thought Dr. Ruhrah had idealized the requirements for the institutional care of children. One thousand cubic feet of air space might be provided and yet the ward not have sufficient fresh air. In the institution with which he was connected, which received only children under one year of age, in some of the wards there was not more than three hundred feet of air space, yet results were very good, the mortality being not more than seven per cent. All of the children were artifically fed. Great importance was attached to ventilation in this institution. In the upper sash of each window the glass was replaced by cheesecloth, which was true in winter as well as in summer, and the difficulty had been not in keeping the wards warm, but in keeping them cool in winter. The smallest ward accommodated three children and the largest nine. In summer the children were kept out of doors. He considered the separation of the sick from the well children of the utmost importance. The individual needs of the child should be studied with reference to diet, as had been suggested by Dr. Graham, but he agreed with Dr. Ruhrah with reference to simplicity in the matter of feeding.

Dr. KNOX of Baltimore, Md., advocated wards for not more than three children, and as far as possible that each infant should be in a separate room. Children slept much better in small wards. In summer they should be kept in the open air practically all the time.

Dr. C. G. KERLEY of New York City agreed with the preceding speakers as to the importance of air space, ventilation, attendance, out-of-door air, etc., but the feature which seemed to him of the utmost importance was the complete emptying of the ward during the day. Places should be provided for the day and sleeping rooms for the night. In institutions with which he had been connected the mortality had markedly decreased under this régime.

Dr. Ruhräh, in closing the discussion, said that the point he wished to make with reference to feeding was that it was much easier to feed a child who is well taken care of than one who is not.

The Relation of the Physician to Defective School Children.—Dr. W. C. HOLLOPETER of Philadelphia, Pa., in this paper contrasted the requirements for the fourth grade child in the public schools of Philadelphia in 1888 with those for 1907, and showed that the school life of the child of to-day is so complex that it leads to great tension on the body as well as the mind. He considered this ever-increasing strain a menace to the child's natural mental development and the cause of serious impairment of health. This condition of affairs was in a large measure the result of the modern tendency to "child study"—a tendency which he was inclined to deprecate. He agred with the statement that much of the delinquency of our time was the result of what had been characterized as the "grinding monotony of school life." He emphasized the fact that perfectly normal children develop different faculties at different ages, and that this should be taken into account in the grading of school children. The personal equation should be more fully studied as to physical and mental development. The danger of overreaching the child's capacity should be borne in mind. The power of fixing the attention was an important factor in the process of mental development, and should really be the true standard of grading, regardless of the child's age. It was only within recent years that the physician had anything to do with the grading of school children. Only within recent years had any effort been made to deal with the distinctly defective classes. This was a step in the right direction. Medical inspection should be more thorough and the mental and physical defects of school children should be removed in early life.

Dr. A. C. COTTON of Chicago thought the Section should go on record as formulating some plan for rectifying the abuses of modern education. He deprecated the inefficiency of medical inspection of school children as it is usually practised. He considered it the duty of every medical organization that deals with the disorders of children, particularly if it deals with the hygiene of the developing period, to make itself heard on this subject. It was the part of true economy to weed out the defectives and place them in special grades to which they properly belonged. He believed the time would come when honest medical inspection will include the fitness of the child for the mental work expected of him and his readiness for promotion to a grade requiring different work.

Dr. A. W. FAIRBANK of Boston, Mass., gave a preliminary statement of the results of a clinical study of fifty backward girls between the ages of twelve and sixteen, forty-six per cent of whom showed a marked discrepancy between

the actual age and the development. Ninety-two per cent. were of the age when puberty develops, yet in fifty-two per cent. there was no evidence of such development. Only four out of the fifty showed definite anatomical stigmata.

Dr. BROWN of Elmira was of the opinion that the nervous breakdowns in school children were not attributable to the school work alone, but to various outside factors,—social duties, music lessons, etc.

Dr. HOLLOPETER, in closing the discussion, expressed the opinion that teachers and boards of education were not to be too severely criticised, as much of the fault of the present conditions of affairs rested with physicians. He advocated paying more attention to physical development.

A Preliminary Report on the Etiology of Infantile Atrophy.—Dr. A. H. WENTWORTH of Boston, Mass., said, in this paper, that the etiology of infantile atrophy had long been a mooted question, which is still far from settled. He reviewed briefly the various theories, and outlined his investigations, which were undertaken upon a functional basis. This series of comparative experiments consisted of twenty observations. Cots were used for the purpose and the experiments were conducted after Heidenhain's method. Within a minute or two after the injections of secretin pancreatin flowed out through the cannula. The total time that the pancreatic juice ran was as important as the quantity thereof. This varied from nine to fifteen minutes. The theory upon which these experiments were based was that in infantile atrophy the digestive functions are not normally activated because infants do not obtain suitable food at an early age, and that the derangement of one function upsets another, and this in turn still another, until nothing goes right.

Dr. A. W. FAIRBANKS of Boston, Mass., reviewed briefly Edsall's theory which, he thought was reasonable. It was based upon the fact that protein is more complex than formerly thought, and that its end products constitute the building blocks, so to speak, of the proteid molecule. Syphilis was thought to be a factor in producing infantile atrophy, and in all these cases this should be borne in mind. He cited illustrative cases.

Dr. GRAHAM of Philadelphia said it was not uncommon to find cases in which the amount of atrophy was out of proportion to the failure of digestion and absorption, and it was interesting to note that autopsy in such cases gives nothing upon which to base a diagnosis. He hoped Dr. Wentworth would continue his experiments along this line.

Dr. WENTWORTH, in closing the discussion, said the *motif* of the whole subject was to give the child suitable milk.

The Ferments of Milk and Their Relation to Pasteurization.—Dr. ROWLAND G. FREEMAN gave, in this communication, a brief résumé of the history of the pasteurization of milk, calling attention to the supposed injury to milk by high temperatures. He emphasized the indisputable advantage of breast milk. Escherich's theory of the ferments was outlined and tables were presented showing the ferments of breast milk and cow's milk, and the temperatures that destroy each. These facts were applied to pasteurization.

This paper was discussed by Dr. KERLEY, Dr. COTTON, and others, and the discussion closed by Dr. Freeman.

A New Form of Amputation Stump.—Vanghetti has successfully employed a new method of forming the stump in two cases of amputation. The procedure consists in fashioning a loop lined with skin from the tendons of the stump, through which loop a cord can be passed that is fixed to the prosthesis and in this way a certain amount of voluntary control over the latter may be secured. In one case the tendons of the biceps and triceps were united and the loop so formed converted into a permanent opening by the transplantation of a skin flap, and in the other the flexor and extensor tendons of the forearm were made use of in a similar way.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.*

INDIANA STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION.

October 23, 1906.

CHEMISTRY.

1. What is carbolic acid? Give antidote.
2. What is calomel?
3. What is the specific gravity of healthy urine? Give test for albumen, sugar, blood.
4. What is double decomposition?
5. What is the difference between the mercurous and the mercuric compounds?

MEDICAL JURISPRUDENCE.

1. What is rigor mortis? How soon after death does it begin?
2. How would you determine whether an infant was still born or had been killed after birth?

NEUROLOGY.

1. Give cause, symptoms, and diagnosis of epilepsy.
2. Give the definition of dementia.
3. Give difference between concussion and compression of the brain.

OPHTHALMOLOGY AND OTOLOGY.

1. How do you distinguish whether deafness is due to nerve lesions or aural lesions?
2. Give etiology, diagnosis, terminations, and treatment of chronic inflammation of the membrana tympani.
3. Give etiology, symptoms, and treatment of iritis.

PEDIATRICS.

1. Give cause and treatment for intestinal worms.
2. Give cause and treatment of nystagmus.

PHYSICAL DIAGNOSIS.

1. Define the "Argyll-Robertson" pupil. In what disease is this condition often found?
2. How would you ascertain the shape and position of the stomach?
3. At what age is the pulmonic second sound more intense than the aortic? At what age does the aortic second sound predominate?
4. Give causes and symptoms of pulmonary atelectasis.
5. How would you diagnose alcoholic coma from the coma of epilepsy?

PHYSIOLOGY.

1. Explain cell division.
2. What are the elementary tissues or structures of which the human organism is composed?
3. Give the physiologic composition of the blood with the function of each part.
4. If a sympathetic nerve be divided, what is the effect upon the blood-vessels in the parts to which the nerve is distributed, and why?
5. How long will an animal survive deprived of water?
6. Give the manner of the transmission of motor impressions.
7. Give the origin, course, and distribution of the motor impressions that effect respiratory movements.

RHINOLOGY AND LARYNGOLOGY.

1. Give some of the constitutional causes of epistaxis.
2. Give symptoms and treatment of chronic rhinitis.

ANATOMY.

1. Give diagram or brief description of (a) simple tubular, (b) simple convoluted, (c) compound racemose, and (d) compound tubular glands.

***It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.**

2. Give the boundaries of the thorax.
3. Give the muscles of the orbital region.
4. Give, in the order of their origin, the branches of the external carotid artery.
5. Give, in the order of their origin, the branches of the femoral artery.
6. From what regions do the lymphatic vessels convey lymph to the axillary glands?
7. Give the openings communicating with the pharynx.
8. What muscles attach to the trochanter major?
9. Give general description of the spinal cord.
10. Give the principal nerve trunks of the arm, with location of each.

ETIOLOGY AND HYGIENE.

Give cause and hygienic measures for the prevention of (1) tuberculosis, (2) typhoid fever, (3) diphtheria, (4) scarlatina, (5) variola (smallpox).

GYNECOLOGY.

1. Give pathology, etiology, and treatment of pelvic peritonitis.
2. How would you conduct a physical examination? In what position would you place your patient?
3. Describe the operation of trachelorrhaphy.
4. What are the indications for dilatation of the uterus? Give technique of dilatation.
5. Give after-treatment in major operations (abdominal sections).
6. Define chronic metritis. Give etiology and pathology.

INTERNAL MEDICINE.

1. Define inherent body resistance to disease, and state how it may be increased.
2. Give source, habitat, symptoms, and treatment of tænia solium (tapeworm).
3. Give symptoms of true angina pectoris, and the pathological conditions causing it.
4. Give clinical history of gastric ulcer, and differentiate from (a) gastric carcinoma, (b) duodenal ulcer.
5. Give causes, symptoms, remote results, and treatment of cirrhosis of the liver.
6. Define hematuria, and state how you would determine the probable source of the hemorrhage.
7. Give cause, means of prevention, and treatment of bed sores.
8. In what class of diseases is general aching a pronounced symptom?
9. Give etiology, symptoms, and treatment of dysentery occurring in the temperate zones.
10. Give diagnosis and treatment of pertussis (whooping cough).

MATERIA MEDICA AND THERAPEUTICS.

1. Define preventive medicine, and give illustration of its application.
2. Give derivation of ichthyol, and its therapeutic application.
3. Give technique of introducing medicinal agents into the organism hypodermatically.
4. Name three therapeutic agents which increase the renal function.
5. Name three therapeutic agents which increase the hepatic function.
6. Name some therapeutic agents which promote constructive metabolism.
7. Name some therapeutic agents which promote destructive metabolism.
8. Name some therapeutic agents which excite the functions of the spinal cord and sympathetic.
9. Name some therapeutic agents which depress the functions of the spinal cord and sympathetic.
10. Name some therapeutic agents which are germicidal in their action.

PATHOLOGY AND BACTERIOLOGY.

1. Explain the difference between active and passive hyperemia.
2. Give the modes of infection by the tubercle bacilli; by the malarial hematozoa.
3. To what pathological conditions may passive hyperemia of the stomach be due, and to what may it lead?
4. What pathological conditions may result from abnormal conditions of the thyroid gland?
5. Give the conditions of the urine in nephritis.
6. Describe in detail the various forms of bacteria which are known to be the cause of pneumonia.
7. Name the bacteria which may cause meningitis.
8. What tissues are usually invaded by the typhoid bacilli during typhoid fever?
9. How would you prepare Löffler's blood serum?
10. Describe the staining properties of the smegma bacillus.

OBSTETRICS.

1. Describe the fetal circulation.
2. How and when should the umbilical cord be ligated and cut?
3. State causes of the rupture of the perineum and how prevented.
4. Give diagnosis and probable cause of tubal pregnancy.
5. Name diseases most commonly affecting the mammæ of the nursing mother.
6. Give cause and treatment of aphthæ.
7. Give indications and contraindications for the employment of chloroform in labor.
8. When should ergot be employed in obstetric practice?
9. State cause, diagnosis, and treatment of porrigo larvalis, or crusta lactea.
10. Give cause and treatment of vomiting of pregnancy.

SURGERY.

1. What is a compound fracture?
2. Give diagnosis of inguinal hernia.
3. What is an aneurysm?
4. Give diagnosis and treatment of appendicitis.
5. What conditions justify amputation of a limb?
6. Give symptoms and treatment of intestinal obstruction.
7. Give a description of Chopart's operation.
8. What are the symptoms and treatment of depressed fracture of skull?
9. Give symptoms and treatment of hydrocele.
10. Give symptoms and treatment of downward dislocation of head of humerus.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Indiana State Board of Medical Registration and Examination

October 23, 1906.

CHEMISTRY.

1. Carbolic acid is phenyl hydroxide: C_6H_5OH. Its antidote is alcohol or magnesium sulphate.
2. Calomel is mercurous chloride: Hg_2Cl_2.
3. The specific gravity of healthy urine is from 1015 to 1025.

Test for *Albumin.*—The urine must be perfectly clear. If not so, it is to be filtered, and, if this does not render it transparent, it is to be treated with a few drops of magnesia mixture, and again filtered. The reaction is then observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3.

Test for *Sugar.*—Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test tubes. To one test tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color.

Test for *Blood.*—To the urine add a solution of potassium hydroxide to distinct alkaline reaction; heat nearly to boiling (do not boil). A red precipitate is produced. (Witthaus' *Essentials of Chemistry.*)

4. Double decomposition is a reaction in which both of the reacting compounds are decomposed to form two new compounds.

5. The *mercurous* compounds contain the bivalent group $\left(\begin{matrix}Hg\\|\\Hg\end{matrix}\right)''$ or $\left(Hg_2\right)''$, whereas the *mercuric* compounds contain the single, bivalent atom Hg″. They also differ in their analytic characters; thus with potassium hydroxide the *mercurous* salts give a *black* precipitate, and the *mercuric* salts a *yellow* precipitate.

MEDICAL JURISPRUDENCE.

1. *Rigor mortis* is the condition of rigidity or contraction into which the muscles of the body pass after death. It begins at a period varying from about fifteen minutes to about six hours.

NEUROLOGY

2. "*Dementia*, when confirmed, consists in a total absence of all reasoning power, and an incapacity to perceive the true relations of things; the language is incoherent, and the actions are inconsistent; the patient speaks without being conscious of the meaning of what he is saying; memory is lost, and sometimes the same word or phrase is repeated for many hours together; words are no longer connected in meaning, as they are in mania and monomania." (Taylor's *Medical Jurisprudence.*)

3.—

CONCUSSION OF THE BRAIN.	COMPRESSION OF THE BRAIN.
Unconsciousness is incomplete; patient can be made to answer, though it may be briefly, and in simple words.	Complete unconsciousness; may scream into patient's ear at the top of the voice, but will receive no answer.
Special senses, though greatly blunted, are not abolished.	Special senses entirely suspended.
Power of movement not destroyed; if the position of a limb be changed the patient will resist or bring it immediately into the original position.	Complete or partial paralysis; in most cases hemiplegia.
Respiration is quiet and feeble.	Respiration full and noisy.
Pulse feeble, frequent, and intermittent.	Pulse full and slow, and sometimes laboring.
The stomach sickens and rejects its contents.	The stomach is insensible to any impression; no nausea or vomiting.
The feces may be discharged incontinently, as may also the urine, though not usually.	Bowels are torpid, and the bladder incapable of emptying itself, though the urine may escape by overflow.
Deglutition little impaired.	Deglutition difficult or impossible.
Pupils variable, though generally contracted; the eyelids somewhat open.	Pupils variable, though generally much dilated, and the eyelids closed.
Temperature of the body less than natural.	Temperature almost natural, a little below the normal standard.

(From Treves' *Manual of Surgery.*)

OPHTHALMOLOGY AND OTOLOGY.

1. "If the ticking of a watch or the vibrations of a tuning fork are heard faintly or not at all when held at varying distances from the ear (aërial conduction), but become distinctly audible when the watch or the handle of the fork is placed in contact with the skull or mastoid process (bone conduction), the deafness is of the ordinary variety and due to aural disease. If, on the other hand, watch and fork are heard indistinctly or not at all, both in contact and at a distance, the deafness is due to some lesion of the nerve or its connections. In the first case the nerve is normal and can appreciate vibrations brought by the bone, while, through some fault in the mechanism, aërial vibrations are not transmitted to the nerve endings. In the second case the nerve is at fault and cannot appreciate vibrations, no matter how well they may be conducted." (Butler's *Diagnostics of Internal Medicine.*)

PEDIATRICS.

1. *Tapeworm* is *caused* by eating raw or insufficiently cooked meat containing cysticerci. *Treatment*: Give a dose of castor oil at night, and the following morning give half a dram of freshly prepared extract of male fern, and a few hours later give another dose of castor oil.

Roundworm is *caused* by swallowing with the food the ova of the ascaris lumbricoides. *Treatment*: A dose of santonin and calomel should be given at bedtime for a few nights, and a dose of castor oil the morning after the last powder.

Seatworm, or *Pinworm*, is *caused* by swallowing the ova of the oxyuris vermicularis with the food or water, or it may be conveyed to the mouth by the fingers. *Treatment*: A large enema of a cold infusion of quassia. Care must be taken to prevent reinfection.

2. *Nystagmus* is *caused* by some irritation affecting the muscles of the eye. It may be vertical or lateral, and may be due to the eye or to the central nervous system. The cause can only be determined by a study of the other symptoms associated with it. *Treatment*: Tonics or bromides are sometimes useful. Remove the cause if possible. If due to occupation, the work must be changed; strabismus, or errors of refraction, must be corrected.

PHYSICAL DIAGNOSIS.

1. *Argyll-Robertson pupil* is a condition in which the pupil accommodates for distance but not for light. The condition is chiefly found in locomotor ataxia and paretic dementia.

3. The pulmonic second sound is more accentuated in childhood; the aortic second sound is more accentuated in adult life.

5. *Alcoholic coma*: The patient can generally be aroused; the coma is not, as a rule, complete; the face may be flushed; the pupils are normal or dilated; the respirations are normal in frequency, but deep; the skin is cool and moist, and the body temperature may be below normal.

Coma of epilepsy: History of attack, with previous convulsion; the coma is of brief duration, and the unconsciousness gradually becomes less; there may be a bitten tongue or other scars.

PHYSIOLOGY.

2. Epithelial tissues, connective tissues, muscular tissues, and nervous tissues.

3. *Physiological composition* of the blood:

1. Plasma.
2. Corpuscles { Colored. Colorless. Blood-plates.

Functions:

Plasm conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

Colored corpuscles carry oxygen from the lungs to the various tissues of the body.

Colorless corpuscles act as a protection against bacterial invasion.

Blood-plates are supposed to take some part in the process of coagulation.

4. If a vasoconstrictor nerve is divided, the arteries supplied by it are relaxed, more blood flows to the part, the blood current is accelerated, and congestion results. If a vasodilator nerve is divided, there is little or no change in the blood-vessels supplied by it.

5. From seven to ten days, without either water or food.

6. Motor impressions travel from the cortex of the cerebrum, through the corona radiata, internal capsule, crus, pons, medulla, crossed or direct pyramidal columns, to the motor cells in the anterior horn of the spinal cord; thence through the motor nerves to the muscles indicated.

7. The origin of the impulses is at the respiratory center in the medulla. The phrenics and intercostals are the chief nerves conveying the impulses; and they are distributed to the diaphragm and intercostal muscles, respectively.

RHINOLOGY AND LARYNGOLOGY.

1. Some of the constitutional causes of epistaxis are: Hemophilia, pernicious anemia, leukemia, scurvy, purpura hæmorrhagica, cerebral congestion, hypertrophy, and valvular lesions of the heart.

ETIOLOGY AND HYGIENE.

1.—

	Caused by.
Tuberculosis	Bacillus tuberculosis, of Koch.
Typhoid fever	Bacillus typhosus, of Eberth.
Diphtheria	Bacillus diphtheriæ, of Klebs-Loeffler.
Scarlatina	Microorganism not yet ascertained.
Variola	Microorganism not yet ascertained.

INTERNAL MEDICINE.

2. *Tænia Solium. Source*: The encysted larvæ or scolices, which come from the proscolices, which in turn are derived from the ova of the tapeworm. *Habitat*: In the larval state this parasite exists in the hog. *Symptoms*: Often there are no subjective symptoms; there may be dyspepsia, emaciation, ravenous appetite, nausea, vomiting, colicky pains, vertigo, chorea, itching of the nose. The diagnosis is made from finding segments or eggs in the dejecta. *Treatment*: The patient should be limited to a liquid diet for two days; salines should then be administered; then the oleoresin of aspidium in a dose of one to two drams, followed in a few hours by another saline. The treatment can only be considered successful when the head of the worm is found in the dejecta.

3. The *symptoms* of true angina pectoris are: Excru-

tiating pain radiating from the heart to the neck, shoulder, and arm (generally the left); a sense of impending death; cardiac constriction; the face is anxious and pale; cold perspiration and sometimes dyspnea.

The pathological conditions causing it are: Arteriosclerosis, chiefly of aorta and coronary arteries; there may be myocarditis and endocarditis, chiefly associated with aortic regurgitation or adherent pericardium; the predisposing causes of arteriosclerosis may also be present, chiefly syphilis, alcoholism, and gout.

4. *Diagnosis*: *Gastric ulcer* is generally caused by injury or bacteria, is most apt to occur between the ages of twenty and forty-five; after eating there is pain localized in the stomach, vomiting occurs soon after eating, hematemesis is common, there is localized tenderness over the stomach, and examination of the gastric contents shows an excess of free HCl.

Gastric carcinoma does not usually occur before forty years of age, is more common in males, the pain is localized and constant, vomiting is copious and occurs some time after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; severe anemia and cachexia are also present.

In *Duodenal ulcer* the pain is apt to be more to the right, and to occur at an interval of two or three hours after meals; the hemorrhages will be intestinal, and the blood will be passed by way of the bowels, and not vomited. In many cases the symptoms are identical with those of gastric ulcer.

6. *Hematuria* means blood in the urine. In *renal* hematuria the blood and urine are intimately mixed, tube casts are apt to be present, and there may be renal colic or pain in the lumbar region. In *vesical* hematuria the blood and urine are not so well mixed, and pure blood is apt to be passed at the end of urination. In *urethral hematuria* the urine first passed is bloody.

7. *Bedsores* may be caused by undue pressure and irritating secretions; a crease or fold in a sheet, a crumb of bread, a feather, or a bit of string on the sheet may cause them. Especially is this so when the skin is irritable from excessive perspiration, inefficient washing, or involuntary passages of urine. Bedsores are particularly common in spinal affections and in wasting diseases.

Prevention consists in reducing the pressure, careful repeated washing, drying, and dusting with zinc oxide, and subsequent protection with lint or cotton-wool, etc. Leather-backed adhesive plaster may be applied over bony prominences, or, if seen early, collodion may be used. Frequent rubbing with alcohol may prove a preventive. When congestion appears, a water-bed or air-cushion may be used. Spirits of camphor or glycerol of tannin may be rubbed in twice daily, to harden the skin. Salt and alcohol (two drams to the pint) may also be used.

Treatment: A solution of silver nitrate may be used when the skin is about to break, in the strength of gr. 20 to the ounce; and in solution of gr. 10, daily, when the skin breaks. The sloughs should be removed as fast as they form. Stimulation, good nourishment, and sleep are valuable in treatment. (From Gould and Pyle's *Cyclopedia of Medicine and Surgery*.)

8. General aching is a pronounced symptom in some of the acute infectious fevers such as influenza, dengue, and smallpox. It may also be present in tonsilitis, rheumatism, and syphilis; also in poisoning by lead or mercury.

MATERIA MEDICA AND THERAPEUTICS.

1. Preventive medicine is the application of medical science to the task of preventing or mitigating disease. *Example*: Vaccination to prevent smallpox.

2. Ichthyol is obtained from ichthyosulphuric acid, which comes from a crude oil obtained by destructive distillation of fossil fish found in the earth in the mountains of Tyrol. It is used in inflammatory conditions generally, erysipelas, rheumatism, and certain chronic skin diseases.

4. Three therapeutic agents which increase the renal function: (1) Water, (2) alcohol, (3) spirits of nitrous ether.

5. Three therapeutic agents which increase the hepatic function: (1) Sodium salicylate, (2) corrosive sublimate, (3) podophyllin.

6. Some therapeutic agents which promote constructive metabolism: Iron and its preparations, potassium permanganate, bismuth, arsenic, cinchona and its preparations, mineral acids, phosphorus, massage, fresh air.

7. Some therapeutic agents which promote destructive metabolism: Iodine, potassium, sodium, lithium, mercury, calcium, barium and their preparations; vegetable acids.

8. Some therapeutic agents which excite the functions of the spinal cord and sympathetic: Alcohol, strychnine, electricity, massage, ether, camphor, digitalis, sparteine, ergot.

9. Some therapeutic agents which depress the functions of the spinal cord and sympathetic: Opium, belladonna, large quantities of alcohol, chloral hydrate, aconite, physostigma, pilocarpus, tobacco, amyl nitrite.

10. Some therapeutic agents which have a germicidal action: Oxygen, sulphur, corrosive sublimate, carbolic acid, iodine, chlorine, staphisagria, heat, formaldehyde, creolin.

PATHOLOGY AND BACTERIOLOGY.

1. *Active hyperemia* means that there is an excess of arterial blood in a part, and is generally accompanied by an increase in the rate of blood flow. In *passive hyperemia* there is still an excess of blood, but it is in the veins and capillaries; and the blood flow is retarded.

2. Modes of infection by the *tubercle bacilli*: (1) By inhalation, (2) by inoculation, (3) by being taken in with food.

Mode of infection by the *malarial hematozoa*: By the bite of the anopheles mosquito.

3. Passive hyperemia of the stomach may be due to cirrhosis or other hepatic diseases causing portal obstruction, also to some pulmonary disorders which interfere with the flow of blood from the right ventricle. It may lead to chronic gastritis.

4. Cretinism, goiter, myxedema, cachexia strumipriva.

5. "*Acute Diffuse Nephritis*.—The urine is greatly diminished in amount (four or five ounces in twenty-four hours), or is even totally suppressed. It is smoky, blackish, or of a chocolate color. The specific gravity is high. Albumin is found in large amount, and the heavy deposit contains abundant red corpuscles, blood, hyaline, and epithelial tube casts. The total urea is lessened.

"*Chronic Diffuse Nephritis*.—The quantity of urine is diminished, it is cloudy from urates, the specific gravity may be high in the early, but is low in the later stages. Albumin is abundant, sometimes more so than in any other disease. The heavy sediment contains large numbers of nearly all the varieties of tube casts, hyaline, epithelial, granular, and fatty. The latter are especially characteristic. Occasional red corpuscles, many leucocytes, and numbers of degenerated epithelial cells are also found. The amount of urea is decreased.

"*Chronic Interstitial Nephritis*.—The urine is increased in quantity, light yellow, clear, with a persistently low specific gravity. Albumin is scanty, occurring in traces, and is sometimes absent. A few narrow hyaline casts are almost constantly found in the very small deposit. Cellular elements are as a rule no more abundant than in normal urine. Polyuria, persistent low specific gravity, and the presence of a few hyaline casts constitute the urinary signs of this disease. Albumin may or may not be present in small quantity." (Butler's *Diagnostics of Internal Medicine*.)

7. The bacteria which may cause meningitis are: (1) *Diplococcus intracellularis meningitidis*, (2) the pneumococcus, (3) *Streptococcus pyogenes*.

8. The tissues usually invaded by the typhoid bacilli during typhoid fever are: The lymphoid tissue of the small intestine, lymph nodes of the mesentery, the spleen, gall-bladder, urinary bladder.

9. Löffler's blood serum consists of one part of bouillon (containing one per cent. of glucose) and three parts of liquid blood serum. This should be well mixed, poured into tubes, and sterilized, or raised to 65° C. one hour a day for three days.

10. The smegma bacillus is like the tubercle bacillus in that it stains with carbolfuchsin and resists the decolorizing action of dilute mineral acids. But it is decolorized by absolute alcohol.

OBSTETRICS.

4. *Diagnosis*: "When extrauterine pregnancy exists there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility; nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy; pains are often very severe, with marked tenderness within the pelvis; such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating; this tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The os uteri is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2

are *presumptive signs*;. Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 are *positive signs.*" (*American Text-Book of Obstetrics.*)

Probable cause: Some pathological condition in the Fallopian tube which obstructs the passage of the fecundated ovum. The most common condition is salpingitis, especially of the gonorrheal variety.

5. Sore nipples; caked breast; mastitis, which may be subcutaneous, parenchymatous, or submammary; galactocele.

6. *Cause of Aphthæ*: Predisposing causes are uncleanliness, lack of hygienic conditions, improper feeding. The exciting cause is unknown; various microorganisms have been found in this condition, but none of them is recognized as the etiological factor.

Treatment: Cleanliness, proper hygiene, proper feeding, mouth wash of salt solution or boric acid; the ulcers may be brushed with a nitrate of silver solution (5 to 10 grains to the ounce), and a dose of castor oil or a few grains of calomel (in divided doses) should be administered.

SURGERY.

5. Conditions which justify amputation of a limb are: "Any injury, disease, or malformation rendering retention of the limb incompatible with life or comfort; avulsion of limb; compound fracture; compound dislocation; fracture with great comminution of bone; laceration of important vessels; extensive contusion; extensive laceration; gunshot injuries; aneurysm; effects of heat and cold; gangrene; extensive bone disease; tumors; elephantiasis; tetanus; snake bite; deformities." (Bickham's *Operative Surgery.*)

BULLETIN OF APPROACHING EXAMINATIONS.†

*TATE.	NAME AND ADDRESS OF SECRETARY.	PLACE AND DATE OF NEXT EXAMINATION.		
Alabama*	W. H. Sanders, Montgomery.	Montgomery	July	1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July	1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July	9
California	Chas. L. Tisdale, Alameda	San Francisco	August	20
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July	2
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	July	9
Delaware	J. H. Wilson, Dover	Dover	June	18
Dis. of Col'bia	W.C.Woodward, Washington.	Washington	July	11
Florida*	J. D. Fernandez, Jacksonville.	Jacksonville	Nov.	21
Georgia	E. R. Anthony, Griffin	Atlanta	October	8
Idaho	J. L Conant, Jr., Genesee	Boise	October	1
Illinois	J. A. Egan, Springfield	Chicago	June	19
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October	22
Iowa	LouisA.Thomas,Des Moines.	Des Moines	June	11
Kansas	T. E. Raines, Cotcordia	Topeka	June	11
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October	22
Louisiana	F. A. La Rue, 211 Camp St.	New Orleans	October	15
Maine	Wm. J. Maybury, Saco	Augusta	July	9
Maryland	J. McP. Scott, Hagerstown.	Baltimore	June	18
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July	9
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June	11
Minnesota	W. S. Fullerton, St. Paul.	St. Paul	October	1
Mississippi	J. F. Hunter, Jackson.	Jackson	October	8
Missouri	J.A.B.Adcock, Warrensb'g.	Mexico	July	9
Montana*	Wm. C. Riddell, Helena	Helena	October	1
Nebraska	Geo. H. Brash, Beatrice	Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	August	5
N. Hamps're*	Henry C. Morrison, State Library, Concord	Concord	July	9
New Jersey	J. W. Bennett, Long Branch.	Trenton	June	18
New Mexico	B. D. Black, Las Vegas	Santa Fe	December	2
New York	C.F.Wheelock,Unv of State of New York, Albany.	New York, Albany, Syracuse, Buffalo	June	25
N. Carolina*	G. T. Sikes, Grissom	Morehead City		
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks.	July	2
Ohio	Geo. H. Matson, Columbus.	Columbus	June	11
Oklahoma*	J. W. Baker, Enid.	Guthrie	June	11
Oregon	B. E. Miller, Portland	Portland		
Pennsylvania	N. C. Schaeffer, Horrisburg.	Philadelphia, Pittsburg	June	25
Rhode Island	G. T. Swartz, Providence	Providence	July	4
S. Carolina	W. M. Lester, Columbia	Columbia	June	11
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July	10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May, 1908	
Texas	T. T. Jackson, San Antonio.	Austin	June	25
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City.	July	7
Vermont	W. Scott Nay, Underhill.	Burlington	July	9
Virginia	R. S. Martin, Stuart	Lynchburg	June	18
Washington*	C. W. Sharples, Seattle	Seattle	July	2
W. Virginia*	H. A. Barbee, Point Pleasant.	Charleston	July	9
Wisconsin	J. V. Stevens, Jefferson.	Madison	July	9
Wyoming	S. B. Miller, Laramie	Cheyenna	June	19

* No reciprocity recognized by these States.
† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State

Texas.—The new medical law of this State goes into effect on July 12, 1907. This law provides for a mixed Board and also provides that no one who is not a graduate of a reputable medical college with a four years' course can take the examination.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending May 25, 1907:

	Week of May 25		Week of June 1	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	437	184	328	173
Diphtheria	313	27	332	31
Measles	805	19	623	21
Scarlet Fever	494	15	511	29
Smallpox	4	—	1	—
Varicella	120	—	129	—
Typhoid Fever	35	8	33	5
Whooping Cough	38	14	40	9
Cerebrospinal Meningitis	40	30	19	21
Malarial Fever	..		.....	.....
Totals	2286	297	2016	289

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 24, 1907:

		CASES	DEATHS.
SMALLPOX—UNITED STATES			
California, San Francisco	May 11–18	1	..
Florida, Duval County Jacksonville	May 11–18	2	..
Hillsboro County Tampa	May 11–18	4	..
Illinois, Chicago	May 11–25	13	..
Danville	May 10–23	4	..
Springfield	May 10–23	2	..
Indiana, Elkhart	May 11–18	6	..
La Fayette	May 13–20	1	.
South Bend	May 11–18	3	1
Kansas, Kansas City	May 11–25	5	..
Kentucky, Covington	May 15–22	1	
Louisville	May 16–23	4	
Louisiana, New Orleans	May 11–18	7	4 imported
Massachusetts, Lawrence	May 11–18	1	..
Michigan, Detroit	May 18–25	4	..
Saginaw	May 11–18	5	
New York, Niagara Falls	May 11–18	1	..
North Carolina, Greensboro	May 11–18	8	.
South Carolina, Camden	May 12–19	1	..
Texas, Galveston	May 17–24	10	
	Imported on S. S. *Hanover*		
Laredo	May 13–17	1	1
			Imported
San Antonio	May 4–11	1	
Washington, Spokane	May 11–18	20	1 imported
Wisconsin, Milwaukee	May 11–18	1	..
SMALLPOX—FOREIGN			
Brazil, Manaos	Apr. 27–May 4	10	
Para	Apr. 27–May 11	6	2
Pernambuco	Mar. 15–31		60
Chile, Coquimbo	Apr. 27	1	..
Iquique	Apr. 27		Present
China, Hongkong	Apr. 6–13	20	16
Egypt, Cairo	Apr. 23–20	2	1
France, Marseilles	Apr. 1–30		170
Nice	Apr. 1–30	15	4
Paris	May 4–11	12	5
Germany, General	Apr. 28–May 4	9	..
Great Britain, Cardiff	May 4–11	1	..
Southampton	May 4–11	1	
India, Bombay	Apr. 23–30		1
Italy, General	May 3–9	52	..
Madeira, Funchal	May 5–12	31	9
Mexico, Mexico City	Apr. 20–27		16
Portugal, Lisbon	May 4–11	6	..
Russia, Odessa	Apr. 20–27	7	2
	Feb. 1–28		6
Riga	Apr. 27–May 11	16	.
Spain, Barcelona	May 1–10		3
Cadiz	Apr. 1–30		3
Huelva	Apr. 1–30		4
Seville	Apr. 1–30		3
Valencia	Apr. 28–May 12	25	2
Turkey, Bagdad	Apr. 6–13		Present
YELLOW FEVER.			
Brazil, Manaos	Apr. 20–27		1
Para	Apr. 28–May 12	9	6
Cuba, San Nicolas Habana Province	May 21	1	
West Indies, Trinidad Port of Spain	May 4–11	2	2
CHOLERA			
India, Bombay	Apr. 23–30		2
Rangoon	Apr. 13–20		9
PLAGUE—INSULAR.			
Hawaii, Honolulu	May 22	1	2
PLAGUE—FOREIGN.			
Arabia, Bahrien Island	Apr. 21–27	-	4
Camaran	Apr. 10–30	4	2
Brazil, Para	May 4–11	1	1
Pernambuco	May 15–31		1
Chile, Antofagasta	Apr. 27	10	6
China, Hongkong	Apr. 6–13	3	3
India, General	Apr. 16–20	80,091	76,647
Bombay	Apr. 23–30		343
Rangoon	Apr. 13–20		90
Peru, Chiclayo	Apr. 18	2	1
Chosica	Apr. 18	1	.
Ferrenhafe	Apr. 18	3	2
Lima	Apr. 18	5	5
Paita	Apr. 18	4	1
Truxillo	Apr. 18	3	3
Turkey in Asia, Djeddah	Apr. 15–May 5	36	34

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Original Articles.

AUTOINTOXICATION IN ITS MEDICO-LEGAL ASPECTS.

BY HEINRICH STERN, PH.D., M.D.,

NEW YORK.

To my knowledge, autointoxication has never been the subject of medico-legal inquiry; however, a number of pathological states, the origin of which has been assigned of late to intrabiontic poisons, have frequently found forensic consideration. Modern toxicology has begun to conceive certain conditions and diseases as expressions of autointoxication; medical jurisprudence, slowly but inevitably, will also come to recognize autointoxication as a possible factor in the causation of abnormal physical and psychical states and of death. Many a toxicologist prophetically, if not clearly, foresees the importance of the intrabiontically formed poisons in forensic battles of the future. Says Lewin, in the preface of the second edition of his "Lehrbuch der Toxikologie": "The time will arrive when it will have been definitely settled that intoxication is a local or general disease, and that genuine disease is a local or general intoxication."

However, it is a melancholy fact that the experience and the knowledge of a period is but rarely reflected in the prevailing law; that the law is behind the spirit of the times, hardly ever taking into full account the scientific acquisition of to-day, is a circumstance only too well known to the legal practitioner. We cannot often subscribe to Samuel Johnson's affirmation, "The law is the last result of human wisdom acting upon human experience for the benefit of the public," but are inclined to side with Goethe, himself a jurist, who puts in the mouth of Mephistopheles the poetic words:*

> Like a disease of infinite duration
> Custom and laws descend from race to race,
> Clinging to each succeeding generation,
> And creeping stealthily from place to place.
> Reason to nonsense they distort, to blame turn charity.
> Woe to thee if thou a grandson art,
> For rights, which thy time should award,
> Remain unborn to serve posterity.

Autointoxication as a disease has become a fad with many. I do not believe in fadism, hence the conservative standpoint from which I shall view the legal aspects of autointoxication. I shall not attempt to bring the ptomaines and other poisons of bacterial origin, or the so-called intestinal poisons, which are mostly derived from without, in connection with genuine autointoxication. I limit myself to a consideration of the catabolic poisons, as far as they have any bearing upon legal medicine.

The most simple and yet the most authentic of the catabolic, hence of all autointoxications, is the retention of carbon dioxide in the blood and tissues of the organism. It is characterized by cyanosis, slowing of the pulse, difficulty in breathing, and convulsions. In extreme instances death will ensue. Death by strangulation or uncomplicated suffocation is preeminently a death by carbon dioxide poisoning. However, there seems to exist a form of carbonic acid intoxication which does not depend upon an obstruction in some part of the respiratory organs but upon the non-liberation of the carbon dioxide from a combination into which it has entered. This form of carbon dioxide poisoning may be at the foundation of some of the well-known pathological states and may thus attain importance quite frequently. Suppose now, an individual who is living near the gas works or some chemical factory, chances to become affected with carbon dioxide retention. Is it not likely that he, his family, and the attending physician attribute his untoward symptoms to the noxious fumes coming from these places of industry, when, as a matter of fact, not sufficient carbonic acid gas to produce intoxication is found in these vapors? Is it not likely that the average jury will render judgment for the plaintiff if he sees fit to sue the owners of these manufacturing establishments? Are they not known to be public nuisances the world over? Ergo, they must be the cause of the plaintiff's suffering and inability to earn his livelihood.

Carbon dioxide retention without the occurrence of a respiratory obstruction is, indeed, a very interesting phenomenon, which is destined to alter our views as regards the etiology of a number of affections. At the bottom of certain chronic diseases, as well as of many instances of so-called heart failure, apoplexy, and other forms of sudden death, we may find carbon dioxide retention in various degrees. The importance of this simple form of autointoxication for all the branches of legal medicine ought not to be underestimated.

The condition known as *acidosis* should command the earnest attention of the medical jurist. Under acidosis, or acid intoxication, is understood poisoning by overproduction or deficient neutralization, or abnormal retention of normal, or by pathological, acid principles (Stern). Catabolic acidosis supervenes in some pathological states characterized by loss of body substance. Its most frequent occurrence is in the later stages of diabetes. The acetone bodies, betaoxybutyric acid, acetoacetic acid, and acetone, are always present in the urine of persons with acidosis, and are therefore pathognomonic of the condition, but they are not the cause of the peculiar train of symptoms, as I have pointed out on various occasions. The following instance of this type of autointoxication requiring legal inquiry came under my observation:

About ten years ago a diabetic patient of mine, exhibiting acetoacetic acid and acetone in his urine, on his way from my office to his home became suddenly vertiginous and took refuge in the rear room of a liquor saloon. When he was found by the barkeeper he was in a deep stupor, his clothes were

* Translation by Selma Stern.

disarranged, and his cuffs, minus the buttons, were lying in a corner. A search plainly revealed that a robbery had been committed; policemen and detectives declared that the victim had received "knockout drops" and that he was still under their influence. The patient being well known in the neighborhood, his family, when notified, insisted upon his transportation to their home. A short time afterward I was summoned to the house. There a policeman informed me that the ambulance surgeon had already administered an antidote for the "knockout drops." The patient, true enough, presented the more prominent symptoms of poisoning with chloral hydrate. There were the stupor, dyspnea, diminished cardiac action, and lowered temperature. I was satisfied that a large dose of chloral hydrate had been administered to the patient, and I prescribed accordingly. On my way home it struck me that the symptoms displayed by the patient were also those of acid intoxication (diabetic coma). Early the next morning I found the patient greatly improved, but dull and aphasic. In the afternoon of the same day the patient became very restless and irritated. Afterwards he had some attacks of vertigo, which were followed by delirium of a low degree. A slight stupor persisted throughout the afternoon and evening. The urine continued to exhibit glucose, acetoacetic acid, and acetone, and also contained betaoxybutyric acid (polariscopically determined), and large amounts of ammonia. In view of the urinary findings I now considered his condition as one of acid intoxication. This diagnosis was positively confirmed by the subsequent behavior of the patient: frequent recurrences of the phenomena just described, and lethal exit in fully developed diabetic coma after five days.

The facts in this matter proved very simple: The patient, in a bewildered and staggering condition, was followed by two toughs when he entered the liquor saloon by the side door. They took his valuables when he began to become stuporous, and neither handled him roughly nor used "knockout drops." Had the victim died then and there, the people, without a shadow of a doubt, would have charged the thieves with murder in the first degree, and the electric chair, in all likelihood, would have expedited them into a better world.

To this instance of unrecognized autointoxication jeopardizing the life of the supposed murderers I could add another similar case of personal experience when the accused was actually convicted of murder on his first trial, but—for some altogether extraneous reasons—was found not guilty on a subsequent trial in another county.

The so-called *constitutional diseases*, originating from or giving rise to autointoxication, interest not only the physician but the surgeon as well. The surgeon, for instance, is loath to operate upon a hemophilic; he takes special care when he has to perform a bloody operation upon a rachitic or scorbutic child; he prefers to limit his work, both in extent and duration, when his patient has diabetes, and he may refuse to operate altogether when confronted with a condition of acetonemia.

There are a number of autotoxic conditions which may more or less interfere with the repair of tissues after accidents and operations. The surgeon frequently receives the blame when injuries do not heal properly, or when operations are not followed by the desired results. As a matter of fact, the cause for the defective repair of the body structures oftentimes originates within the organism. Were it known by the legal profession that catabolic substances could exert a similar influence upon the healing process, as does the syphilitic poison, the number of suits for malpractice would dwindle rapidly and different verdicts would be rendered in many instances. The following instance will illustrate my contention:

Some years ago, on the instigation of his lawyer, a man about forty years old consulted, among some other physicians, also me. He had sustained an oblique fracture of the tibia and fibula about nine months before; however, perfect bony union had not as yet taken place, and he suffered much pain at the seat of the fracture. The patient, contending that unskillful management of his fracture prevented complete bony consolidation, contemplated suing for damages the surgeon who put up the injured limb. The presence of syphilitic disease being positively denied, I questioned the patient as to his medical history. I elicited, among other facts, that he *had been rachitic in childhood,* and that he had a tendency to "gout" during the last two or three years. We know that rachitis affects detrimentally the formation of the granulation substance by which the fractured bone ends unite. This man, it is true, had no noticeable rachitic symptoms any longer, but a nutritive disorder like rachitis may, in a modified form, appear also in adult life, especially when callus production is taking place. The defective callus formation in this particular instance, however, I concluded was due almost entirely to abnormal nucleolysis, or, better, to deficient dissolving qualities of his blood serum, which permitted the deposition of purins and xanthins at the seat of the fracture. These catabolic substances perhaps prevented the osteoblasts from engaging in a normal process of cell proliferation. Undoubtedly, however, they disturbed or checked the chemical processes which lead to ossification. The pains at the location of the injury I attributed to the selfsame causes. I pointed out to the man that the delayed union of the bone ends was very likely due to systemic conditions, preeminently to that which he called his "gouty" affection, and that he had no case against the surgeon. My supposition as to the causative factors of the delayed ossification proved only too true after treatment for perverted nucleolysis, consisting in the main in the administration of potassium iodide and colchicum, had been instituted, for the pain ceased very soon, the patient began to feel more cheerful and became stronger from day to day, the callus material became more abundant, and complete bony union was secured after about fourteen weeks. When we remember the long row of discrepant diseases which have been, and still are, ascribed to uric acid and its salts, or to the alloxur bases, there can be no doubt that nucleolytic autointoxication offers many other medico-legal aspects besides the one just alluded to.

The last word concerning all those occurrences which we classify as histoenzymic autotoxicoses has as yet not been said. Much that has been advanced during the last decade which bears upon the connection of certain abnormal bodily conditions with pathological histoenzymes or perverted "internal secretions," is undoubtedly premature, hypothetical, and nonconvincing. One "internal secretion," however, the one of which least has been written, namely that of the ovary, seems to stand in causative relationship to many ills, and hence to many abnormal mental conditions of womankind. The perverse psychical states so often supervening during the adolescent period, the hysterical and epileptiform

attacks of middle life, the mental aberrations of the menopause point to the ovary as a principal participant in their production.

It would be carrying coals to Newcastle were I to recount on this occasion specific instances of disease or crime which could be adduced to a faulty ovarian internal secretion. The frequency of psychoses, the number of wrong and rash acts attributable to this one cause, is verily appalling. The legal bearings of this undisputable autotoxic factor are so numerous and manifold that one is astonished to see the entire question ignored in the courts of justice.

That which I have termed "physical autointoxication" is the consequence of the retention in the blood of *normal* products of dissimilation. It finds its principal expression in the so-called uremic state. Again, it may give rise to various other abnormal conditions, for instance to narcolepsy. This is a sudden uncontrollable inclination to sleep, recurring at irregular intervals. One of the most interesting cases of narcolepsy on record, which, however, did not then offer any medico-legal aspects, was reported by me some years ago.* Another instance of the same affection, a phase of which is related in the following, should prove very interesting to the medical jurist.

The patient, forty-three years old and weighing about 278 pounds, consulted me first in October, 1904. He was then a well-known member of the San Francisco bar. He had been affected with sudden sleeping seizures for a number of years. He would be seized by this uncontrollable desire to sleep at any time of the day. He would fall asleep in the restaurant, but also while pleading a case in court. I refrain from going into the details of the history of the case at this time, nor is this the place to give an account of the pathological findings. Suffice it to know that it was an instance of well-defined physical autointoxication. The patient acted as legal adviser of a former champion pugilist in a suit which the latter had won against a dishonest referee. This referee, a notorious character, wanted to have it out with the victorious lawyer, and, with his six-shooter in his hip pocket, he went to look for him in the evening. He found him in the hotel, called him to a side room, pulled his revolver, aimed, and at the sight of the gun the lawyer, still standing on his feet, began to sleep and to snore sonorously. At this unprecedented miracle the would-be murderer took to flight and was not heard of for many a day.

Thus far the facts in the case. Now let us consider some of its medico-legal aspects. Suppose the narcoleptic attacks of the lawyer had not been the talk of the town, what conclusions would the police have drawn when they found him unconscious and in apparent stupor after the attempted murder?

I have put this question to a number of experienced police officials and the answer of each and every one was that impulsively he would have looked for the marks of another weapon which kills without making noise; failing to find any, he would, at first, have thought of poison, and then of apoplexy or something similar. Supposing that the lawyer, when seized by the morbid sleepiness, should have fallen on his head in such a way that he had fractured the base of the skull, would not everybody have been convinced that the ill-reputed referee had actually committed a crime? Supposing again that the lawyer (whose weight, we must not forget, amounted to 278 pounds), when seized by the narcoleptic fit, had fallen upon the revengeful referee in a manner so that the latter's pistol had gone off, thereby discharging a bullet which had penetrated the lawyer's heart or lungs, would any district attorney have given credence to the statement of the malicious referee that he meant only to frighten the lawyer? This case of narcolepsy offers still more hypothetical suppositions from which the possible legal consequences may be deduced. All the possible legal inquiries which may arise out of the type of autointoxications occasioning morbid sleepiness have their analogues in the forensic questions pertaining to the toxic states underlying epilepsy and epileptiform conditions.

On the hand of our present, still meager, knowledge concerning pathological physiology it is, of course, extremely difficult to prove the connection of a given instance of a neuropathic or psychopathic state with a catabolic poison or with a disturbance of the intrasystemic osmotic equilibrium. That we may have epileptic conditions without anatomical substrates is a fact known for many years. Certain forms of alcoholic epilepsy, for instance, are the direct consequence of alcohol or its normal or abnormal decomposition products. If we are satisfied that certain substances introduced into the organism may occasion epileptic or epileptiform attacks, why should not we also accept that certain toxic states of intrabiontic origin may manifest themselves by similar nervous phenomena?

At any rate, the medical jurist who holds that a specific instance of epileptic equivalent or of acute or cyclical insanity, proceeded from a well-defined autotoxic condition, stands on much firmer soil than the one who nonchalantly asserts that a "nerve crisis," or a "brain storm," is due to a family taint.

Chronic renal disease is sooner or later followed by a general autotoxicosis of the organism. This toxic state is due to the relative impermeability of the kidneys and the synchronous incompetence of the other emunctories. The substances accumulating in the blood serum exhibit little or no chemico-toxicity; they exert a noxious influence simply by their retention. The long-continued poisonous state arising on the basis of histolytic retention is generally referred to as chronic uremia. This condition, with its protean symptoms, offers ever so many and manifold legal aspects and complications. I know of a case of chronic uremia which was diagnosed as "ptomaine poisoning" by one of our leading physicians. An acute exacerbation of the chronic condition was pronounced a case of opium poisoning in the absence of the regular attendant by the hurriedly summoned physician of the neighborhood, with the result that the former had a suit for malpractice on his hands for over a year. I have seen uremic poisoning to be taken for fusel oil intoxication, and for poisoning with belladonna and aconite.

Some of the gastrointestinal concomitants of chronic uremia—nausea, vomiting, and diarrhea—are often referred to the ingestion of tainted food; disturbances of the nervous system as headache, vertigo, insomnia, are frequently looked upon as the result of medication; neuralgia, muscular cramps, and paresthesia are in many instances ascribed to injuries received lately or in years gone by.

Every one of these symptoms is a manifestation of the specific autotoxicosis, and, if the circumstances arise, each one may prove of decided medico-legal interest. However, of still greater importance for forensic medicine are the cerebral symptoms such as mania, melancholia, and delusional insanity, which are apt to accompany chronic uremia.

*A contribution to the Pathogenesis of Narcolepsy and other Forms of Morbid Sleepiness; MEDICAL RECORD, January 11, 1902.

These cerebral manifestations occur principally in uremia on the basis of chronic parenchymatous nephritis, the only renal affection which should be designated as Bright's disease. Among all mental diseases the psychoses of Bright's disease alone are truly autotoxic in character. They are the expression of a poisonous state of autochthonous formation and are not the result of morphological changes in the brain.

The delusional insanity of Bright's disease, the *Folie Brightique* of the French, has undoubtedly a greater forensic bearing than any of the other uremic psychoses. Instances of *Folie Brightique* occur in the practice of almost every physician, but are often overlooked in the milder forms, or not recognized as such when the insanity attains a severer degree.

This specific mental aberration of Bright's disease which, in the majority of instances, is delusional in character, is not due to molecular changes in the brain matter, but due to the impairment of the physico-electric conditions in the body liquids, an autotoxic state, the minute etiology and pathology of which I described some years ago.* However, the average alienist, although admitting a toxic insanity, has not progressed far enough to recognize an autotoxic insanity. Says Hamilton in his "System of Legal Medicine" (Vol. II., p. 120):

"Such somatic insanities as that due to Bright's disease are frequently referred to, but often great stress is laid by counsel upon the existence of the cerebral symptoms of this and other diseases, and their effect upon the conduct of the individual..... Beyond the irritability, stupidity, aphasia, and very rare epileptic conditions, nothing can be shown; but when we consider the renal disease, with cardiac disease, as precursors of actual degeneration of the cerebral vessels, it has a decided importance." He concludes as follows: "The demonstration of the connection between embolism, or cardiac disease, with cerebral softening and dementia, of syphilis with paretic dementia, or epilepsy, is of the greatest moment."

These statements are utterly devoid of any insight into the nature of chronic uremia, that is into the latter phases of Bright's disease. Cases of uremic insanity with lethal exit show cerebral changes only in the very rarest of instances. Even the edema of the brain, by which Traube wanted to explain the uremic phenomena, is wanting in many cases. A degeneration of the cerebral vessels has nothing whatever to do with the *Folie Brightique*, the delusional insanity of Bright's disease, which is and remains an autotoxic phenomenon. If we wish to study the delusional insanity of Bright's disease we have to view it as a manifestation of an autotoxic process; analogously do we have to treat it as an expression of an autotoxicosis when we make use of it as a defense or when we question the individual's testamentary capacity. Cellular pathology has still a *raison d'être* in surgery, for the scientific investigation of many psychoses it is absolutely useless. Were the mental aberrations of Bright's disease explained on the autotoxic basis, I am satisfied there would be fewer petitioners sadly wending their way homeward from the Surrogate's Court.

It is a fact, which is ever corroborated, that the individual with uremic delusions is easily influenced by his latest acquaintance to whom he has taken a liking. This explains in a measure why the chronic nephritic so often disposes of his property in an erratic manner, why he leaves the bulk of his estate to his nurse or the chance companion of his latter days. As the law holds in great esteem the right of an individual to make his own will—requiring, for instance, less mental capacity to make a will than to make a contract—it is in almost every contest a difficult task to disprove the testamentary capacity of the deceased. But why, we may ask, should not a person with uremic delusions while alive be adjudged non compos mentis? An individual thus afflicted, of course, has relatively lucid intervals, on which, according to law, the testamentary capacity may depend; however, the autotoxic process underlying the mental aberration is chronic and its fluctuations, as far as they pertain to its diminution, are only limited in degree. Thus the chronic uremic is always kept in a more or less abnormal state of mind, which fact ought to be taken into consideration at the inquest.

This brings to a conclusion my discourse on the forensic importance of the autotoxicoses. I have dwelt upon the topic in a brief and conservative manner; some subjects, I am fully aware, have been treated rather fragmentarily, others I have purposely refrained from entering into on this occasion. I believe, however, to have demonstrated:

1. That certain pathological conditions as well as certain forms of death demanding legal inquiry are due to autotoxic processes of catabolic origin.
2. That the catabolic autotoxicoses offer many and discrepant legal aspects.
3. That the time has arrived when the catabolic autotoxicoses should obtain legal status and citizenship in our courts of justice.

250 West Seventy-third Street.

*A Contribution to the Pathogenesis of the Uremic State; the Probability of its Physico-Electric Substratum; Medical Record, January 24, 1903.

SOME OBSERVATIONS ON THE TREATMENT OF GRAVES' DISEASE.*

By J. ARTHUR BOOTH, M.D.,

NEW YORK.

In a paper which was read before the American Neurological Association in June, 1894, I presented certain views, which were in support of the theory that the symptom complex of Graves' disease obtained its fullest explanation by the presence of some morbid change in the thyroid gland or its secretion, this important advance in our knowledge of the interesting and puzzling malady having been brought to our attention by the very valuable contributions of Victor Horsley, Moebius, and Kocher. Within recent years still further evidence has accumulated, so that at the present time it is the general belief that the thyroid gland dominates the disease. Permit me now to ask your attention to a brief review of some of this evidence, together with the results of my observations in twenty-five patients, who presented the different clinical types of the disease. The changes in vascularity and consistency of the gland were first noted and then followed the observation that there were also certain specific changes in the parenchyma and secreting cells, differing somewhat in degree in the various stages of the disorder. This enlarged, vascular gland, then, with its vesicles assuming other shapes than the round or square, together with a most marked development in the epithelium, now cylindrical instead of columnar, seems to justify the view that there is an increased or altered activity of its parenchyma and secreting cells.

*Read before the Philadelphia Neurological Society and the New York Neurological Society, March 16, 1907.

These changes will be readily appreciated by comparing a section from the normal human thyroid gland (Fig. 1) with that from a case of Graves' disease (Fig. 2). The specimens removed by thyroidectomy in my cases varied in vascularity and consistency. Microscopically the alveoli were distended

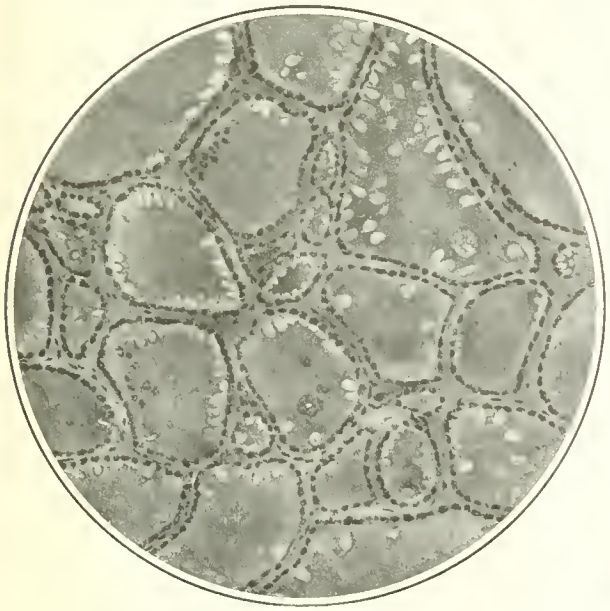

Fig. 1.—Section of normal human thyroid gland. (Kocher.)

with hyaline material and the tissue thickly crowded with round cells both in the alveoli and stroma. This evidence is satisfactory except in those patients who do not show any visible enlargement of the gland; and here we may assume that there is too slight an enlargement to be positively made out, or that the above morbid changes may be present without increase in size. Personally I have found it quite difficult to discover a slightly enlarged thyroid and in several of the operative cases noted how

Fig. 2.—Section of thyroid gland in Graves' disease. (Kocher.)

much larger the gland really was after exposure by the incision. It is believed that this changed gland produces an increased or perverted secretion, which, being absorbed into the blood by the veins and lymphatics, acts as an irritant directly or indirectly, like many other poisons, upon the heart, the nervous system, and upon the nutrition of many tissues in the body. What it is that starts the hypertrophy of the thyroid and neighboring glands, or what part the parathyroids or persistent thymus plays, are questions yet to be answered. Perhaps fright, some shock, emotion, microbic infection, or some heredi-

Fig. 3.—Case I.

tary taint may prove to be the exciting cause. In the present series of cases emotional disturbance seemed to be the exciting factor, as there was a distinct history of fright from burglars and fire in ten patients, and from first menstruation in one. Three patients had a good deal of mental worry.

Fig. 4.—Case II.

Three had chorea in childhood. The symptoms followed an attack of rheumatism in two patients. In four there was a family history of the disease, and in two there was a record of simple goiter in the family. Our former knowledge being deficient concerning the etiology and pathology of the affec-

tion, necessarily made the treatment difficult and uncertain; now, however, with the results of recent investigation before us, we are in a position for a more intelligent treatment both by therapeutics and surgery. Bue even at the present time, when an attempt is made to outline any specific line of treat-

Fig. 5.—Case III.

ment, one of the difficulties met with is the fact that the disease is represented by so many different types. For example, in the present series of cases there were three males and twenty-two females; seven were married and eighteen single. The average age

Fig. 6.—Case IV.

was twenty-one, the oldest being forty and the youngest twelve years of age.

Enlargement of thyroid, followed by tachycardia and exophthalmos, in ten. Tachycardia, followed by exophthalmos and thyroid enlargement, in seven. Exophthalmos, followed by enlargement of thyroid, in four. Tachycardia and nervous symptoms alone in four. Tremor was present in ten. Intestinal disturbances in only four patients. Fever was present in ten; noted as absent in six and no record in the others.

Assuming the truth of the thyroid theory, it is

Fig. 7.—Case V.

probable that these different clinical types represent various degrees of intoxication and thus explains this diverse symptomatology. These different clinical types being recognized, it is necessary and of great importance to have some form of classification as an aid to prognosis and the proper treatment of the disease; so with this object in view a division into three classes has been suggested,

Fig. 8.—Case VI.

which I will now give, illustrating the same with a few photographs.

First Group.—Here the clinical picture indicates a mild form of the disease. Marked toxemia is absent, as well as one of the cardinal symptoms, usually the exophthalmos; and we find a slightly en-

larged thyroid, with a moderately increased heart action. Many of these cases do well under treatment by rest and drugs and a few are cured. In those in which this method of treatment fails, operative treatment should be considered.

Case I.—Enlargement of thyroid and exophthalmos slight. Tremor; edema of the eyelids. Pulse,

Fig. 9.—Case VII.

100 to 118. Thyroidectomy. December, 1895. Cured.

Case II.—Exophthalmos and enlargement of thyroid slight. Pulse, 98 to 110. Thyroidectomy. April, 1893. Cured.

Second Group.—Simple chronic exophthalmic goiter or thyroidism of moderate severity, with all the symptoms which give origin to the name. The clinical picture is that of an advanced stage, and here medicinal measures give only temporary relief, but by thyroidectomy and the use of serum good results are obtained. In these cases it is not wise to delay operation too long.

Case III.—Decided exophthalmos and enlargement of the thyroid. Tremor and all the nervous symptoms. Pulse, 140 to 160. Thyroidectomy. November, 1893. Cured.

Case IV.—Patient is only twelve years old, and has all the clinical symptoms of the disease. Pulse, 120 to 140. Exophthalmos and enlargement of thyroid marked. At present under treatment by rest in bed and ice bag to chest. Medication, antithyroid serum and phosphate of soda. Is more comfortable. Pulse rate reduced to 110-118.

Case V.—Enlargement of thyroid and exophthalmos marked. Pulse, 120 to 140. Tremor and all the nervous symptoms. Thyroidectomy, November, 1895. Cured.

Third Group.—In this class we find a still further advance in the intoxication. Fever is a prominent symptom and may be quite high. The circulatory and nervous system are also markedly involved. Here operation is not profitable, as they are poor subjects for a shock of any kind, especially from an operation under general anesthesia. Dr. Rogers reports good results from the use of a cytotoxic serum in this class, but my experience in its use is too limited to give any definite conclusions.

Case VI.—This patient had all the symptoms of the disease in a severe form and finally died in an attack of acute mania.

Case VII.—Had all the symptoms of the disease for many years, with attacks of fever and a history of diabetes. Thyroidectomy, October, 1894. Death twenty-four hours after the operation.

Case VIII.—The advanced stage of the disease is well shown in this patient. Bilateral exsection of the sympathetic was performed by Dr. Curtis in January, 1893. There was rapid improvement in the exophthalmos and a reduction in the pulse rate to 100. She unfortunately died from pneumonia and nephritis two months after leaving the hospital.

The diagnosis of Graves' disease being made, the following details of treatment should receive attention:

(1) Rest; (2) electricity; (3) medication; (4) the consideration of operative interference by partial thyroidectomy, ligature of arteries, and sympathectomy; (5) the use of cytotoxic serum.

It is not necessary to consider here in detail the first three means of treatment, except to say that perseverance and strict attention to detail, placing the patient under the best hygienic conditions, with rest and plenty of fresh air, will accomplish a great deal towards mitigating the intensity of the symptoms and a cure may result in a certain number of patients, especially when the diagnosis is made early in the disease. In a record of eighteen cases, three were cured, five improved, and ten received no benefit from the treatment.

Operative Interference.—If as a result of our present knowledge we are justified in believing that a changed or excessive secretion is the causative factor of Graves' disease, then a rational therapy would seem to turn itself into one or two directions: either towards a positive limitation of the secretion by the partial resection of the gland, or a neutraliza-

Fig. 10.—Case VIII.

tion of the toxins by the use of an antitoxic serum. By the first method we have now sufficient data to clearly show that a more rapid and greater benefit occurs in a larger number of cases through operation than under medicinal treatment, and this is especially so in those patients who show the marked

symptoms of Group 2 in the above classification. Nine of my cases were treated by operation; thyroidectomy being performed in eight patients and bilateral exsection of the sympathetic in one. The operative work was skilfully performed by Dr. B. F. Curtis, with the following results: In the thyroidectomy cases the right lobe was removed in five and the left in three cases. Six were permanently cured, one was improved, and one died twenty-four hours after the operation with symptoms of acute toxemia. (Case VII.) Two of the operations were done in 1893, two in 1895, one in 1896, and one in 1897; being thirteen, eleven, ten and nine years ago respectively. Four of the patients have been seen and examined quite recently and are well, though in two of them there is still present a slight prominence of the eyes. The other two patients were well two years ago.

Antitoxic Serum.—From recent clinical studies of the thyroid gland in simple goiter and Graves' disease, there have been found some definite indications for serum therapy and good results have been reported by a number of writers. Recently Drs. Rogers and S. P. Beebe have introduced a specific serum and the results they have obtained by its use in over ninety cases warrant the conclusion that it is an agent of great value, especially in those patients showing symptoms of marked toxemia. One of the patients recorded by me as improved by thyroidectomy relapsed after a time and later was treated by Dr. Rogers. No improvement followed and the result was a failure in this case.

Conclusions.—(1) Although Graves' disease is recognized by the prominence of four symptoms, tachycardia, exophthalmos, goiter, and tremor, this symptom complex may be incomplete in the developmental stage of the disease and here the other symptoms are sufficient for the diagnosis. (2) At the time of the first examination the degree of thyroid intoxication should be noted and the patient then placed if possible under one of the three clinical groups. (3) The prognosis depends upon the hereditary, the social position of the individual, the type of the disease, and its early recognition. All these conditions being favorable, with good care and perseverance, there is a fair chance of recovery in those patients classed in the first group. The more advanced cases stand a better chance of recovery by operation, but this must not be delayed too long when organic changes have already set in. (4) Recent clinical and experimental data still further emphasize the general belief that overactivity of the thyroid gland is quite sufficient to explain the appearance of the symptoms of Graves' disease and their disappearance after operation. (5) Thyroidectomy should be the operation of choice, as giving the best results. (6) Death following operation is due to shock and the use of a general anesthetic; therefore this should be placed in only expert hands and local anesthesia employed when possible. (7) The introduction of the cytotoxic serum marks an important advance in the treatment of the disease, and perhaps may ultimately prove to be the only rational therapeutic method.

Stricture in Children.—The possibility of congenital stricture in young children suffering from urinary disturbances (frequent micturition, vesical tenesmus, retention of urine, etc.) should always be considered even in the absence of a traumatic cause or gonorrheal infection. Internal urethrotomy followed by systematic dilatation is as successful in these cases as in older persons.—*International Journal of Surgery.*

INDICANURIA, ITS ETIOLOGY AND PRACTICAL SIGNIFICANCE.*

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At the present time there is no condition in pathology and general medicine the interpretation of which is of greater importance to the general practitioner and surgeon than that of indican in the urine. While indican, like the overproduced uric acid[1] found in the urine, is a symptom only, it is highly important that we should correctly apprehend its true significance. To accomplish this necessitates a clear and comprehensive understanding of the method of its formation and the various conditions that give rise to its presence in the system.

As early as 1840 Prout[2] discovered a blue coloring material in the urine, to which he gave the name indigo, hence to him is due the credit of discovery. Long before this date, however, and for several years thereafter, many observations are recorded in reference to finding blue urine, and of sediments in the urine having a decided blue coloration. Even from the time of Hippocrates and Galenus down, similar observations are recorded.[3] It was not, however, until Prout announced his discovery, that indigo became a recognized factor in connection with the urine.

From 1840 to 1857, many observers recorded similar cases, but all were of the opinion that the blue coloring material discovered by Prout was identical with the indigo blue or indican found in plant life.

Schunck,[4] in 1857, demonstrated, as he thought, the constant presence of a substance in the urine which yields indigo blue on boiling the urine with mineral acid. This substance he called indican, and was of the same opinion as previous observers—that it was identical with vegetable indican.

Baumann,[5] about 1879, first demonstrated that no sugar was formed by the decomposition of animal indican, but that there was formed sulphuric acid and a compound belonging to the indigo group.

Prior to this, however, Nencki[6] had demonstrated the fact that indigo was one of the decomposition products of a still more complex body.

It was not, however, until the researches of Baumann and Breiger[7] that the exact composition of the urinary indican was first accurately determined. They proved that urinary indican was a combination of the conjugate sulphur of a hydroxylated indol with an alkali (potassium), to which they gave the name indoxylsulphate, and suggested that the term indican be restricted to the indigo-yielding substance of plant life. This suggestion, however, does not appear to have been adopted.

Shortly after this, Baeyer[8] demonstrated that a more simple substance was the antecedent to the more complex body indoxylsulphate of potassium, $C_8H_6NO\ SO_4K$. This simple mother substance, indol or indole, C_8H_7N, is formed in the lumen of the intestinal tract. It has since been demonstrated, beyond a question of doubt, by Nencki[9] and other observers, that indol is produced always and only by bacterial putrefactive decomposition of the proteid elements of the food stuffs during their passage through the alimentary tract. It has also been shown that the animal proteids are more likely to undergo this change than are the vegetable class. This is due to the fact that the animal proteid is a free and single molecule, one easily acted upon, both

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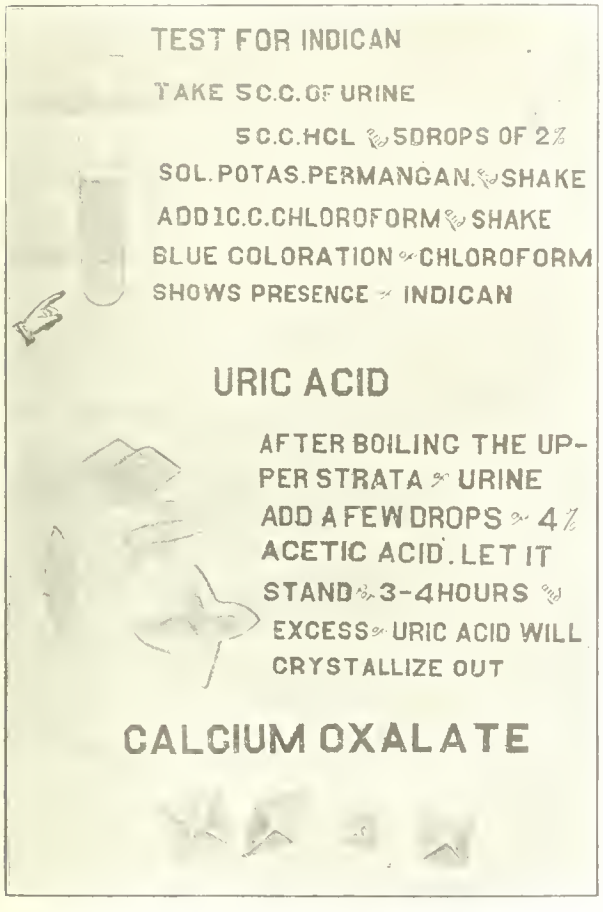
by the unorganized and the organized ferments. On the other hand, the vegetable proteid is a multiple molecule, and is encased in a capsule of cellulose, neither of which is easily acted upon either by the unorganized or the organized ferments. Hence the vegetable proteid passes through the alimentary tract in a large measure untransformed, acting simply as an irritant to the mucous membrane of the intestinal tract. As a natural sequence, the animal proteid is easily acted upon in the one case by the unorganized ferment, yielding a large quota of nutrition pabulum; on the other hand, if acted upon by the bacteria of putrefaction, it yields a large percentage of indol, and subsequently of indoxylsulphate of potassium.

As the vegetable proteid is not easily acted upon by either form of ferment bodies, it is difficult of digestion; it is also less likely to be acted upon by the bacteria of putrefaction, hence it decreases the


TEST FOR INDICAN
TAKE 5C.C. OF URINE
5C.C. HCL & 5DROPS OF 2%
SOL. POTAS. PERMANGAN. & SHAKE
ADD 1C.C. CHLOROFORM & SHAKE
BLUE COLORATION = CHLOROFORM
SHOWS PRESENCE = INDICAN
URIC ACID
AFTER BOILING THE UPPER STRATA = URINE
ADD A FEW DROPS = 4% ACETIC ACID. LET IT
STAND 3-4 HOURS &
EXCESS = URIC ACID WILL CRYSTALLIZE OUT
CALCIUM OXALATE

tendency to the formation of indol and subsequently the formation of the indoxylsulphate of potassium. While it does cut down the tendency to the formation of indol, it does not prevent it absolutely. Further than this, the overtaxation of the digestive system, when on a purely vegetable diet, and the reduction in the supply of the nutritive pabulum cause profound disturbance in the metabolic cavity of the system, which is often more detrimental than the toxemia of the indicanuria.

Hopper-Seyler and his pupils[10] were of the opinion, from their observations, that indol could be produced by the action of the unorganized, as well as the organized, ferments. They also claimed that indol was produced in the intrinsic proteid tissues of the body, as well as from the extrinsic proteid contained in the food stuffs in the lumen of the alimentary tract.

The observations of Senator,[11] in connection with the urine and meconium of newly-born children, support conclusively the contention of Nencki that bacterial action is required for the production of indol. Hence indol cannot be formed in the intrinsic tissues of the body except through the action of the bacteria of putrefaction. That this does occur in some rare instances cannot be doubted.

Just how and when indol is joined to the sulphurous acid molecule and the potassium atom, is not clearly stated by any of the investigators. Neither are we informed fully as to when the sulphurous acid molecule takes its origin from the proteid molecule. All observers agree, however, that it comes from the sulphur of the proteid molecule, and that it enters into the formation of the indoxylsulphate. One thing seems to be certain, that it is not formed in the renal structures.[12]

Baumann,[13] having found a much larger amount of ethereal sulphates in the liver than in the blood, was of the opinion that the synthesis of the indol into an ethereal sulphate took place in the hepatic cells. The larger amount of ethereal sulphates in the liver as compared with the blood does not prove conclusively their formation in the liver. The ethereal sulphate being a foreign substance to the normal physiological economy, the liver in its sentinel-like function may exercise its guardianship over the general circulation and, in a measure, prevent the passage of the ethereal sulphates into the hepatic blood stream; hence the finding of the larger amount in the liver. Thus we have a logical and well-founded physiological explanation for the larger amount in the hepatic organ without assuming that it is produced in the liver cells.

On the other hand, it seems hardly possible that such active chemical action as the splitting off of the sulphur atom from the proteid molecule, with the formation of sulphurous acid, the decomposition of one of the stable potassium salts, and the synthesis of these three simpler elements (sulphurous acid, indol, and potassium) into the highly complex indoxylsulphate, could occur in the protoplasm of the hepatic cell without destroying its functional activity. If the change occurred at the edge, or bile-duct surface, of the hepatic cell, and the newly formed compound was at once discharged into the lumen of the bile duct, such a theory might be accepted, especially as it has been proven that sulphuric acid is so formed in the cells of the mucous membrane of the stomach[14] in the production of the HCl.

Viewed in this light, there are two theories to choose from regarding the formation of the sulphurous acid and its combination with the simple compounds, indol and potassium, to form the more complex substance, the etherial sulphate.

First: The sulphurous acid may be formed primarily by the same bacterial action that decomposes the proteid molecule to form the indol in the intestinal canal, following which the acid attacks one of the potassium salts, liberating the potassium atom to enter into combination with the acid and indol to form the indoxylsulphate of potassium in the intestinal tract. When thus formed this ethereal sulphate obeys the law common to all mineral salts. The indoxylsulphate is absorbed unchanged into the enterohepatic circulation, passes on to the liver, then to the general circulation, and finally reappears without being changed, and under its own form, in the urine. When this occurs the presence of the ethereal sulphate is easily demonstrated in the urine by its oxidation into indigo blue by some one of the various methods recommended.

The following method has proved the most reli-

able in the hands of the author. Add in a test tube equal quantities of urine and chemically pure hydrochloric acid. To this mixture add three drops of a ½ per cent. solution of potassium permanganate. If indican is present in the urine, there will be formed a purplish cloud in the fluid in the test tube. Then add a few drops of chloroform, then one drop more of the permanganate of potash solution, and a few more drops of the chloroform; then shake vigorously. As a result this purplish coloration will be replaced by a deep blue, which is due to precipitation of the indican by the chloroform. The amount and intensity of the precipitated indican determine the extent of the putrefactive changes going on in the alimentary tract. (See the accompanying illustration.)

One other point should also be noted in this connection, which is that the shade of color varies very much—ranging from a deep blue to a decided greenish, or even black, coloration, the later colorations being found in connection with varying degrees of interlobular compression jaundice. It has also been found that a close analysis of the color enables one to judge quite accurately regarding the varying metabolic conditions of the system.

There is still one other fact of especial importance in connection with this test, which is, that the associated toxicity of the system is not always in direct proportion to the intensity of the indicanuria. For it often happens that a considerable portion of the indican escapes with the feces, while the toxins are absorbed into the circulation.

On the other hand, a close analysis of the different shadings in the color reaction, when correctly interpreted, is a very close guide as to the intensity of the associated toxemia.

Second: The indol formed in the intestinal tract is absorbed as such from the alimentary canal, and carried by the entero hepatic blood stream to the hepatic glands. Having reached the liver, the indol is drawn from the blood stream of the intralobular plexus of capillaries into the protoplasm of the hepatic cells. At the same time, proteid molecules are also drawn into the protoplasm of the same cells, together with oxygen. This results in a splitting off of a sulphur atom and the oxidization of the same into sulphurous acid, while the remainder of the proteid molecule breaks up into other forms of byproducts. The sulphurous acid now combines with the indol and the potassium atom, but where the potassium atom comes from is not indicated by any of the observers. If this theory is accepted, the sulphurous acid must decompose a potassium salt, thus liberating a potassium atom before the synthesis is completed. Having formed the idoxylsulphate of potassium in this manner, instead of flowing out of the cells with the bile, what would be the natural course for an oxidation product to pursue? It is dropped back into the intralobular capillary blood stream, or the lymphatic channels. From this point it flows out of the liver, in either the blood or lymph, and ultimately reaches the general circulation. Finally the renal glands are reached, by which organs it is excreted together with the urine.

Neither of these theoretical methods of formation has been actually proved. The intestinal theory of formation is the more probable one, from the well-known fact that the intestinal tract is the great chemical beaker of the system; that in this intestinal beaker chemical activity of a high order is constantly occurring, while there is no proof that such action occurs in the deeper structures of the body."*

Neither does it seem possible to have the formation of sulphurous acid in the hepatic cells, the splitting of the fixed potassium salts, and the combining of these three substances into one complex whole in so delicate a protoplasmic substance as that of the hepatic cells. Were this to occur, we should expect an absolute destruction of the protoplasm of the cell structure and the formation of a permanent lesion of the liver cells, the same as occurs in the joint structures in gout when the proteid molecule is vicariously oxidized into uric acid in the cartilage cells.[45]

By either method of formation the chemical evidence proves conclusively that the other by-products formed by the decomposition of the proteid molecule are varied and often highly toxic in nature. It is also probable that in connection with these abnormal chemical changes in the contents of the alimentary tract, many of the undecomposed proteid molecules are isomerically transformed and converted into toxalbumins. The reason for this latter assumption is the great difficulty of recognizing the toxin in the blood. Were the toxin in all cases a by-product of proteid decomposition, judging by those that we are more familiar with, it ought to be easy of recognition. As the toxins are not easily recognized, only two methods of explanation are left: one, that the toxin is unstable and volatile in nature; or that it is an isomeric form of the proteid molecule—both of which are difficult to recognize and analyze accurately.

When these toxic substances, no matter how formed, reach the general circulation, and finally the nervous system, they give rise to an almost endless variety of symptoms, depending upon the nature and the amount of the poison entering the animal economy, and the inherent ability of the system to resist their toxic action. The intestinal method of formation conforms more closely to the general plan of chemical activity constituting animal life than does the hepatic theory. In all probability the intestinal explanation for the synthetic formation of the indoxylsulphate and the associated toxic products is the correct solution of this problem. As the indoxyl potassium sulphate is produced by the action of the bacteria of putrefaction only, its presence in the system and urine must be regarded always as a pathological product, and can never be classed as physiological and normal in amount. No deviation from an ideal standard can be classed as normal. The chemical processes of animal life must be perfect, and any deviation therefrom is indicative of an abnormal state. Evidence of this kind must be classed as a danger signal, that indicates the necessity for speedy correction if more serious deviations are to be prevented—such as may be recognized as absolutely pathological conditions.

With this conception of the production of ethereal sulphate or indican, as it is more commonly classified, we are in a position to consider the conditions that favor its production and the correct interpretation to be placed upon its presence in the urine.

As the production of the ethereal sulphates is always due to the action of the bacteria of putrefaction, we must determine the conditions favorable to the growth and development of these microorganisms. As a first promise, it may be stated that so long as the digestive secretions are normal in amount and composition, a decidedly restraining action is maintained over all forms of pathogenic bacteria, without inhibiting those that are essential

* At the time that the author penned the above sentences he was not aware that Neumeister had in a large measure advanced the same theory in regard to the synthesis of this simple substance.[4] He therefore calls attention to the fact that Neumeister was of the opinion that the ethereal sulphate was formed in the intestinal tract as the result of synthetic action excited by the bacteria.

for the normal digestive action. Therefore, it is common to speak of the gastric juice, the bile, and pancreatic secretion as being antiseptic in their actions, although this is not true in the stricter sense if closely applied to any single constituent of these secretions. But taken as a whole, this is unquestionably true; therefore, anything that tends to decrease the total quantity or the perfection of the digestive secretions, favors the growth and development of the bacteria of putrefaction and the formation of the ethereal sulphates.

The three fundamental factors in predisposing or leading up to a state of the alimentary tract favorable to the growth of pathogenic bacteria that give rise to the condition classed as indicanuria are: First, eating and drinking too much, or taking food of a faulty composition; second, a decrease in the amount or perfection of the digestive secretions; and, third, a faulty innervation of the glandular system as a whole.

Eating too much of any kind of food, or too largely of the vegetable class, simply overtaxes the digestive powers and ultimately decreases the so-called antiseptic qualities of the secretions poured into the intestinal tract. Too free use of the vegetable class, coupled with the fact that many are highly fermentable, causes undue irritation; all due to their great indigestibility—which ranges from 10 to 80 per cent—are highly irritable on account of this large undigested residue, and therefore prone to excite putrefaction.

This continued irritation of the intestinal tract tends also to produce an excessive secretion of a thick, tenacious mucus, instead of the normal amount, which is just sufficient to act as a natural lubricant. When the secretion of mucus is overabundant and viscid, it acts as a culture medium for the growth of the bacteria of putrefaction, and thus we have developed a putrefactive fermentation of the proteid constituents of the food, the formation of indol, phenol, skatol, etc., and finally the ethereal sulphates derived from indol.

The constant overtaxing of the digestive organs by simple overfeeding ultimately results in a defective secretion of the ferment substances, even though the food be of good quality and composition. When this occurs, the intestinal canal contains an undue amount of undigested material, which now acts upon the mucous membrane in a manner similar to what is noticed when too much food is taken of the vegetable class, or the food is imperfect in composition. In one case there is no defect primarily in the output of the digestive secretions; while in the other, the primary fault is more particularly in the secretions of the digestive glands.

When for any reason the nervous system becomes overtaxed and poorly nourished, there may be defective innervation of the digestive organs, and this is at once followed by a decrease in the quantity and composition of the digestive ferments poured into the alimentary canal. This in turn is followed by all the changes already described. Overeating at a time when one has for a long time used the nervous or muscular system unduly, is often the cause of an incomplete innervation of the digestive system, and produces changes which permit of the action of the bacteria of putrefaction. Simple overworking of the nervous mechanism, and particularly prolonged and severe mental activity, is often the only apparent cause of the incomplete innervation, decreased digestive secretions, and putrefactive changes in the intestinal tract.

But even in these instances a careful analysis of the case almost always reveals a preceding period of faulty feeding, an imperfect digestion, a faulty metabolism, and especially so in connection with the nervous mechanism. In cases of this nature, even after the indicanuria has been brought under control, and when every function of the body is being perfectly effected, any severe or prolonged mental exertion will speedily arrest the perfection of the digestive secretions and the indicanuria will at once recur, even though the patient strictly adheres to a well-regulated diet and may be still taking the requisite amount of out-of-door exercise.

The one exception to the almost universal rule that there must be errors in diet and a faulty digestion before the disturbances in the nervous mechanism will excite indicanuria, is in connection with those instances in which the nervous system has been subjected (when the whole system is otherwise in an apparently normal state) to a severe injury or shock. When this occurs there may be almost complete arrest of nerve innervation to the digestive organs, at a time when they are acting normally. In such an instance the primary defect may be traced to the nervous mechanism, and, secondarily, to the digestive organs. As a rule, however, the primary defect is found to be in connection with the diet and digestive system, and, secondarily, in the nervous mechanism. In most instances it is very difficult to draw a sharp line of demarkation between the two systems, yet the distinction can be made if each case is accurately studied by itself.

From this it is easy to see that we are dealing with a very complicated situation, one that gives rise to an endless variety of symptoms, one in which, at the beginning, so far as the deeper structures are concerned, no microscopic lesions can be detected. Later on, if the conditions persist, the development of easily recognizable lesions in one or all structures of the animal economy is of frequent occurrence. Whichever organ of the body is the most vulnerable will be the one to give way to the prolonged toxemia.

Before actual changes are developed in the anatomical structures of the body, the symptoms associated with the presence of indican in the urine are largely nervous in character and often very poorly defined. This is undoubtedly due to the large variety of toxins that are developed in connection with the putrefactive changes going on in the intestinal tract. There may be vague and ill-defined manifestations at various parts of the body. There are often neuralgic symptoms. There may be convulsions, coma, and even death in some rare instances. Not infrequently there are convulsive attacks that so closely resemble those of the so-called central epilepsy that it is almost impossible to distinguish the one from the other, except as the result of treatment. There are often headache, vertigo, insomnia, —an endless train of symptoms. When there is an associated intralobular compression jaundice, there is apt to be a persistent nausea.

There are no specific symptoms that can be classed as distinctive of indicanuria save the presence of indican in the urine. Considerable emphasis is given by some observers to the absence of free hydrochloric acid in this class of cases, as a causative factor in the development of the putrefactive changes in the intestinal tract. On the other hand, others claim that the presence of indican in the urine is evidence of free hydrochloric acid in the gastric secretion. The author is of the opinion that free hydrochloric acid is not always absent from the gastric secretion in these cases, and that when it is absent it is a secondary and not a primary condition, except in so far as all the digestive secretions are

decreased in quality and quantity, as already explained.

From these data it is clearly apparent that indican in the urine is always secondary to the action of the bacteria of putrefaction, acting usually upon the proteid elements contained in the alimentary tract; that the conditions favoring this abnormal fermentation are varied and multiple; that every case must be studied by itself and the relative importance of each one of these predisposing factors taken strictly into account; if absolutely perfect success is to follow our therapeutic endeavors. Owing to these varied conditions it is no easy matter to correct these defects when once well established.

The diet must be regulated in accordance with the well-known physiological law, so that the food taken will not be unduly irritative or fermentable. It must be of an easily digestible character, so that digestive energy will be conserved in the highest degree, and everything must be done to secure a perfect nerve innervation of the glandular system when it is below the normal standard. It is unwise—even if it were possible as some have claimed—to render the alimentary canal antiseptic. Much can be done in the line of decreasing the excessive fermentation of the viscid mucus, which is the medium that supports the growth of the pathogenic bacteria. This can be accomplished by the judicious administration of tanalbin. In so far as we succeed in this line, do we bring about practically a condition which is equivalent to rendering the alimentary canal antiseptic.

When these varied conditions are kept constantly in mind and each one given its proper importance, and treatment instituted to correct each one in the order of its importance, some wonderful cures are effected, and many serious chronic affections are prevented.

Time will not permit taking up every little detail of treatment, nor can a general detail be given of all the medication which can be brought into play in the management of these cases, for the simple reason that no two cases are alike. For this reason, what will give good results in one case may fail in another, and vice versa. Therefore, all that can be done is to point out, as we have attempted to do, the various methods by which the abnormal conditions lead up to and produce this complex condition covered by the simple term indicanuria, and to suggest from the data the general lines of treatment that must be followed to secure the desired results.

The minute details of treatment, such as the selection of the medicinal remedies and diet to be employed, must be left to the judgment of the individual practitioner, for each case must be studied separately and treated according to the special indications presented by the individuality of the patient.

The chief points in this discussion are as follows:

1. Indicanuria is one of the most important conditions in connection with clinical medicine.

2. Indican was discovered by Prout in 1840.

3. Blue substances have been recorded in the urine from the time of Hippocrates to the present.

4. Baumann and Breiger were the first to determine accurately the composition of indican.

5. Baeyer demonstrated that a more simple substance, indol, was the antecedent of the more complex body known as indican.

6. Nencki and others demonstrated beyond a question of doubt that indican is always the result of putrefactive fermentation.

7. Animal proteids are more likely to undergo putrefactive fermentation than the vegetable class.

8. Vegetable proteids are much more difficult of digestion than are the animal class, hence they are less economic, and often detrimental to the system.

9. Senator has proved conclusively that bacterial action is required to produce putrefactive fermentation in connection with the production of indican.

10. The sulphur atom in connection with the formation of indoxyl potassium sulphate comes from the proteid molecule as the result of its oxidation reduction.

11. Indican is primarily formed in the intestinal tract, and not in the liver.

12. Numerous toxins are formed at the same time that the indican is produced.

12. These toxins are absorbed into the circulation from the alimentary tract, and by their action upon the nervous system excite an almost endless variety of symptoms.

14. The conditions favoring the production of indican are errors in diet, lack of outdoor exercise, defective digestive secretions, and profound disturbances in the working of the nervous mechanism.

15. Indican in the urine is never normal, but always indicates an abnormal condition, because a putrefactive process can never be regarded as a normal or physiological phenomenon.

16. Successful treatment of these conditions depends absolutely upon an accurate apprehension of the etiological factors entering into the production of indicanuria, and also the best methods for the removal of those factors.

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LOCOMOTOR ATAXIA; A NEW THEORY AS TO ITS CAUSE.*

By L. N. DENSLOW, M.D.,

NEW YORK.

THERE has, as yet, been no explanation as to the exciting cause of the changes that take place in the nervous system in this disease. It is in the hope of throwing some light on the subject that the present article is submitted.

In the light of my clinical experience I am of the opinion that the changes that occur in this disease are due primarily to irritation of peripheral nerves, producing reflex disturbances in the spinal cord and brain, and that such irritation kept up continuously for a sufficient length of time can and does produce pathological changes in the cord, although such irritation it has been supposed could only bring about functional disorders.

Under certain conditions of tissue either syphilitic or non-syphilitic pathological changes do begin and continue until grave conditions exist. It would seem that the nerve tissues are subject to degeneration from peripheral irritation only under certain conditions and exempt from it in others. From the fact that almost all authorities agree that there is a primary or inherited syphilitic history in the greater number of cases of tabes, it is possible that that disease is most frequently responsible for tissue condition necessary for its development.

The highly neurotic temperament would seem also at times to furnish a fertile soil, it having been met with in my experience in such cases a number of times and in those where there was no history of syphilis either acquired or hereditary, but always a positive peripheral irritation.

Exposure to cold, overexertion, sexual excesses, and alcoholism all have been given as contributory causes, but when one takes into consideration the thousands who suffer from all these occurrences and the comparative rarity of the disease, it would seem that there must be some other necessary factor.

In all my cases some source of peripheral irritation was found, and wherever corrected marked relief ensued. This would lead one to infer that, no matter what the condition of tissue, without the addition of the peripheral irritation, and that long continued, the tabes was not set up.

Trauma has been found in several instances to have been followed by tabes with more or less serious symptoms supervening very early in the disease. It has been thought that in such cases the shock of the injury only precipitated the disease, as irritation was always found and the symptoms yielded quickly upon relieving the irritation.

It was not the writer's experience to find a syphilitic history in every case, but in all without exception some source of peripheral irritation was found, and when amenable to treatment more or less relief was experienced.

According to Tuczek chronic ergotin poisoning induces a degeneration of the posterior columns of the cord in all points analogous to that which constitutes the anatomical lesions in tabes. This would appear to have a special bearing on the theory in hand from the well-known action of ergot on the unstriped muscular fibers; there from their general distribution over the body in the skin, could so be acted upon by the drug as to set up a general peripheral disturbance by their alternate contractions and relaxation acting upon the nerves and capillary vessels. The writer's article, "The Etiology and Treatment of Acne" (by Ergot), *New York Medical Journal*, February, 1881, bears directly on this subject. The observations of Dejerine have shown that a neuritis of the peripheral nerves may produce a symptom complex very similar to that of tabes dorsalis (peripheral neurotabes).

Thus we have two exciting causes of tabes: (1) Long continued peripheral irritation causing it with and without a prior syphilitic infection, and (2) chronic ergotin poisoning; and there is also a third cause, peripheral neuritis, producing a symptom complex very similar to that of tabes dorsalis.

From this would it not be fair to presume that in the case of a disease which is produced by agencies quite other than syphilis, and where syphilis is known not to have entered into the condition, and where the pathological changes do not resemble in their inception, course, or form any of the manifold and characteristically usual ones of syphilis, the disease is not primarily due to syphilis, but that other agencies enter into its causation.

*Read before a stated meeting of the New York Academy of Medicine, Thursday, May 16, 1907

If we allow for the present that peripheral irritation is the cause of the changes in tabes, I would submit a possible explanation of the mode whereby these changes may be accomplished. It is known that the conducting nerve substance is a very simple tissue, almost protoplasmic, being little more than highly phosphorized fats in a weak saline solution. In other words, this portion of the nerves consists of colloid particles in suspension. Now, if we apply Prof. Mathews' theory that when a nerve is stimulated electrically the colloid particles of these fats are precipitated and that coagulation to a certain extent takes place, we have a working hypothesis.

The peripheral irritation referred to in this article is that which is and has been constant for a period of time longer or shorter, as the case may be, but above all persistent and producing continuous, unconscious nervous stimulation. This irritation may exist for years without being known to the patient; in other words, without ever producing any local symptom. Such nervous action would keep up a condition of chronic coagulation, which in time would become permanent. This condition accords well with the actual first change that is found. Given this change the subsequent alterations of nerve tissue are but natural sequelæ, for with the increased sensory irritability consequent upon such coagulation, and the disturbance of the orderly action and balance of both the sensory nerves and their ganglionic cells, with their trophic connections, and given the continued persistence of the initial peripheral irritation, it would seem that there was sufficient to account for the perpetuation and progress of all the pathological changes that take place in the disease.

In connection with the foregoing theory it is interesting to note that it does not conflict with Marie's view, modified by Oppenheim,* that "the exciting cause of tabes acts upon the spinal ganglia and their homologues and injures them without at first altering them structurally," and that "this is sufficient to cause atrophy of the sensory fibers of the spinal cord, of the medulla, and of the periphery, which come from the ganglia. This atrophy gradually ascends, *i.e.* towards the ganglion cells, until their fibers are also involved." Also of special significance is the fact that Wollenberg and Stroebe discovered degeneration changes in the nerve-cells even in incipient cases of tabes.

I believe this theory of the etiology of tabes to be correct. It is based upon a considerable clinical experience. I am further of the opinion that if this is found to be the case it must create a basis for a new etiology in tabes, and possibly for other nervous diseases of unknown origin.

It has been considered by the writer sufficient at the present time simply to advance his theory in general. But in order to give other investigators the benefit of his experience he would state that the location of the irritation was genitourinary in both sexes in the cases examined, although it is believed that the causes may be as varied as those known to produce the wide range of functional disorders.

It would be of interest to know whether eyestrain was the primary cause or perhaps a contributing cause in those cases of the disease in which atrophy of the optic nerve takes place. It is proper to add that the theory advanced and these views are the result of clinical experience with a number of cases which have been observed and treated for a siderable period—some of them having been relieved in varying degree of their distressing symptoms, while others have been apparently cured, in so far at least as that all symptoms disappeared and that health and strength were regained, enabling them to return to their former mode of life and occupation.

This would lead us to infer that symptoms occur in many cases of this disease with a severity out of all proportion to the actual change in the cord and consequently that there must be a wide sphere of functional disorder in these cases beyond such change.

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*Oppenheim's Diseases of the Nervous System, 1904.

THE MILK SUPPLY OF VIENNA.

By ERNST J. LEDERER, M.D.,
VIENNA.

The dairy company of lower Austria which supplies the greater amount of the milk consumed in Vienna is subject to control by the provincial diet of lower Austria. The central depot in Vienna receives the milk from seventy-six affiliated dairies throughout the province, and these in turn receive the daily supply from a total number of 5,222 individual producers. The principal aim of the organ-

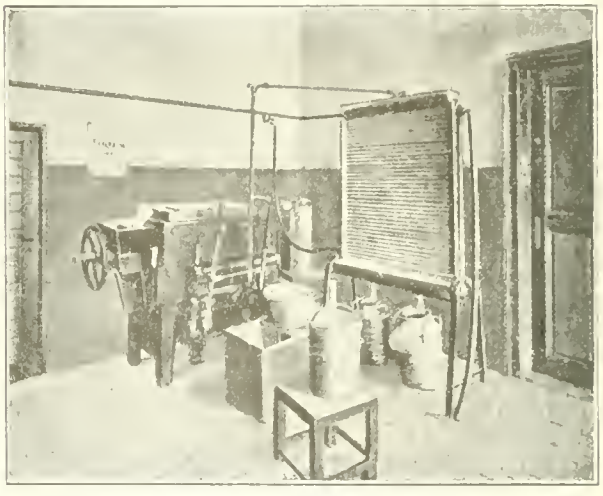

Fig. 1.—Cooling apparatus of a milk receiving station in the country

ization has been to regulate the methods of obtaining and handling the milk at the various places of production, an object which experience has shown to be especially important since farm milk, although superior in other respects, lacked that keeping quality which is one of the essential requirements in milk intended for city consumption. This aim was attained by making it immediately incumbent upon the directors of the affiliated dairies to inspect the milk at the sources of supply according to definite instructions given them by the Government Inspector of Dairies. The inspectors visit the various stables, criticise the condition of the stock and the cleanliness of the barn, etc., and make the owners remedy any existing defects or introduce needed improvements. They also supervise the feeding and care of the cows, as well as the milking. The fundamental principles which must govern the manner of feeding, tending, and milking the cows are thoroughly explained by the Government Inspector to the members of an affiliated dairy when such a one is established. Each member is supplied with a book in which is entered the daily amount of milk delivered, and to this book is appended a printed list of regulations, compliance with which is legally obli-

gatory. The Government Inspector further has the duty of visiting and inspecting the various dairies at regular intervals, and of rendering reports of such visits both to the provincial diet and to the directorate of the Dairy Company of Lower Austria. Veterinary inspection of the milch cows has likewise been introduced.

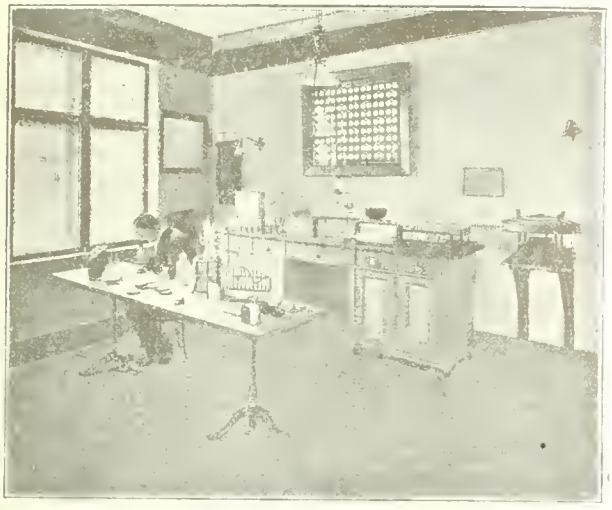

Fig. —2. Laboratory.

The new-drawn milk must be delivered at the local depot after each milking, if possible while still warm from the cows. It is then measured, tested, purified, and cooled, and if not sent off immediately it is placed in the front compartment of the refrigerating room until shipped. The local depot in which the milk is received and treated is a building which in every particular conforms to modern requirements. Each affiliated dairy has such a depot, which comprises ice-house, cooling compartment, wash-house, and the necessary apparatus, such as pipe systems for cooling, strainers for purifying the milk, apparatus for determining the percentage of fat, lactometers and thermometers for testing the milk, as well as centrifuges and the requisite appliances and apparatus for butter-making. Since the milk delivered to the local depots by the various members must be transported to the railway station to be shipped to the central depot in Vienna, the affiliated dairies have wagons which can be covered to protect the milk against the heat of the sun. The value is fixed according to quantity and percentage of fat, the latter being determined by the Government agricultural chemical laboratory in Vienna. The average contents of fat, according to the laboratory's findings, are as follows:

AT EASTER.

No. of Affiliated Dairies.	Percentage of Fat.
5	3.57
5	3.61
5	3.95
5	3.60
5	3.65
Average	3.62

AT CHRISTMAS.

No. of Affiliated Dairies.	Percentage of Fat.
5	4.11
5	4.00
5	4.12
5	3.97
5	3.80
Average	4.02

The amount of impurities contained in the milk from each producer furnishes a criterion by which are judged the care and cleanliness observed in milking. The high state of purity in which the milk from the various dairies reaches Vienna may be seen from the following table, which gives (in milligrams) the amount of impurities contained in one liter of milk, and showing comparison with various German cities. These investigations were likewise conducted by the agricultural chemical laboratory in Vienna:

	Minimum.	Maximum.
Vienna	0.5	7.5
Würzburg	3.02	8.10
Leipsic	3.80	11.50
Munich	9.00	27.90
Berlin	10.30	50.00
Halle	14.92	72.50

In the central depot, however, the milk undergoes still further purification, so that on reaching the consumers it contains only a mere fraction of a milligram of impurities per liter.

When the milk reaches the central depot in Vienna, it is poured into a large vat and weighed. The vat is provided with a system of strainers and close-meshed gauze for purifying the milk. The gauze is renewed every time after it has been used, and before being used again it is carefully washed and sterilized in live steam. The purification process gives very gratifying results. The milk, which is already in a high state of purity when it reaches the central depot, contains only from 0.3 to 1 milligram of impurities per liter after having undergone the additional purifying process in the central depot. From the weighing-vat the milk is led into the pasteurization apparatus where it is heated to 70° C. The receiving hall contains three such pasteurizers.

Although the control exercised by the affiliated dairies, the government inspector, and the veterinary surgeons aims at excluding milk from farms or barns in which contagious diseases prevail, it is not impossible, in view of the great prevalence of

Fig. —3. Pasteurizing room.

tuberculosis among milch cows, that milk from diseased cows may reach the dairy. For this reason the *entire* quantity of milk intended for direct consumption is pasteurized at 70° C., whereby all disease-producing organisms that may be present, but especially the tubercle bacillus, are rendered harmless without the milk undergoing any essential

changes, either physically or chemically. After pasteurization the milk is pumped on to the pipe coolers, where it is rapidly chilled to from 2° to 4° C. (35.6° to 39.2° F.) and thoroughly aired. From the coolers the milk is run into large galvanized-iron vats, from which it is poured into

FIG.—4 Hall for reception and distribution of milk.

cans or bottles. The latter process takes place by means of bottling apparatus. Immediately after having been filled the bottles are stoppered—by means of machinery—with paraffined paper stoppers which bear the date of bottling.

After pasteurization a certain quantity of the milk is creamed through two centrifuges, and divided into whipping cream (30 per cent. fat), tea cream (16 per cent.), and coffee cream (10 per cent.), as well as skimmed milk. These products are each cooled to a low temperature in separate apparatus immediately after the centrifugal process. The various kinds of cream are bottled by machinery, while the skimmed milk is led into a separate compartment and poured into cans which are plainly

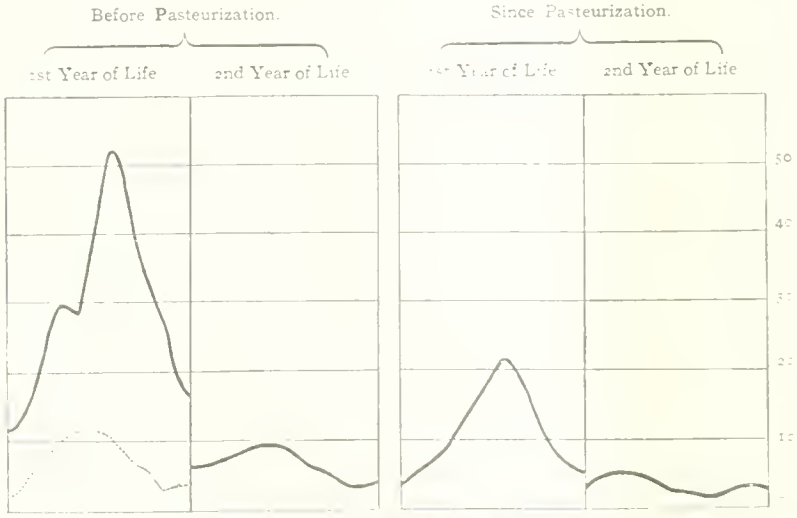

Chart showing the mortality of bottle-fed [illegible] Year before and since the system of pasteurization was introduced. The [illegible] column indicates the mortality of breast-fed children.

marked "Skimmed Milk" in red labels. The skimmed milk is utilized by bakers in the making of fine pastry, etc., any surplus amount being made into whey cheese. Unsold cream is made into butter.

The central depot contains bathrooms, and a medical examination room in which all employees who handle the milk are periodically examined by a municipal health officer. Persons suffering from tuberculosis or other contagious diseases are excluded. Both male and female employees are enjoined to bathe regularly.

Separate from the other departments is the room in which the milk for children is handled. For this purpose is used the milk from only one dairy, the cows supplying which are tested with tuberculin to make certain that they are free from tuberculosis, and kept under rigid inspection by the Veterinary Board of Lower Austria. This milk very closely resembles human milk in its chemical composition. It is sterilized at 102° C.

The process of pasteurization has absolutely no effect on the nutritive value of the milk, while rendering its taste more pleasant. Neither does it affect the formation of cream. The system has been in use for seven years; and the beneficial effects of the improved milk supply, especially with regard to the feeding of infants, are demonstrated by the statistical data. (See Chart.) The proportion between the mortality rates for breast-fed and bottle-fed children was formerly (especially in the summer months) 1:20, while it is now from 1:5 to 1:8. The circumstance that bottle-fed children are given better milk reduces the rate of mortality for those in the second year of life also. Regarding the cost of the milk, the process of pasteurization increases the price from 3-10 to 1 heller per liter (1-13 to 1-4 cent per quart).

PILOCARPINE AS AN ADJUVANT IN THE TREATMENT OF SYPHILIS.

BY WILLIAM J. ROBINSON, M.D.,

NEW YORK.

THE use of pilocarpine in the treatment of syphilis is probably not entirely unknown. But the drug is so seldom mentioned in treatises on the subject and it has given the writer such remarkable results in certain cases which refused to be further influenced by the mercurials and iodides that he considers it his duty to bring it before the notice of the profession in this preliminary note, in advance of a more detailed contribution.

I have not the slightest intention, of course, of recommending pilocarpine as a *substitute* for mercury and iodine. But there are certain cases of lues which seem to be supersaturated with mercury and which no longer respond to the drug. We may change the combination of the mercury, we may change the method and avenue of introduction—the symptoms fail to be influenced, or even become aggravated. The submaxillary, axillary, and inguinal glands instead of diminishing in size uder the influence of mercury, as they generally do, become larger and even painful. Such cases are particularly apt to be met with in patients in whom sufficient attention has not been paid to gastrointestinal elimination, to hepatic, renal, and dermic activity. Almost every physician has come in contact with such cases in his practice.

Now, try in such cases a few doses of pilocarpine and you will be gratifyingly astonished at the results. Most remarkable is the effect of pilocarpine on salivation and stomatitis. One might think it rather strange to administer a powerful sialogogue in salivation. But the fact remains that nothing will stop mercurial salivation so effectually as will small doses—say two milligrams—of pilocarpine. It is much more efficient in this respect than atropine or potassium chlorate. And the rationale is not difficult to understand. Salivation and stomatitis are caused by an excess of mercury, imbedded in the glands and acting as a toxic foreign body. Pilocarpine, being one of our most powerful glandular eliminants, acting both as a sialogogue and a diaphoretic, removes the useless excess of mercury, and thus cures the trouble by removing the cause. (Atropine, on the other hand, merely masks the symptom of mercurial salivation.) Another fact of which the writer has convinced himself again and again: Cutaneous syphilides which will obstinately resist the persistent administration of mercury will disappear rapidly, if pilocarpine be administered for several days, either in addition to the mercury, or even if the mercury be discontinued altogether (provided of course the patient has had sufficient mercurial treatment). I explain the modus operandi of pilocarpine in such cases as follows: In most cases the greater part of the mercury administered is eliminated through the bowels and kidneys. If the amount to be eliminated is too large or if the ratio of elimination is too rapid, we get cramps and diarrhea on the one hand and mercurial nephritis on the other. Very little or no mercury is eliminated through the skin and sudoriparous glands, unless special care is taken to keep them at a high state of functional activity. The pilocarpine does just that. The system may be "saturated" with mercury, but the mercury may remain dormant and therefore useless. The pilocarpine, increasing enormously the activity of the skin, brings the mercury to the surface, the skin lesions are directly affected, and the syphilides therefore disappear. If pilocarpine be given for a week or two and then discontinued, it will be found that much smaller doses of mercury will be necessary in order to produce the desired effect.

Method of Administration.—The pilocarpine should never be prescribed in combination with other remedies—always alone. We can then increase or diminish the dose, or discontinue it altogether, at pleasure. I prescribe the alkaloidal salt either in the form of pills, containing two milligrams each (1-32 grain), and of these I order two pills three times a day, sometimes increasing to three or four pills per dose; or I prescribe it in the following solution:

Pilocarpinæ hydrochlor	0.12	(2 grs.)
Aquæ chloroformi	120.0	(4 oz.)

Detur in vitro nigro.

S. 3i to 3ii t.i.d.

In not a single case have I observed any undesirable by-effects, and in no case could I find, though I carefully watched, symptoms of cardiac depression.

I have careful notes of a rather considerable number of cases, in which the beneficial effects of pilocarpine were unmistakable; and I guarded carefully against falling into post hoc-propter-hoc fallacy. But I will report those cases at a later date. In the meantime, asking the profession to give pilocarpine a careful trial as an adjuvant in the treatment of syphilis, I will lay down the following propositions:

1. Pilocarpine is a most remarkable glandular eliminant, and glandular elimination is one of the most important factors in the successful treatment of syphilis.

2. Pilocarpine is of value in all secondary manifestations of the disease.

3. There are many cases which become intolerant to the further use of mercury; the system seems supersaturated and continuing the mercury in such cases means injuring the patient. Discontinuing the mercury, giving pilocarpine in the interval, enables us to resume the former drug with excellent effect.

4. Pilocarpine should be prescribed alone, either in pills or solution, and should be given in doses of two to eight milligrams (1-32 to 1/8 gr.) two to three times a day.

12 Mount Morris Park West

Two Hundred Scopolamine Narcoses.—Parlavecchio reports 200 cases of operation under narcosis with scopolamine, many of them being of grave nature. The technique of Tuffier was used in all cases by the author, three injections being given during two hours before operation, of three millegrams and a half of the drug. Often after the second injection, sometimes after the first, anesthesia was complete and continued for from six to ten hours. Scopolamine should not be used under the age of ten years, while it is well tolerated by persons of advanced age, by those with nephritis, arteriosclerosis, and other conditions in which ether is contraindicated. The advantages of scopolamine are that it avoids the vomiting which is present after ether or chloroform, and permits of operation in persons of small vitality. It is convenient to operate in the lateral position or on the back, as may be desired, and is especially valuable in operations on the head or neck.—*La Riforma Medica*

The Saturday Night Tub.—Mr. Sidney Young has recently delivered an interesting lecture on the "Relations Anciently Existing Between Barbers and Surgeons." From the facts adduced one learns that it was the custom of no less a person than King Henry VIII. to perform partial ablutions on occasional Saturday evenings. The "King's barber," one John Pen, Penn, or Penne, an ancestor of the famous Quaker of that name, was expected to be present at these august ceremonies, when the Defender of the Faith was pleased "to cleanse his head, legs, or feet." The regulation requiring the barber's attendance was a standing order, dating apparently from the reign of Edward IV. It is preserved in the "Liber Niger Domus Regis" (Harl. MS., 642), and its wording seems to imply that the solemn washings were partial and special rather than thorough, and that the king's majesty often did without them. The royal barber, who was also a groom of the privy chamber and one of the fifteen persons allowed to enter it, was also required to shave the king daily, "having in readiness his water, basons, knives, combs, scissours, and such other stuffe as to his roome doth appertaine for trimming and dressing of the king's head and beard." He was further required to "take a special regard to the pure and clean keeping of his own person and apparel, using himself always honestly in his conversation without resorting to the company of vile persons," and so on. Thus we have the beginning of asepsis. When he was shaving the king a knight of the chamber or squire of the body, or both, were required to be present in order to prevent foul play. The portrait of Pen figures prominently in Holbein's famous picture of Henry VIII. delivering a charter to the barbers and surgeons on the occasion of their union in one body.—*The Lancet*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

PUBLISHERS

WM. WOOD & CO., 51 FIFTH AVENUE.

New York, June 15, 1907.

PASTEURIZED MILK.

It has been decided by the New York City Board of Aldermen that the pasteurization of the substandard milk offered for sale in this city is neither necessary nor desirable, and the importation and distribution of various pathogenic microorganisms will therefore go on for the present. The agitation of the subject has, however, already borne fruit in opening the eyes of the public and directing more forcibly the thoughts of the profession to the vital importance of a pure milk supply. The first requisite to this is cleanliness at the source, for no amount of pasteurization or even of boiling will convert a milk full of gross impurities into an acceptable food. All that pasteurization aims to do is to destroy the germs which even the best of milk contains in greater or lesser numbers, and with which milk, carelessly handled, drawn from diseased cows, or carried in imperfectly sterilized bottles or cans, actually swarms. Therefore, if the immediate result of the agitation in and out of the public press is only a more careful inspection of the farms and creameries at the source of our milk supply, it will not have been in vain.

The opponents of pasteurization contend that the process renders milk unfit, or at least less fit, for consumption, since it destroys the contained enzymes and so causes a deterioration in its nutritive qualities. Without attaching too much importance to this theoretical objection, it may be conceded that untreated milk, if absolutely free from the germs of tuberculosis, pus cocci, and other pathogenic microorganisms, is preferable to the sterilized (boiled) or even pasteurized fluid. Doubtless raw meat from the recently killed animal contains certain nutritive principles which are destroyed by heat, but there are advantages in cooking meat which by universal consent outweigh the loss in nutritive properties which it may sustain in the process. It is also alleged, as though this were an argument against the principle of pasteurization, that the agitation is furthered by the makers of pasteurizing apparatus. It is not unlikely that these manufacturers are alive to the possible benefit they may derive therefrom, and if they are thereby stimulated to perfect their apparatus the community will profit as well as themselves. The fundamental question is whether pasteurization does or does not prevent disease, and its determination can be arrived at only by discussion and study, so that the present agitation of the subject, even if it were of purely commercial origin, as it is not, can but be productive of good.

In the present issue of the MEDICAL RECORD are three articles bearing on this subject which are worthy of attention by those interested. In the Copenhagen letter our correspondent describes the measures which have been taken to procure a pure milk supply for that city. There is probably no large city in the world which can boast of a purer raw milk supply than Copenhagen, and it is interesting to note that this has been brought about by private initiative, the milk merchants having had the wisdom to see that it was to their own advantage to supply their customers with the best wares procurable. Concerning the London supply, little need be said; the milk is neither pure nor purified, although there is a prospect that the present public discussion started by the *Lancet* investigation may result in some improvement. On page 986 a Viennese contributor describes the measures that have been taken to protect the inhabitants of that city from milk poisoning. There pasteurization is now the rule, and the comparative infant mortality curves show what the saving of life has been since a system of general pasteurization was instituted. But infants, although the chief, are not the only sufferers from an impure milk supply. In a recent report on the milk problem issued by the Washington, D. C., Milk Commission it is stated that during the past twenty-five years the medical journals have published the histories of 105 epidemics of typhoid fever, in addition to 69 of scarlet fever and 36 of diphtheria, traceable to milk. One can imagine, though exact statistics are wanting, how many deaths, how much suffering, and how many unproductive days of illness might have been saved had the germs of typhoid fever, scarlatina, and diphtheria been destroyed by pasteurization before this poisoned milk was ingested. To this may be added the fact, demonstrated by E. C. Schroeder, Calmette and Guérin, and others, that one of the most potent sources of infection by tuberculosis is milk drawn from tuberculous cows.

Referring to the milk supply of Washington, this Commission reports: "It must be apparent that it will require time and education to secure compliance with even reasonable safeguards, and it is equally evident that the number of dairy farms now in a position to live up to sanitary requirements will supply but a small percentage of the population, although it is hoped that they will be stimulated into existence by trade competition and the refusal of the public to buy dirty milk at any price. Until this is accomplished, the committee, in the interest of public health, strongly advocates clarification and pasteurization of all milk; this, to be sure, will not make bad milk good, but it will at least destroy its power to transmit disease germs." The men who have signed this report are not uninstructed laymen or persons interested in the manufacture of pasteurizing apparatus, but men who know whereof they speak. The constitution of the committee is as follows: Dr. George M. Kober, Chairman; Emil Berliner; Dr. G. L. Magruder; Dr. C. F. Mason, U. S. Army; Dr. A. D. Melvin, Chief of the Bureau of Animal Industry; Dr. J. R. Mohler of the Bureau of Animal Industry; Dr. M. J. Rosenau, Director of

the Hygienic Laboratory of the Public Health and Marine Hospital Service; Col. R. G. Smith of the U. S. Army, and E. H. Webster, Chief of the Dairy Division of the Department of Agriculture. The conclusions of this committee apply with equal force to the milk supply of New York and all other large cities, and they add weight to the arguments of those who believe that the only safety for all consumers of milk in this city, for many years to come, will lie in the pasteurization of the bulk of milk offered for sale, only excepting that supplied by dairies certified by the Milk Commission of the County Society or some other competent authority.

This is not in disparagement of the laudable efforts of the Health Commissioner of this city to better the milk supply by a system of inspection of the dairy farms. Such inspection is absolutely necessary, but it will be many years before perfection can be secured in this way. Moreover, political considerations may at any time lead to the supersession of the present Commissioner by one more subservient to the demands of the "district leaders," and when this change comes, what will become of the elaborate system of dairy inspection which he is building up? Unfortunately, little confidence can be placed in the permanence of any efficient system of inspection under political control. The present Commissioner of Health is doing what he can, with about one-tenth of the necessary force of inspectors, to insure a pure milk supply, but no man knows what his successor will do. Until the political millennium, and until model dairies can be conducted as cheaply as ordinary cow farms, the only safety for the mass of milk consumers will lie in public or private pasteurization.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The Atlantic City meeting of the American Medical Association, held last week, was quite successful, and, excepting a personal encounter in one of the Section meetings, fairly harmonious. The scientific work in the various Sections was up to the average, though it suffered somewhat from the fact that the Congress of American Physicians and Surgeons, held a month before in Washington, had taken the cream of what those who are members of both organizations had to offer. The weather was cold and did not tempt to board-walk life, but this served to increase attendance at the Section meetings, so, in the interest of the scientific work, it was perhaps not to be regretted. The public addresses were good, that on State Medicine being especially interesting, and the thoughts expressed in the President's address were sound. The suggestions as to reform in the management, foreshadowed in Dr. Bryant's address to the Medical Society of the State of New York in Albany last January, were for the most part omitted at Atlantic City. The President did, however, offer what may be construed as a protest against the suppression of criticism in the columns of the official *Journal*, and he hinted that there might be danger in the wording of the constitution, which declares one of the objects of the Association to be "to safeguard the material interests of the medical profession." "It requires no special discriminating sense," he said, "to foresee the devious interpretations which eager desire might willingly give to the phraseology of this declaration."

The protest of the Medical Record last year against secrecy in the financial affairs of the Association has borne some fruit, for the Trustees announced that all details of the expense account will be furnished verbally on request, though they said it was inexpedient to state what wages are paid the linotype workers or the girls employed in wrapping the *Journal* for mailing. The three Trustees whose terms of office expired this year were re-elected, somewhat to the disappointment of those who do not favor the close corporation principle in the management of scientific bodies. It was urged that the members of the Association give their cordial support only to those journals which carry the advertisements approved by the Council on Pharmacy and Chemistry. This suggestion, if acted upon, would exclude from favor all the independent journals, among them several edited by members of the Board of Trustees, as well as a number of the best of the State journals.

Dr. Burrell of Boston was elected President of the Association, to take office at the next annual meeting, which will be held in Chicago. This is doubtless in recognition of Dr. Burrell's excellent work in connection with the Boston meeting in 1906, one of the largest and best conducted meetings in the history of the Association. The choice is in every way most commendable. The selection of Chicago for the next place of meeting was wise, for it will give the members in attendance the opportunity to see the headquarters of the Association and to gain an idea of the practical workings of the business part of the organization.

On the whole, the meeting gave evidence that the Association is prospering in material affairs and that its membership is increasing satisfactorily, notwithstanding the defection of over two thousand during the year. This is a matter of congratulation to all loyal members, even to those who believe that a still greater measure of prosperity would follow upon a change in men and methods which would recall those who have left, prevent future defections, and bring into the fold the great mass of the profession of the country which is opposed to the system of oppressive paternalism against which the President of the Association so eloquently warned his hearers in the New York State Society a few months ago.

The Coronary Arteries.

The literature relating to the anatomy and physiology of the coronary arteries represents an unusually extensive field of investigation, but the results have so far been more or less unsatisfactory in that they have been full of contradictions. The ordinarily accepted view that the coronary arteries are end arteries—if not in the strict sense of Cohnheim, at least from a functional standpoint—has been contested by numerous observers, and in a recent contribution by Hirsch and Spaltcholz in the *Deutsche medizinische Wochenschrift*, May 16,

1907, appears to be definitely disproven. Spalteholz, who studied the problem from the anatomical standpoint, by means of a specially devised injection method combined with a process for rendering the tissues translucent, comes to the conclusion that the coronary arteries, far from being end arteries, possess numerous anastomoses both on the surface of the organ and in the substance of the myocardium. Each papillary muscle is supplied by several afferent vessels communicating with each other by numerous branches. These studies for the most part were made on the hearts of dogs and monkeys, but comparisons showed that the results could legitimately be transferred to the human organ as well. The fact having been established that the heart is not deficient in arterial anastomoses, but, on the contrary, is remarkably rich in these, the clinical application of this observation had to be determined by experiments on the living organ. Bier has already shown that the different organs behave very differently in regard to the consequences of ligation of their arterial trunks and that the anatomical picture alone does not suffice to explain the results of the occlusion of the afferent vessel. This part of the investigation was conducted by Hirsch, who found by work on dogs that in the heart muscle the conditions attending coronary obstruction or occlusion depend largely on the anatomical or functional state of the vessels, and to a still greater degree on the *vis a tergo* or cardiac power. The sudden blockage of a coronary artery is therefore a particularly serious occurrence, if the vessel is arteriosclerotic, and observations of the blood pressure in these cases are practically important as affording an insight into the force of the heart's action. In angina pectoris associated with a low blood pressure the use of rapidly acting heart stimulants is likely to restrict the dimensions of a resulting infarct, but if there is increased vascular tension any further elevation of pressure must be avoided and morphine and the vasodilators are indicated.

Hypertrophy of the Prostate.

The operative treatment of hypertrophy of the prostate has now, at least in the hands of certain operators, reached a highly satisfactory state of development—so much so that a German surgeon of international reputation is reported to have said that now that prostatectomy is available it is a pleasure to grow old. None the less the mortality of the operation is still comparatively high and there are many contraindications to its performance, so that nonoperative measures must continue to bulk largely in the treatment of the condition. Among these, permanent drainage of the bladder by a soft rubber catheter is highly commended by Vogel (*Berliner klinische Wochenschrift*, May 20, 1907), who says that the results of the use of this procedure in the stage of congestion are often astonishingly good, particularly if the patient is in the stage of congestion. In these cases there is a vicious circle in which the enlargement of the gland causes retention of urine, and this in turn occasions congestion of all the pelvic viscera and so contributes to the increase in size of the prostate. Continuous catheterization by relieving the vesical distention brings about a general improvement, which often continues for a considerable length of time, and even in the later stages of the malady great relief may attend the occasional resort to this measure. The patient may in this way reacquire the power of emptying his bladder unaided, or if the improvement is of short duration benefit may follow leaving the catheter in place for an hour or two a day, or every other day. It is of great importance that the catheter be inserted into the bladder only far enough to allow its eye to be just beyond the sphincter, and it must be firmly fixed in this position. Numerous methods have been suggested for this purpose, but the one preferred by the author is as follows: Two strips of adhesive plaster about .5 cm. in width and 15 cm. in length are applied at their middles to the catheter at the meatus in such a way that their ends form a cross. These four ends are fastened to the glans, and are further secured by a strip passing circularly around the coronary sulcus, though this must not constrict the organ. The dangers of cystitis must of course be reckoned with in resorting to this method, and the most scrupulous asepsis is an essential.

Protection Against Infection from the Intestinal Canal.

A problem that has been made the subject of much research is that of determining the conditions under which the passage of bacteria from the intestinal tract into the blood stream is facilitated or impeded, but the results so far have not been very conclusive. A recent contribution of considerable interest is that of Uffenheimer (*Münchener medizinische Wochenschrift*, May 14, 1907), who found that the intestinal tract of the new-born guinea pig is resistant to the passage of all bacteria and genuine albumins, except the tubercle bacillus and antitoxins. On repeating the experiments with new-born rabbits, however, it was found that these animals exhibited a greater degree of susceptibility to the passage of bacteria and albumins through the gastrointestinal mucosa. By a series of ingenious experiments the author was led to the conclusion that this disparity depended in general on a fundamental difference in the bactericidal properties of the blood, and particularly on the amount of alexin in the serum. On removing the alexin from the serum of rabbits by saturation with goat erythrocytes he uniformly succeeded in causing the passage of prodigious bacilli into the blood of the experiment animals, and he expresses the conclusion that the amount of alexin in the serum of an individual is the decisive factor in determining whether or not bacteria gaining access to the intestinal canal are to succeed in gaining a foothold in the circulating blood. If this conception proves to be well founded, its bearing on the mechanism of infection in such diseases as typhoid fever is self-evident, and additional light is thrown on the protective agencies of the body.

Chemically Treated Roadways.

A recent issue of the *Lancet* calls attention to a practice, evidently extensively followed in England of sprinkling roadways with a solution of calcium chloride. The increasing motor traffic has made the question of dust a more pressing one than ever before, and the immediate results of the new practice seem very satisfactory. The roadbed thus sprinkled is converted more or less into a permanently moist state on account of the hygroscopic properties of the salt. The latter is cheap and its

supply abundant. But, as the *Lancet* states, we have yet to learn of the permanency of its good effects and have yet to find if it has any drawbacks. Is it free from corrosive properties? Our contemporary asks: "Will it affect the feet of the horse, sheep or ox? Will it attack the rubber tire? Will splashings containing calcium chloride corrode clothes, the skin, woodwork, and so on? Perhaps also some risk may be involved in inhaling a dust impregnated with an irritating salt. As is well known, a solution of calcium chloride practically acts as an acid and readily attacks iron and other metals, so that it is possible that the use of calcium chloride as a dust preventer on the roads may prove to be a remedy worse than the disease. A shower of rain, of course, is calculated to wash out the calcium chloride, so that the moment dry weather succeeds wet the application of the salt would have to be renewed." The problem of the new dust-layer is manifestly not yet reduced to its lowest terms.

News of the Week.

Red Cross Congress.—The formal opening of the eighth international Red Cross conference took place in London on June 11. Lord Roberts welcomed the delegates and read communications from the Queen, from the Dowager Empress of Russia, and from the Florence Nightingale Assembly. The congress closes to-day with a reception to the delegates at Buckingham Palace, at which the King and Queen, General Robert M. O'Reilly, U.S.A.; Col. William C. Sanger, and naval and military attachés will be present. The United States, in addition to General O'Reilly, is represented officially by Medical Director John C. Wise, U.S.N., while the American Red Cross delegates are Colonel Sanger, Miss Mabel T. Boardman, and Ernest P. Bicknell.

For a National Department of Sanitation.—At the banquet of the Practitioners' Club of Jersey City, held in this city on June 11, Congressman Eugene Leake of Jersey City announced that at the next session of Congress a bill would be introduced providing for the establishment of a Federal sanitary bureau to take over the health problems now scattered among several departments, and to centralize and coordinate the work of public sanitation. The bill will probably include the appointment of a medical member of the Cabinet.

The Correction of Medical Nomenclature.—The Medical Society of Athens, in the endeavor to assist in the formation of a system of classical Greek medical nomenclature, for the guidance of men of science who use chiefly the Greek language for scientific terms, has appointed a committee, of which Professor S. Mangina is chairman, entrusting this committee with the collection of the classical Greek definitions to be proposed as substitutes for irregular terms newly introduced into medical literature and in use both in Greece and in foreign lands. Dr. Achilles Rose of this city has been unanimously elected a member of this committee.

Coroner's Physicians Bill.—Governor Hughes has vetoed the bill increasing the number of Coroner's physicians in Brooklyn. In doing so he points out that if the law is to be amended at all it should provide that the number of Coroner's physicians within the Greater New York should be fixed by the local authorities and not by the Legislature.

Suicides in Chicago.—An unusually large number of suicides was reported in Chicago during the past month. January had twenty-five cases of suicide, February twenty, March thirty-seven, April forty-six, and May fifty-five. In the first five months of the year there were seventy-five murders, twenty-two of which were committed in May.

Hygienic Cigars.—Cigars are now made in Germany which are free from the danger of transmitting infectious diseases from the workman to the smoker through the practice of gumming the wrapper. In the new method the wrapper is held in position by a tinfoil ring, removable before smoking.

A Conference of Physicians Interested in Hydrotherapy was held at Atlantic City on June 4, 1907. Dr. Simon Baruch was called to the chair and Dr. Frank E. Brown appointed secretary. Representative physicians from several States discussed the importance of furthering the study, teaching, and practice of hydrotherapy and other physiological methods. A committee consisting of Drs. Hare of Jefferson, Thayer of Johns Hopkins, Baruch of Columbia, and F. E. Brown of Baltimore were appointed to formulate a symposium on these subjects for the next meeting of the American Medical Association.

Louisiana State University Medical School.—At a recent meeting of the Board of Supervisors of the Louisiana State University, held in Baton Rouge, the charter and by-laws of the new medical college of the University, to be established in New Orleans, and the contract of assimilation between the University and the Medical Department were submitted to the Supervisors and approved. It is the general understanding that this medical department is to be ready for opening during 1908.

McGill University Medical Building.—It is planned to rebuild the medical building of McGill University, which was recently destroyed by fire, on a plot of ground immediately opposite the Royal Victoria Hospital. The ground is owned by Lord Strathcona, who bought it for the purpose of preventing residences being built opposite the hospital, and is believed to be willing to place it at the disposal of McGill. The laboratory, which practically escaped the flames, will remain where it is, but the plot on which the medical building proper stood will be cleared and left for the general beautification of the grounds.

Columbia University.—On the recommendation of the faculty of medicine, Dr. James D. Voorhees has been made adjunct professor of obstetrics, Dr. Royal Whitman adjunct professor of orthopedic surgery and Drs. George R. Lockwood, William K. Draper, and Van Horne Norrie adjunct professors of clinical medicine. Plans have been filed for the partial remodeling of the Vanderbilt Clinic building of the College of Physicians and Surgeons at the southeast corner of Amsterdam avenue and Sixtieth street for the establishment of a department of hydrotherapy.

The New Civic Health Commission of Chicago, recently appointed by Mayor Busse, is composed of the following: Mrs. Marshall Field, Dr. Nicholas Senn, Dr. Frank Billings, Dr. C. E. Kahlke, Dr. W. E. Quine, and Dr. C. H. McKenna. During periods of high mortality in the city Dr. Evans, Health Commissioner, will consult with the commission as to the best means of checking the death rate.

For a Street Cleaning Commission.—Mayor McClellan has asked the Board of Estimate to appropriate $10,000 to be used for the expenses of

a commission of three engineers whom he will appoint to investigate and report at an early date on an improved system of street cleaning, and a better method of disposing of the city's waste. The following are suggested by the Mayor as suitable members of such a commission: H. de B. Parsons, Esq., S. S. Whinery, Esq., and Rudolph Hering, Esq.

Chicago Death Rate in May.—During May there were 3,028 deaths reported in Chicago from all causes, this being equivalent to an annual death rate of 10.91 per 1,000. Pneumonia led the death causes with 685; consumption, 352; heart diseases, 243; nephritis, 215, and violence (including suicide), 201.

New Nursery and Hospital for the Cribside Society.—The new building for the nursery and hospital for the Cribside Society, to be erected at Fullerton avenue and Orchard street, Chicago, will be ready for occupancy January 1. This building will be a two-story red brick structure, built on strict colonial lines. Its dimensions will be 41 by 37 feet.

Quarantine Against Cuba.—Passengers arriving in this port from Cuba now have their temperatures taken at Quarantine and if thought advisable are kept under observation for a day or two at Hoffman Island. An arrangement has been made in Havana under the sanction of the United States Marine Hospital Service to enable passengers to the Southern States to avoid detention on landing by spending several days under observation in a quarantine camp before sailing. It is planned to centralize the sanitation of the whole island under Major Kean, United States Sanitary Supervisor. An executive department of sanitation may be created later.

Plague in Trinidad.—Two fatal cases of bubonic plague in negro children have been officially reported from the Island of Trinidad. The health authorities have cabled to this city a request for antiplague serum.

Gifts to Hebrew Charities.—The will of the late Louis Josephthal, filed for probate last week, leaves $5,000 to Mount Sinai Hospital to found a bed in his memory, and $2,500 to the Montefiore Home for Chronic Invalids.

The British Royal Institute has awarded the Actonian prize of one hundred guineas to Madame Curie, in recognition of her researches in the field of radiology.

Illinois Bill against Cigarettes.—Governor Deneen has approved the Berry anticigarette bill, forbidding the use of cigarettes in public by minors under eighteen years of age, and also forbidding the sale of cigarettes to minors under that age. A fine of $100 or jail for thirty days is provided for those who adulterate cigarettes.

Japanese Gastroenterological Association.—Dr. J. Takamine and Dr. Max Einhorn, both of this city, have been made honorary members of this Association.

Optometry Bill.—The bill permitting the practice of optometry under certain restrictions having passed the Legislature, a hearing on the bill will be held by Governor Hughes on June 17, before he takes final action on it.

Bequest to St. Luke's Hospital.—The will of Mr. James Morris of Ridgefield, Conn., which was probated last week, leaves $18,000 to St. Luke's Hospital, the income to be used in providing rides for sick children in Central Park. Another bequest of $10,000 is also made to the same hospital, to be added to $6,000 already given, in memory of the testator's son, Marion Gray Morris. The income from this is to provide for the services of a voice to sing hymns in the children's ward. Mr. Morris and his wife had already given $2,000 to provide rides for sick children.

The Eleventh Antialcoholic Congress will be held at Stockholm, Sweden, July 28, 1907. These meetings, held in different cities of Europe during the past few years, have attracted a great deal of attention. The Swedish Government, through its State and Educational Departments, has taken full control of this Congress and formally invited every country in Europe, as well as the United States and Canada, to send representatives and eminent persons interested in and acquainted with the subject. The State Department at Washington has appointed as delegates to this Congress, for the Government, Surgeon-General O'Reilly of the U. S. Army and Medical Inspector Beyer of the Navy, Drs. T. D. Crothers of Hartford, Conn., and T. A. McNicholl of New York City, to represent the medical profession, and Mr. B. A. Hockhart of Hartford, Conn., to represent the temperance organizations and the Swedish people of this country.

International Congress of Psychiatry, Neurology, Psychology, and Nursing of the Insane.—The second provisional program of this Congress, which is to be held in Amsterdam, September 2 to 7, 1907, has been issued and is printed in Dutch, French, German, and English. Detailed information is given regarding the general arrangements for the Congress, the subjects for discussion, etc. The president is Professor G. Jelgersma of the University of Leyden, and the general secretaries are Drs. G. A. M. von Wayenburg, and J. Van Deventer, Prinsengracht 717, Amsterdam.

Boston University Medical School.—Dr. John P. Sutherland, Dean of the Boston University Medical School, has announced that, beginning next year, the course at the school for the M.D. degree will be increased from four to five years.

Dr. I. Boas of Berlin, editor of the *Archiv für Verdauungskrankheiten* and author of numerous works on gastrointestinal disorders, has been appointed to a professorship in the University of Berlin.

American Academy of Medicine.—At its Atlantic City meeting this organization elected the following officers: *President*, Dr. Thomas E. Davis, Pittsburg; *Vice-Presidents*, Drs. James K. McBride, Pasadena, Cal., F. P. Rogers, Providence, R. I., L. F. McMurtry, Louisville, Ky., A. M. Holmes, Denver; *Secretary and Treasurer*, Dr. Charles McIntyre, Easton, Pa.; *Assistant Secretary*, Dr. A. R. Craig, Philadelphia.

South Dakota Medical Association.—At the twenty-sixth annual meeting of this organization, held in Sioux Falls on May 23, Yankton was selected as the next meeting place. Officers were elected as follows: *President*, Dr. L. C. Mead of Yankton; *Vice-Presidents*, Dr. S. A. Brown, Sioux Falls, and Dr. C. R. Wright of Huron; *Secretary-Treasurer*, Dr. R. D. Alway of Aberdeen.

Upper Cumberland (Tenn.) Medical Association.—At the meeting of this Association, held in Carthage on May 30, officers as follows were elected for the ensuing year: *President*, Dr. Sam Denton of Buffalo Valley; *Vice-President*, Dr. J. Howard King of Chestnut Mound; *Secretary*, Dr. L. D. Cot-

ton of White county. The next meeting will be held at Sparta.

Southern Railway Surgeons' Association.—Officers as follows were elected at the meeting of this organization, held in Washington, D. C., on May 30: *President*, Dr. H. T. A. Lemon of Washington; *Vice-President*, Dr. C. H. Starkel and Dr. T. J. Happel; *Secretary and Treasurer*, Dr. J. U. Ray, reelected. The next meeting will be held at Birmingham, Ala.

Arizona Medical Association.—The officers elected at the sixteenth annual meeting of this organization, held in Bisbee on June 30, are as follows: *President*, Dr. A. R. Hickman, Douglas; *Vice-Presidents*, Drs. A. W. Alcott of Tucson, J. E. Drane, Jr., of Mesa, and L. P. Kendall of Jerome; *Secretary*, John W. Foss of Phoenix; *Treasurer*, E. B. Kitcherside of Globe.

Medical Society of Northern Virginia.—At the meeting of this society held in Alexandria on May 23 officers as follows were elected: *President*, Dr. Tunis C. Quick of Falls Church; *Vice-Presidents*, Dr. G. T. Vaughn of Washington and Dr. F. M. Brooks of Fairfax; *Secretary*, Dr. Avery A. Rittenour of Alexandria.

Arkansas State Medical Society.—These officers were elected at the meeting of this organization held in Little Rock on May 17: *President*, Dr. C. C. Stephenson of Little Rock; *Vice-President*, Dr. H. Fink of Helena, Dr. J. L. Butler of Sheridan, and Dr. C. B. Stevens of Magnolia; *Secretary*, Dr. Morgan Smith of Little Rock; *Treasurer*, Dr. J. W. Scales of Pine Bluff.

West Tennessee Medical Association.—This association, at its meeting held in Jackson on May 17, elected the following as officers: *President*, Dr. H. Hawkins of Jackson; *Vice-President*, Dr. F. D. Smith of Memphis; *Secretary and Treasurer*, Dr. A. I. McSwain of Paris.

Montana State Medical Society.—At the meeting of this society held in Billings on May 16 officers were elected as follows: *President*, Dr. W. W. Taylor of Kalispell; *Vice-President*, Dr. J. C. Shaff of Butte, Dr. R. A. Monohan of Butte, and Dr. G. G. Cogswell of Livingston; *Secretary*, Dr. Grace W. Cahoon of Butte; *Treasurer*, Dr. D. A. Donovan of Butte. Butte was selected as the place for the next annual meeting.

Physicians' Club of Chicago.—At its annual meeting, held May 28, the following officers were elected: *President*, Dr. Daniel R. Brower; *Vice-President*, Dr. Edwin B. Tuteur; *Secretary*, Dr. Wm. T. Belfield; *Directors*, Drs. A. C. Croftan, C. L. Mix, C. E. Paddock, and D. A. K. Steele.

Obituary Notes.—Dr. Felix Formento of New Orleans died on June 2, at the age of seventy years. He was born in New Orleans, but was educated in Italy and was graduated from the University of Turin at the time of the movement for Italian unity. He served as a surgeon in the Sardinian Army and received numerous distinctions from both the Italian and the French Governments. He returned to Louisiana in 1860 and was prominent in organizing the army hospital service in Missouri. He was vice-president of the International Congress of Hygiene at Geneva and was the author of several works on military surgery.

Dr. Robert Augustus Marmion, Medical Director, U.S.N., retired, of Washington, D. C., died of apoplexy on June 8. He was born at Harper's Ferry, Va., in 1844, and entered the navy as assistant surgeon at the age of twenty-four years. From 1894 to 1896 he was a fleet surgeon of the South Atlantic Station. Since his retirement in September, 1906, he had lived in Washington.

Dr. J. H. Hammond of Minneapolis, Minn., was found dead of heart disease on June 1 at the age of sixty years. He had practised in Minneapolis for twenty-five years, but of late had been obliged to give up active work on account of ill health.

Dr. William H. Banks of Kansas City, Mo., died on June 1 after a long illness. He was a graduate of Missouri University in the class of 1891. He had practised in Texas and had served as army surgeon in the Spanish-American war. He was born in Columbia, Mo.

Dr. L. A. Fecteau of Natick, R. I., died on June 2, at the age of fifty years. He was a native of Canada and was a graduate of the New York College of Physicians and Surgeons.

Dr. M. D. Baldridge of Batavia, Ia., died suddenly on June 1 at the age of eighty-two years. He was born in Guernsey county, O., but had lived in Batavia for over fifty years.

Dr. George F. Fuerth of Detroit, Mich., died suddenly of heart disease on June 3 at the age of forty-eight years. He was born in Germany and after receiving his degree from the University of Halle practised for some years in Germany. He came to America in 1893 and since that time had practised in Detroit.

Dr. Alonzo Laurence Stickney of Ashburnham, Mass., died on June 4 of heart disease. He was graduated from Harvard Medical School in the class of 1862 and two years later was made assistant surgeon in the regular army, a position which he held till the close of the Civil War. After practising for a time in Sutton, he removed to Ashburnham in 1871 and had resided there ever since.

Dr. N. K. Whittemore of Elk River, Minn., died on May 31 of nephritis. He was born at Temple, Me., in 1848 and had practised in Elk River thirty-four years. For years he was medical examiner of the Government pension board.

Dr. Valentine Mott Francis, formerly of Newport, died June 7 in West Roxbury, Mass., at the age of seventy-four years. He was born in New York and received his degree at the New York University Medical College in 1859. He practised several years in this city and was a life member of the New York Historical Society. He was connected with the Newport Hospital, and was president of the Newport Medical Society and Newport Historical Society.

Correspondence.

THE MILK SUPPLY OF COPENHAGEN

(From Our Special Correspondent)

Copenhagen, May 21, 1907.

As the question of the milk supply of great cities is now being hotly discussed not only in New York, but in many other parts of the civilized world, it may perhaps be of some interest to your readers to hear a little about the way in which this question is solved in Copenhagen.

The quantity of milk sold in Copenhagen has undergone a very considerable increase during the last half of a century. While in 1840 about 3,000 gallons of milk were sold a day, now more than 40,000 gallons are daily consumed. The daily average a head is estimated at 8/11 pints or about four times the quantity consumed by a Londoner. But this increase has only been possible because, as far back as 1878, the milk trade in Copenhagen was arranged according to the strict demands of hygiene. Perhaps the

most remarkable fact regarding this is that private initiative has proved strong enough to revolutionize the milk supply of a great city like Copenhagen and to place it on the high level it now occupies. The merit of having accomplished this feat undoubtedly appertains to the Köbenhavns Mœlkeforsyning (the Copenhagen Milk Supply Company), founded in 1878 by Mr. G. Busck in company with the late Prof. Panum, Drs. Borch and Engelsted, and other prominent men. The guiding principle of the company has been from the very first "pure milk from healthy cows," and later events have proved how right it was in accepting this rule for its work. By unswerving adherence to this principle it has indirectly forced other similar enterprises, since sprung up, to follow in its wake and has thereby conferred an incalculable benefit on the public.

Thirty years ago the milk supply of Copenhagen was in a deplorable state. The milk was furnished by farmers in the environs of the metropolis, feeding their cows on all sorts of inferior fodder, or by distillers of spirits in the city of Copenhagen itself, who kept cows in order to utilize the residual products of the distillation. If the sanitary state of the cows and the handling of the milk in the country left much to be desired, it will easily be believed that it fared far worse with the milk produced within the walls of Copenhagen, where the cows were never let out into the open air, and where some of them were kept in stables in the second stories of houses in the oldest and most crowded part of the town.

No wonder that the milk was nearly always adulterated and most often tainted and infected. In 1876 of 111 samples of cream only two contained the necessary amount of fat, and 24 had been adulterated by the addition of starch. Of 52 samples of sweet milk only 8 turned out to be what they were sold for.

On this dark background the milk supply of to-day stands out in a very flattering light. But I think that a perusal of the precautions taken by the Köbenhavns Mœlkeforsyning will prove this contention better than many flourishes of rhetoric. All the purveyors to the company engage themselves to feed their cows on forage of only the best quality. All cows used in the production of the so-called "infant's milk" are to be submitted to the tuberculm test at least once a year and must not have shown any reaction. All calves reared by the farmers with a view to milk production are also tested with tuberculin.

Before the return to the stable in the fall the tail, the udder, and the hind quarters of the cows have to be shaved.

Seven veterinary surgeons, appointed and paid by the company, ensure the observance by the farmers of these regulations by visiting the farms fortnightly, and they report once a month to the company on the composition and quantity of the fodder, as on the number and state of health of the cattle. They are also empowered to examine the cows as often as they deem it desirable.

The milking has to be done with the utmost cleanliness. During this operation, therefore, every person of the milking staff must wear a special dress, exclusively reserved for this use; he is provided with water and a towel, so that he can keep his hands clean. The lighting of the stable must be so good as to permit the operator to do his work with the necessary care. Immediately after the milking the milk is strained and cooled down to a temperature of 5° C., usually by means of the Lawrence apparatus. At this temperature it is kept until the transport to the railway station takes place.

The milk is conveyed from the farms to the factory of the company in Copenhagen in milk cans belonging to the company and returned daily to the farmers after having been cleaned and sterilized in Copenhagen. The cans hold, as a rule, eleven gallons. The consigner plumbs the cans sent by him with a seal of lead bearing the name of his farm, so that the contents cannot be tampered with. In the summer the milk vans of the farms must be provided with an awning protecting the cans against the sun during their transport to the railway station, where the milk arrives shortly before the departure of the train. The milk cans are then conveyed to the city in special cold storage vans belonging to the State or to the company. The trains arrive at Copenhagen at ten o'clock in the morning and at the same hour in the evening, carrying about 600 cans with a content of more than 6,000 gallons of milk and cream. The cans are weighed and a sample is taken of the contents of every can. The samples are analyzed and tasted by specially trained women experts. If there is the least thing abnormal about the taste of the milk the contents of the can in question are not sold, but used for the manufacture of butter and cheese. The temperature of the milk is also measured and, if found too elevated, the attention of the farmer concerned is drawn thereto.

After this first examination the milk, cream, etc., is passed through a filter of sterilized sand and gravel, cooled down, and put into cans, which are subsequently sealed by the company. From these cans the milk is later on distributed in the various parts of the town, the cream, however, being sold in stoppered bottles of a liter, half a liter, etc., as is also the so-called "infant's milk," intended for the nourishment of babies. This milk is treated with still greater precautions, the milking, for example, taking place into specially constructed milk pails containing a refrigerating apparatus, whereby the temperature of the milk is already considerably reduced during the milking operation. As experiments have shown, this procedure increases very effectually the period during which the milk keeps sweet and unaltered.

The sale of most of the milk is effectuated from the milk vans of the company circulating throughout all quarters of the town and into some of the suburban districts in the vicinity of Copenhagen. With each van go a driver and from three to five boys. The latter distribute the milk in the houses, fetching and bringing the buyers' vessels, into which the desired quantity is drawn off from the cans. The cream and the infants' milk are sold, as before mentioned, in bottles sealed by the company.

In this way an excellent milk supply is furnished to the population of Copenhagen. Notwithstanding the great care given to the article it has not been necessary to raise the price above what was paid before the company came into existence. A pint of the best quality of cream, warranted to contain twenty-nine per cent. fat, costs fifteen cents, while cream with only fourteen to fifteen per cent. of fat may be had for nine cents a pint. The price of a pint of sweet milk is two and one-half cents.

Only a minimal part of the milk is pasteurized by heating it to 85° C. for twenty minutes. Experiments have shown that milk is undoubtedly deteriorated by heating, the enzymes being destroyed, and that even if pasteurization may do away with certain bacteria, as those of typhoid, scarlet fever, diphtheria, tuberculosis, and lactic acid fermentation the bacteria of putrefaction are able to resist the procedure and multiply rapidly afterwards. Such a nimbus adhered, however, to the name of Pasteur, that some years ago there was a certain amount of uncertainty whether it was not better that all milk offered for sale should be pasteurized. But as far as regards Copenhagen, the contest has now come to a close with an undoubted victory for the non-pasteurization side.

THE MILK SUPPLY OF LONDON.

From an Occasional Correspondent.

LONDON, May 20, 1907.

As in New York, so in London, the question of the milk supply is coming to be a matter of interest not only to medical men and sanitarians, but to the general public as well. For long the fact has been notorious that the conditions governing the milk supply of London are defective in very many respects. A certain number of ardent and strenuous sanitary reformers, among whom were some of the metropolitan health officers, have striven to arouse the inhabitants of London to a sense of the dangers to health involved in a more or less polluted milk supply. Up to quite a recent date such efforts have been in vain. However, within the past few months some of the lay journals of London have taken the matter up, and the importance of pure milk is now generally attracting the attention it deserves.

The *Lancet* during the past year has made somewhat of a feature of the milk question, and especially so far as London is concerned. Some six months ago the manner in which milk was retailed in small provision shops in London was dealt with in a fairly exhaustive way. It was pointed out that 80 per cent. of the shops in which milk was sold were small provision shops, and it was also shown that such shops were, as a rule, dirty and unsanitary, and that the sale of milk therefrom was a distinct menace to the public health, and a fruitful cause of infantile sickness and mortality. Since the publication of these articles the lay journals of London have devoted a considerable portion of their space to a consideration of the milk question, and many schemes have been suggested calculated to ameliorate existing conditions. In the articles above mentioned, the methods of railroad transport are discussed, and many interesting facts in connection with this part of the subject are treated in detail.

The last of this series of articles is of local interest, as in it is made a comparison between the milk supply of

London and that of New York. The dwellers in New York consume per capita far more milk than do the citizens of London. London's daily consumption of milk per capita is about 0.20 pint, while that of New York, according to Dr. G. M. Whitaker, is considerably more than half a pint. Consequently, the quantity of milk conveyed by rail into New York exceeds the amount carried into London by similar means of transport. The mode in which the New York milk is transported by rail is compared with the methods of rail transport which prevail in the London districts, the comparison being greatly in favor of the American methods. For instance, no milk is pasteurized or sterilized before being put on the trains bound for London, nor is any milk conveyed by rail in bottles. Indeed, it appears that the custom of bottling milk is almost unknown in London. Again the vans used by the railroads for conveying milk to New York are, generally speaking, much superior to those used to transport milk by rail to London. Although some of the railroad companies which are large transporters of milk to the British metropolis supply specially built and suitable vans, on the other hand, a large proportion of the milk which is carried into London by rail comes in vans badly ventilated, and in many respects ill-adapted for the purpose, while a not inconsiderable quantity of the London milk is brought in on the guards' vans of passenger trains, in company with a heterogenous mass of material, some of which should not be in close proximity to a product so susceptible to pollution as is milk.

The writer of the *Lancet* article expresses the opinion that what can be done towards insuring a fairly pure milk supply in the State of New York could be done in England. At any rate, it is stated emphatically that milk cans, before they leave the dairy farms from which they are sent, should be locked or sealed, and that the number of special milk trains should be increased. The suggestion is also advanced that refrigerating methods should be brought into practice in England by the railroad companies when conveying milk. Finally, the advice is given that the London County Council should look into the American system of milk stations on the railroads, where milk is received from the farmer of the locality, kept in a proper manner, handled in a proper manner, and placed in a proper manner upon the special trains. It should be flattering to the New Yorker's self esteem that London should wish to take example from this city in regard to modes of milk control. The contributor to the *Lancet* is well acquainted with the conditions governing the milk supply of both New York and London, and he states that the milk supply of New York is better managed in nearly every respect than is that of London.

The British medical and sanitary authorities are, as a rule, opposed to the pasteurization and sterilization of milk, believing that a pure and nourishing milk can be better obtained by paying close attention to the sources of supply, means of transport, and sanitary measures in general than by relying on pasteurization or sterilization. Until such methods have been brought into general use, it would appear to the unprejudiced observer that pasteurization or sterilization, although undoubtedly of the nature of makeshifts, are better than serving milk which is dirty or germ laden. The hopeful feature of the situation is that in both New York and London, and in fact in all large cities of America and of Great Britain, the public conscience is becoming aroused to a keener sense of the menace to life, and to child life in particular, of a polluted milk supply.

OUR LONDON LETTER.

From Our Special Correspondent.

THE ALCOHOLIC STATEMENT—FRACTURES OF ODONTOID PROCESS—HEALED ULCER AFTER GASTROENTEROSTOMY—DURATION OF WIDAL'S REACTION—PRECOCIOUS OBESITY—VIVISECTION, REPORT, AND DEBATE—ITEMS—OBITUARY, SIR JOSEPH FAYRER, DR. GROVES, J.P.

LONDON, May 24, 1907.

THE seed sown by the statement on alcohol, about which I wrote to you last month, continues to produce an abundant crop, but I think the nature of the harvest must be a source of regret. The sixteen signatories, articles, correspondence, and advertisements in the newspapers, of course, were to be expected as the first fruits. Now follow on circulars of all shapes, containing assertions of varying degrees of credibility as to the views of the medical faculty, backed up by facsimiles of a page of the *Lancet* and similar reproductions, all of course intended to impress the recipients with the value of alcohol, whether as wines, beers, or spirits. I hope the sixteen gentlemen who signed the joint statement get even a larger number of these circulars than have encumbered my letter box, that they may be aware of the extent to which their names are being advertised by "the trade" as the leaders of medical opinion. They need not then have to visit taverns, where their statement is exposed, to convince themselves of the use to which it is being put and to open their eyes to what they must have been blind not to see when they signed their testimonial. They are "all—all honorable men," and the wonder is that the perspicacity with which it is natural to credit them did not save them from committing themselves to such a document. If a few general practitioners had done so what would have been said? It is now generally admitted that a person "in the interests of trade," not a doctor, originated the scheme, and was successful in obtaining the sixteen signatures. The exact manner of his procedure is not worth inquiring into.

Mr. E. M. Corner has devoted great attention to fractures of the odontoid process of the axis, and examined the specimens in all the museums of these islands. From his study of these and the records of all the histories obtainable of fatal and non-fatal cases he has contributed a paper to the Royal Medico-Chirurgical Society. He says there is no reason why a patient who has sustained such a fracture should not recover without any spinal symptoms; in fact, with nothing more than a painful, stiff neck. In such a case there would seem to be more danger from overlooking the fracture than from the injury itself. That was the happy side of the clinical picture; the other was instant death if the injury were overlooked. In fact, these fractures fell into line with what he has shown to be the case in other fractures of the upper cervical spine, viz.: that the patients may suffer only a painful stiff neck. He, therefore, concluded that all injuries of the neck should be skiagraphed and examined by a skilled radiographer, for it is very easy for an unskilled observer to overlook the injury. The skiagraph should be taken through the open mouth.

Mr. Warrington Howard remarked on the importance of recognizing the possible consequences of such an injury, for a patient might fracture his odontoid process and, feeling no more discomfort than a few days' stiffness of the neck, might go about his ordinary work for months and then die suddenly. Two such cases had occurred. He also referred to a case of extensive disease of the odontoid process without any symptoms except wryneck. The patient was a child and recovered, but tuberculous meningitis came on, and at the post mortem the process was represented by a mere spicule of bone. The moral was to have a skiagraph taken, and preferably through the mouth.

Dr. A. J. Whiting remarked on the contrast between these cases, whether there was instant death or practical immunity of the spine, at any rate for a time, and cases of fracture—dislocation of the lower cervical spine, which usually produced complete paralysis of all four limbs and of the sphincters, though life of a sort continued for months, so that the patients with the upper injury seemed better off. Probably the transverse ligament of the atlas protected the upper vital part of the cord. The absence of symptoms was no reason why sudden death should not supervene at any time.

At the Clinical Society, on Friday, Mr. Sherren gave an account of a case of gastroenterostomy for chronic ulcer, in which healing was verified at the post mortem twenty-eight months after operation, the patient having at that date become melancholic and cut his throat. The anterior operation with no loop was done, the posterior being impracticable on account of adhesions. There was a large ulcer on the lesser curvature. At the post mortem the operation opening admitted two fingers and the pylorus was patent. Microscopical examination showed the healing was complete. Mr. Sherren commented on the good results of gastroenterostomy even when the ulcer was distant from the pylorus, so that excision was not the operation of choice even in such a case.

Mr. Clutton, president, asked if Mayo's method of fixing the jejunum so as to make it lie from left to right had been adopted. He had used it for the past eighteen months. Mr. Sherren replied in the negative; he had tried the plan in some cases, but had given it up.

Drs. H. French and G. Louisson read a paper on the time that Widal's reaction persists after typhoid. They had traced 135 patients who, while in hospital, had given the reaction—the standard being clumping within half an hour in a dilution of 1 in 200. The test was repeated after the illness at periods from two months to ten years. They obtained in 7.5 per cent. complete reaction, in 22.5 per cent. incomplete, and in 70 per cent. none. The interval after the illness made little difference, and it almost seemed as if when cases persisted they did so indefinitely—several lasted eight years. The president said he had found the bacilli in some complications three years after the fever,

and Dr. French replied that he had not examined for bacilluria. Perhaps the persistence of bacilli and agglutinative power were correlated.

A paper on precocious obesity and hirsuties with hypernephroma, by Drs. Guthrie and Emery, described the case of a boy at four and three-fourth years, thirty-six inches high, weighing over four stone. After death, from pulmonary tuberculosis, the hypernephroma was found on the left side. The second case was a girl of three and a half years, thirty inches high, weighing thirty-seven pounds. In both cases the pulse was intermittent and the intelligence good. Other cases were mentioned by several speakers; some with great muscular development (the informal Hercules type), others only obesity and hirsuties. Hyperphroma was not always present.

The Vivisection Commission has issued a second report containing the evidence taken in February and March. Among the witnesses examined were Mr. Power, C.B., Chief Medical Officer of the local Government Board; Professor Cushing, F.R.S., Sir Douglas Powell, Bart., President R.C.P., and Dr. F. Taylor. These represented sane medical opinion. In opposition, Miss Kenealy and Mr. Graham offered the usual prejudices of the antis. On Tuesday the antis achieved a sort of success by having induced Professor Halliburton to condescend to engage in a public debate with one of their lecturers. Notices of the matter were, of course, secured in the newspapers the next day, and those who think guinea-pigs, rats, and other creatures ought not to be sacrificed in the interests of humanity have started a few more "horrors." The ladies who assembled to support their champion showed what they were by shouting "brute!" when the name of Lord Lister was mentioned. Such ignorance and prejudice will scarcely be enlightened by the facts put forward by Dr. Halliburton or any amount of scientific reasoning.

Cases of cerebrospinal meningitis continue to occur in various localities. One was reported last week in Nottingham, which had not previously been invaded. The origin of the infection has not been traced. Manchester, Wrexham and Pilsby report cases, and eighteen deaths were registered in Scotland during the week.

Dr. E. C. Seaton, M.O.H. for Surrey, in his annual report considers the causation of typhoid in the country in 1895-1906, and concludes that polluted and infected foods are more frequently the cause than water supply. He is doubtful whether 10 per cent. of the cases can be due to water infection.

The Edalji case has at length been decided. Acting on the recommendation of the committee he appointed to consider all the circumstances, the Home Secretary has recommended His Majesty to grant a free pardon, as the committee considered the prisoner had contributed by his own foolish letters toward his conviction. The Home Secretary decides that it is not a case for compensation.

Sir Joseph Fayrer, Bart., K.C.S.I., etc., died on Tuesday, full of years and full of honors. He had been ailing for some time, but his indisposition took a grave turn ten days ago and he passed away, in his eighty-third year. He began medical study in the Bermuda Naval Hospital and continued in various schools, British and Continental. In 1847 he took M.R.C.S.; the Fellowship in 1878; in the meantime having taken the Edinburgh M.D. and Fellowship and then elected F.R.C.P. Lond. At the age of 23 he was assistant surgeon on H.M. ship the *Victory*, but two years later he transferred from the naval to the army service, and after a year in that to H.E.I.S. His Indian career thus begun in 1850 and continued to 1874, when he returned to England as Surgeon-General and was made President of the Indian Medical Board. From this time he had a position as a leading consultant in London until 1904, when he retired to Falmouth, where he died. He filled, as it were, three careers, viz.: military surgeon, university professor in Calcutta and administrator and consultant in London. As a military surgeon he saw field service in 1847 as a volunteer in the hospitals during the sieges of Rome and Palermo, three years later in Burma and the capture of Rangoon. He was next appointed to Lucknow, and was senior medical officer there during the siege. Later on he was at Cawnpore. For his services in the mutiny he was promoted and received the thanks of the Governor-General in Council. In 1858 he came home on sick leave, and on returning to India was appointed professor of surgery at the University of Calcutta, of which he afterward became president of the medical faculty and served on the senate and in various other positions in the university school and the hospitals. He accompanied the Duke of Edinburgh during his tour, and later went to India once more with the King, then Prince of Wales. He had been appointed Honorary Physician to the late Queen Victoria, and the King, on his ascension to the throne, made him Physician Extraordinary. His scientific work had secured him the Fellowship of the Royal Society and that of many other medical and scientific organizations, the presidency of several being offered him. Edinburgh and St. Andrew's universities conferred their honorary LL.D. His son Joseph, who succeeds to the Baronetcy, is Lieutenant-Colonel in the R.A.M.C. He leaves three other sons and a daughter. His writings were numerous on many departments of Indian medicine, surgery, toxicology, and climates. His "Thanatophobia of India" appeared in 1881, and must be known to you, as must many of his contributions to tropical diseases. In 1897 he wrote the life of "Sir Ronald Martin," and in 1900 "Recollections of My Life."

Dr. Joseph Groves, J.P., Medical Officer of Health for the Isle of Wight, Rural District, died on Tuesday, in his sixty-eighth year. He was a Kings College student and graduated at the London University, B.A., 1859; M.B., 1867. He also took the L.R.C.P. the next year. In the 1866 epidemic of cholera he acted as M.O.H. in the Second District. For twenty years he had held his office in the Isle of Wight. He wrote an account of that district as a health resort, and also a work on the "Treatment of Insanity." He had been President of the Society of Medical Officers of Health.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

DISAPPEARANCE OF CHOLERA—SEWERS AS BREEDING PLACES FOR MOSQUITOS—TYPHOID FEVER—BERIBERI—RELAXATION OF QUARANTINE RESTRICTIONS—PERSONAL.

MANILA, April 15, 1907.

A CAREFUL review of the available data on hand at the present time would seem to indicate that cholera has entirely disappeared from the Philippine Islands. A few scattered cases are being reported from northern Samar, the province of Capiz, and the province of Occidental Negros. The total number of cases and deaths, however, does not amount to more than approximately five cases per week. The Bureau of Health has made repeated efforts to obtain specimens for laboratory investigations from such cases, but generally only one case occurs in a locality, and the places are so remote that before a person competent to make a microscopical examination can arrive on the scene, the person is either dead or has recovered. From the fewness of the cases and the entire lack of any spread of the disease, it would seem that the diagnoses of cholera are extremely problematical, especially in view of the fact that the various forms of poisonings of the ptomaine order, caused by eating decomposed fish and others foods in which virulent poisons are frequently encountered, are so common, it would seem that such cases are not cholera, but are due to the poisons mentioned above.

The extensive excavations which are being made at the present time in the city of Manila for the purpose of installing a new sewer system have thrown considerable light upon the failures of the campaigns conducted by the Bureau of Health in the past against mosquitos. At certain seasons of the year, notably in the dry season, it has been practically impossible to free even such a well paved section of the city as the walled city from mosquitos. The conclusion was almost reached that unless the walled city could be freed from mosquitos with comparatively small outlay, that it would be practically useless to attempt a general mosquito eradicating plan in the islands. Owing to the failure of the repeated efforts of the Bureau of Health, the question of mosquito extermination outside of Manila has not received much attention during the past year. It seems now that this matter is satisfactorily explained by the slow velocity of the water in the storm sewers in the walled city. In the rainy season, contrary to expectations, the walled city is almost entirely free from mosquitos. This is explained by the fact that large quantities of water pass through the sewers in this time of the year, and the velocity of the current is such that mosquitos are unable to breed; whereas, in the dry season, no water entering the sewer, the current becomes more and more sluggish, until finally the flow ceases altogether and only a series of pools remain, which are due to the inequality of the levels of the the drain. Such pools offer excellent breeding grounds for mosquitos; in fact, large numbers of wigglers have been found in the sewers. Many of the present storm sewers will be relaid with better levels, and it is probable that some relief may be expected in the future. The new sewer plans, however, do not contemplate any extensive changes in the storm water sewers, the new system being only for house drainage.

Typhoid fever seems to be obtaining a firmer foothold in the Philippines than has heretofore been the case. As the changes which ordinarily accompany an introduction of increased civilization are being more and more introduced in these islands, it is becoming more apparent that this disease is constantly affecting more persons. At the present time the construction of the new railroads in the islands is responsible for the gradual introduction of typhoid in many places at which it has not been encountered heretofore. Fortunately, so far, the disease has apparently been due to direct importation, it having occurred almost entirely among Americans and Japanese who have only recently come to the country, and either arrive in the incubation period or have ingested infected foods obtained in the countries from which these new arrivals come. At the present time, at the railroad hospital at Cebú, there are three cases of typhoid, and about twenty-five cases have occurred in Manila during the past month. It seems probable that the reasons why typhoid has not spread more heretofore in the Philippines are not so much because of the tropical climate, but because the ordinary vehicles by which the disease spreads have not been present. For instance, it is only a few years since milk of local production has been used in the islands; there were practically no general water distributing systems or reservoirs; in the absence of sewer systems it was practically impossible to infect places in which oysters and other shellfish grow; and the comparative absence of flies during the greater portion of the year are all explanations as to why there has not been a more general spread of the disease heretofore.

Beriberi, which a few years ago seemed to defy all efforts toward its eradication among persons connected with the light house service, and more particularly among employees who are engaged at isolated houses, seems now to be thoroughly eradicated. The measures taken consisted in adding more meat to the ration issued, and insisting upon making of rigid rules with regard to employees eating with knives, forks, and spoons instead of with their fingers. Which of these two measures is responsible for the disappearance of the disease is not actually known, but from the favorable experience at the Culion Leper Colony, where a serious outbreak occurred, and which was not arrested until an increased proportion of meat was added to the diet, would seem to indicate that in spite of the assertions of laboratory workers that the cause is not to be found in the diet, that this form of treatment is an important element in its eradication.

Owing to the very favorable condition of public health in the islands, the quarantine restrictions are to be still further reduced. Hereafter all vessels engaged in inter-island trade will not be required to obtain bills of health, beginning May 1, 1907. If the present favorable conditions with regard to public health continue, it is understood that still further restrictions will be removed in the future.

There has been no case of plague reported in the Philippines since April, 1906.

Dr. George D. Fairbanks, who has been connected with the Bureau of Health since 1903, and who, during the past two years has been house surgeon at the Civil Hospital, has resigned his position and will return to his former home in Texas.

Progress of Medical Science.

New York Medical Journal, June 1, 1907

Eyestrain in School Children.—W. S. Cornell has made a study of this subject as concerns school children in Philadelphia. In 1,156 children he found normal vision in 66 per cent. The test consisted simply in distance vision with the Sneller types with the best natural light obtainable. Of the 34 per cent. of defectives about 6 per cent. had only one-half normal vision or less. About 70 per cent. of the defectives were not wearing glasses. This state of affairs is due, he thinks, first, to the medical profession who ignore the fact that the vast majority of reflex headaches in children are due to eyestrain, and who ignore the round-shouldered delicate children, making no systematic effort to find out the cause of their condition; second, to the teaching profession whose knowledge of anatomy and physiology is unpractical. They spend much time in telling the children about the effects of alcohol on the stomach and liver and almost no time at all in looking out for departures from normal of the needful sense-functions, and third, to the parents who assume an attitude of indifference and resentment. Cornell finds that girls suffer more than boys from eyestrain and that there is a direct relation between poor vision and scholarship.

Pyocyaneous Ulcer of the Cornea.—P. Fridenberg reports the case of a girl of sixteen years who had been staying at the seashore and who, after an automobile ride, complained of irritation and some pain in the right eye. An ulcer appeared the next day, which, in spite of all treatment, completely destroyed the cornea. Scrapings from the cornea and the contents of the conjunctival sac revealed a pure culture of the *Bacillus pyocyaneus*. The interesting features of the case are first the lack of any determinable injury. Pyocyaneous infection is generally traumatic in origin, the injury having been inflicted with a soiled weapon or with dirt. One would hardly expect to find the *Bacillus pyocyaneus* far removed from crowded habitations, out doors at the seashore. The bacillus was found in pure culture, and the matter from both ulcer and conjunctival sac was otherwise sterile. In spite of this, there was nothing characteristic in the local conditions. The ulcerated area was a dirty gray. There was no green discoloration whatever which might have led us to suspect the nature of the pathogenic organism. The course of the ulceration was rapid and malignant. There was no perforation; the cornea became entirely shrunken and opaque and then gave way to intraocular pressure. After the development of the ulcer there was no pain. The patient did not feel the cauterization with pure tincture of iodine, ordinarily quite painful, and had little or no discomfort, even from the application of the actual cautery.

Morphological Diagnosis of Pathogenic Protozoa.—J. Ewing notes that the great point of disagreement among zoologists is not so much with reference to the existence of a certain protozoon, but with reference to the right of certain intracellular bodies to be included in the cycle and the relations of one set of forms to another. This matter has come up especially in the search for protozoa in cancer, rabies, and the exanthemata. The mere recognition of protozoa may be an easy matter, but the identification of cellular degenerative products is most difficult. Ewing's object is to urge that serious dangers are inherent in the mere morphological diagnosis of protozoa in diseased human tissues, and he declares that the collateral evidence must be favorable before new and very peculiar protozoa can be established as the cause of disease. The great danger surrounding the morphological diagnosis of protozoa in human tissues lies in the fact that in many diseases, some of bacterial origin, intracellular processes give rise to structures closely resembling protozoa. This fact is then presented by the author with reference to variola, scarlatina, measles, rabies, glanders, and cancer. He says that collateral evidence is almost conclusive against the protozoan origin of malignant neoplasms since no parasitic invasion can explain the autonomy and organoid character of many tumors and there is no parallel protozoan disease anywhere in the animal or vegetable kingdom. The present state of our knowledge points to the conclusion that the virus of variola and rabies and possibly of measles is intimately connected with the tissue proteids which form the bulk of the specific cell inclusions of these diseases, but is itself of a nature not yet understood and not yet paralleled among known protozoa.

Journal of the American Medical Association, June 8, 1907.

Prostatitis.—E. G. Ballenger bases his paper largely on the facts observed or confirmed by the study of over one hundred prostates. More than half of these were chronically inflamed and nearly one-third of them were normal. He devotes special attention to the chronic inflammations, in nearly 80 per cent. of which the patients gave a history of a previous gonorrhea. In one of his patients were found large numbers of colon-like bacillus in the prostatic secretion, but no gonococci. The average age of the patients was 30, the ages varying between 19 and 50 years. Ballenger's experience leads him to believe that in the majority of patients chronic prostatitis and seminal vesiculitis are insidious, the patient being unaware of the fact that his prostate is involved. He concludes his article as follows: "The prostate gland is without doubt the cause of the majority of obscure urinary and sexual symptoms, and should always be examined where there is any uncertainty as to their origin. Among the factors that tend to perpetuate a chronic or recurrent gonorrhea a nidus of infection or irritation in the prostate is the most frequent cause. It is in this variety of prostatic inflammation that the largest number of errors are made in the diagnosis. Palpation, pus and proteid are the three things to rely on in reaching a conclusion as to the condition of the prostate. By palpation through the rectum the gland, if diseased, may be found enlarged, nodular, irregular, boggy, or apparently normal. Pus in the secretion expressed from the meatus or found in the urine or fluid voided after massage, when

the urethra and bladder are excluded as possible sources, is positive proof that the prostate is inflamed. Proteid in the fluid passed after massage is equally as reliable as pus in the diagnosis of prostatitis.

The Diagnosis of Pyelonephritis.—E. Beer publishes the histories of two cases which seem to point to a new diagnostic sign of the involvement of the kidney parenchyma. In the first case the patient discharged methylene blue stained pus in the urine at intervals up to two and three-fourths years after the last administration of the drug. The second patient had pyelonephritis (verified by nephrotomy), and had recurrent discharges of methylene blue stained pus over a month after the last administration of the drug. He is of the opinion that the pigment is fixed in the pus in great part, if not wholly, in the leuco form, and that its presence in the abscesses is the result of the excretion of the renal epithelial cells. He produced a pyelonephritis in a dog and then for several days administered methylene blue. The kidney was removed two weeks later and, after treatment with oxidizing agents, showed multiple bluish-gray pus foci throughout its substance. He summarizes his conclusions derived from the facts so far as follows: 1. There is no differential diagnostic sign between simple pyelitis and pyelonephritis. 2. Pyuria from the upper urinary tract may be due to either of these conditions. 3. By the use of the above described methylene blue test it would seem that a differential diagnosis may be made. 4. Methylene blue is deposited in the parenchymatous abscesses and may be stored in these for years. 5. A late discharge of methylene blue, bound to the pus, is indicative of the rupture of such parenchymatous abscesses into the pelvis of the kidney and is consequently diagnostic of pyelonephritis.

Meningococcus Septicemia.—C. E. Simon reports a case of meningococcus infection in which the organism was found in the blood, the eighth on record and the first in which it could be demonstrated directly in the blood smear taken from the ear. There was a very high grade of leucocytosis—50,000 as a conservative estimate, and an estimated ratio of 7,380,000 per cubic centimeter of blood. A noteworthy feature was that the large mononuclears were engaged in phagocytosis almost as much as the polynuclears, and their increase, both actual and relative, was especially worthy of note. In his former differential counts in meningococcus meningitis cases there was always a marked polynucleosis with low mononuclear values. The previously published cases in which the meningococcus has been found in the blood are reviewed, and Simon hints that this is possibly explained by the rarity of blood examinations that have probably been made, and advises, since negative findings in the meningeal fluid are not unusual, that the blood be also examined in all doubtful cases. Culture methods with bouillon, blood serum, hydrocele agar, and blood agar should be employed. He hardly thinks his own method with blood smears as likely to be successful.

The Lancet, May 25, 1907.

Hypopharyngoscopy.—P. T. Hald enumerates the various divisions of the pharynx and points to the matter of inspecting its laryngeal portion and especially that portion behind the lamina of the cricoid cartilage. Various methods of passing instruments into this section have been in vogue for a long time, but all have their disadvantages and even dangers. The author has therefore been led to follow the plan devised by von Eicken of Freiburg. The patient's fauces, root of the tongue, and larynx are cocainized, he sits in a high chair while the examiner kneels before him. Then a stout laryngeal probe is introduced through the rima into the subglotic space and the larynx is pulled forward and upward, the proximal straight part of the probe resting against the upper teeth, so that it acts as a lever. In the mirror it may then be observed that the larynx is drawn from one and a half to two centimeters away from the posterior pharyngeal wall, the two pyriform recesses joining in a common cavity. Often a facetting of the lamina of the cricoid is visible through the mucosa, laterally to a median prominence. Occasionally it is observed how part of the mucosa loosely extended over the lamina of the cricoid cartilage and its muscles becomes drawn out to a fold stretching backwards when the larynx is lifted away from the posterior pharyngeal wall; when the pull becomes stronger the fold disengages itself from the posterior wall of the pharynx and sinks back to a level with the rest of the mucosa on the lamina of the cricoid. Occasionally the author has been able to see the gullet open up during respiration and has been able to inspect its upper portion.

Two Cases of Pulmonary Regurgitation.—Detailed clinical histories of the cases with post-mortem findings are given by D. B. Lees and V. Z. Cope. Case one was one of infective endocarditis affecting only the pulmonary valves and occurring in a single woman of twenty-four years. Case two was that of a man of thirty-nine years with an aortic aneurysm which ruptured into the pulmonary artery and caused regurgitation. The authors make an analytical study of ninety-nine recorded cases. In fourteen of these the incompetency was due to an aortic aneurysm rupturing into the pulmonary artery and causing the valves to adhere to the walls of the artery. The lesion is said not to be very uncommon. The diagnosis was made difficult by the accompanying aortic regurgitation. The presence of an aneurysm was regarded as certain, but the extraordinary nature of the sounds, both as to intensity and continuity, made those who saw the case confident that there was something in addition to aortic incompetence and this lesion. The suggestion was discussed as to whether the aneurysm had broken through into the pulmonary artery, but no certain conclusion was arrived at on this point. During life the pulmonary incompetence was not differentiated from the accompanying aortic regurgitation. In this case also there was a distinct history of a sudden muscular overexertion. The patient was a heavy smoker, but the authors are not prepared to say how much of a factor this habit was in this special case. They note that infective endocarditis of the pulmonary valve is most frequently of gonorrheal origin, though in their own case (case one) this fact could not be demonstrated.

Acute and Chronic Appendicular Pain: Medical and Surgical Treatment.—A general consideration of this subject is made by Saint-René Bonnet. He gives the histories of (1) a typical case of chronic appendicitis without mucomembranous enterocolitis cured by medical treatment alone, (2) a case of mucomembranous colitis in the course of which painful secondary reflexes arising from the appendix quite disabled the patient and called for surgical intervention, and (3) a case of chronic mucomembranous enterocolitis in the course of which acute appendicular pain, due to a supervening cause—a large appendicular calculus—necessitated operation, which was successful. The author calls attention to the following causes which have induced medical men to restrict surgical treatment: (1) in the course of operations, the appendix has often been found to be quite normal or only slightly involved. It seems, therefore, quite difficult to consider it the cause of the trouble which had necessitated the operation. (2) Sometimes when the appendix, whether healthy or not, has been removed, chronic pain persists just as before; even fresh attacks similar to that of relapsing appendicitis occurs. (3) In spite of the general tendency to resort to surgical treatment, there are many cases where the symptoms seem to point to a fatal termination, but in which, however, recovery is obtained without surgical interference. (4) These strictly medical cures assume greater importance when the results of operating during the acute period of the affection, with all the risks it entails become better known. These facts at first puzzled both physicians and surgeons, but most of them were explained when careful studies of the morbid syndrome, now so frequently met with and which is called mucomembranous enterocolitis, were made, the intestinal symptoms of which may be thus tabulated. The author states that in well-characterized mucomembranous enterocolitis we find chronic constipation with or without occasional attacks of diarrhea; diarrhea, which may become chronic, and is observed in the place of chronic constipation more than is generally supposed; spasmodic contractions of the large bowel which alternate or coexist with dilatation of one or more of its portions; persistent pain which becomes intense during the acute periods of the affection; passage of mucus and casts with occasional intestinal hemorrhages, and in some cases abundant evacuations of intestinal gravel. He adds that there are two important signs which must always be kept in mind, for they are practically never absent. Firstly, when paroxysms of mucomembranous enterocolitis are localized or predominate in the right iliac fossa at, and around, McBurney's point, they present symptoms which may resemble exactly those of an acute attack of appendicitis, and when there are no acute paroxysms of the disease there may be persistent pain which simulates that of chronic appendicitis. As in true appendicitis, the pain, whether acute or chronic, is of a shooting, stabbing, or colicky character, or is replaced by a more or less marked sensitiveness in the right iliac region. This pain is increased by movement. Secondly, experience teaches that when in the course of supposed acute appendicitis or of chronic appendicular pain, mucous casts are passed in the stools the physician is bound to feel entirely reassured as to the nature of the trouble, and is enabled to give a good prognosis.

British Medical Journal, May 25, 1907.

Sudden Death at the Climacteric.—E. Pratt reports the case of a woman of forty-five years to whom he was hastily summoned, but who was found dead on his arrival. Inquiry developed the fact that inside of two hours she had "felt queer," vomited, was faint, and one hour or so later the hands suddenly clenched, the face grew dusky, nails were discolored, she felt very cold, became unconscious, gave three blowing expirations, and then seemed as if dead. For the previous year she had suffered from occasional severe headache; for the last six months she had been subject to "fainting turns," with frequent retching, such attacks lasting half an hour to an hour, when she would be all right again; the attacks always occurred early in the morning. The frequent flushes and cold sweats of the climacteric were experienced, and irregular catamenia, of late every two weeks or so, not much loss, but extending over a longer period than normally. The last menstrual period was a week previous to the fatal attack. She was a healthy, cheerful, bright, and happy woman. She had borne seven children, five now living. Her father died suddenly at the age of sixty. The autopsy revealed nothing, all organs and structures being normal, with no signs of internal hemorrhage or of poisoning. The author notes that attacks similar to those just mentioned are common enough at the climacteric, but he believes that such an attack originating in the genitalia might so act reflexly that the balance would turn toward death instead of loss and recovery. He gave, at the inquest, as the cause of death "asthenic syncope," and has been unable to find any record of an exactly similar case.

Tubercle and Erysipelas.—C. B. Whitehead reports the case of a three-year-old child with enlargement of the neck glands. The group chiefly affected was the posterior cervical and there was no difficulty in diagnosing an ordinary tuberculous adenitis. There was no improvement after a month's medicinal treatment, together with the application of a liniment containing potassium iodide; in fact, one of the glands near the surface seemed to be softening rapidly, so that he decided to remove them. The operation, however, had to be postponed, as the child suddenly developed an attack of facial erysipelas, which started just over the most prominent part of the glandular swelling; possibly the micrococcus gained entrance here through some abrasion caused by the rubbing. The erysipelas pursued a favorable course; it spread all over the face, the only bad symptom being albuminuria, which did not last long. The interesting point was that during the attack the enlarged glands, which formed a very prominent tumor, entirely disappeared.

Unnoticed Lateral Curvature.—W. J. Somerville says that he has been surprised to find how seldom deformities of the back are recognized by the family physician unless his attention is called to the condition by the patient's mother. Frequently, he says, he is consulted by a mother in regard to some faulty attitude on the part of her daughter or son, on account of "one shoulder drooping," "both shoulder blades prominent," "one hip sticking out," etc. On examination a lateral curvature of the spine is easily discovered. Too frequently the deformity is so marked that a cure is impossible, the bodies of the vertebræ having become altered in shape. Had such a child been properly treated, say at eight or nine years of age, when the slight deformity was due to simple muscular weakness, the gross and permanent deformity might have been avoided. Again, he is occasionally told by mothers that when the doctor had been spoken to on the subject his reply was that the child would "grow out of it." Whoever, he asks, saw a child "grow out" of a lateral curvature without careful and appropriate treatment? As an alternative a poroplastic jacket is frequently suggested. But this, by freeing the spinal muscles from responsibility and movement, simply encourages the deformity to become more marked. He would, therefore, venture to urge the profession to be on the lookout for "a drooping shoulder," chiefly the right, and when this is observed, to ask permission of the mother to expose and examine the child's back. In nine cases out of ten it will be found that a lateral curvature exists. Suitable medical gymnastics under medical supervision, and not merely under the care of an unqualified man or woman, will, as a rule, cure early cases, or will, at any rate, either lessen the deformity or deprive it of its more obvious and conspicuous proportions.

The Microorganism Isolated from Acute Rheumatism.—This question is reviewed by E. W. A. Walker, who dwells particularly on the relation of this particular streptococcus to the other members of the streptococcus group. His own studies refer particularly to a group of fifteen rheumatic cases from ten of which a constant streptococcus was obtained in pure culture. In two cases the original cultures were contaminated with *Staphylococcus albus* from the skin and in the other three cases, which were post-mortem specimens, with a motile bacillus judged to be the *Bacterium coli*, but this fact was not worked out in detail. In eight of the cases the organism was isolated during life, while in the remaining seven it was found in the heart's blood post mortem. Experiments on animals, details of which are given, produced the morbid lesions of rheumatism. The differences in culture, behavior, etc., from other streptococci are given, and it is worthy of note that while this special germ produced invariably fever and acute arthritis, and occasionally in addition peri- or endocarditis, or both, and in large doses a fatal result, it never produced pyemia or pyemic abscesses as is frequently the case with ordinary streptococci. Summarizing then his own results and those of other observers, he notes that this organism has been isolated in pure culture from subjects of the disease, both during life and on post-mortem examination, by a succession of observers on a relatively large number of occasions; that it has been seen microscopically in rheumatic lesions—in the synovial membrane of joints in the cardiac valves, and in the meninges in cases of acute rheumatic chorea; and that it was both seen in a rheumatic nodule, and cultivated from it in pure culture by Paine and Poynton. On injection into animals it produces morbid lesions similar to those of acute rheumatism. It has the appearances and general cultural characters of a streptococcus. But it produces in considerable amount an acid, formic acid, which is not known to be produced in like amount by streptococci from any other source. And this appears to afford a specific distinction. Walker notes some objections to the acceptance of the causal theory of this particular organism. It has not been found by all observers. It has been suggested that the organism was either a contamination or a terminal or agonal infection or a secondary infection, but against the latter theory is the fact that the organism has been isolated during life. It has been further suggested that the organism was the occasion of a secondary infection superposed on the rheumatism. This view, says the author, is conditioned on one's conception of what true rheumatism consists in. In general, he regards the case in favor of the organism as not yet absolutely proven.

Berliner klinische Wochenschrift, May 20, 1907.

Oxygen Baths.—Franze and Pohlmann report the results obtained by the use of oxygen baths prepared according to the method suggested by Sarason. To prepare such a bath 300 g. of sodium biborate is dumped into the tub containing the water at the desired temperature. A small quantity of borate of manganese, as catalyzing agent, is then sprinkled over the surface of the water. The formation of oxygen begins in from one to three minutes and lasts for about a quarter of an hour. Shortly after entering the tub the surface of the bather is covered with extremely small bubbles of oxygen, and black flakes of manganese peroxide are precipitated and settle on the skin, but these are readily wiped off. The authors used the baths for six patients, who received thirty-five treatments. Two of the patients were in normal health, three suffered from heart lesions of various sorts, and one suffered from neurasthenia. In all cases there was a reduction of blood pressure and of the pulse rate. Four additional baths were given to two patients suffering from arteriosclerosis, but were not well borne, the already high blood pressure was much elevated, and dyspnea, palpitation, and subjective discomfort compelled abandonment of the treatment. The authors consider that the oxygen bath is not a suitable substitute for the carbon dioxide bath, but that it is likely to be of value in the treatment of neurasthenic patients, in certain forms of heart disease accompanied by irritability, and in painful neuritic affections. It should be used with care, however, if arteriosclerosis exists.

Presence of Spirochæta Pallida in Physiological Secretions of Persons Affected with Hereditary Syphilis.—A. Pasini demonstrated the presence of *Spirochæta pallida* in the epithelium and lumen of the alveoli of the lungs, the bronchi, the convoluted tubules of the kidneys, and the sweat glands in two babies subject to hereditary syphilis, but showing no manifestation of it at the time of death. He believes that *Spirochæta pallida* has the power of penetrating the epithelia of various organs during life by means of active movements. The cells penetrated then undergo degeneration. The author concludes that the sputum, urine, and sweat of the hereditary syphilitic may contain the spirochetes, even when the organs present no manifestations of the disease. It seems logical to deduce from these facts that the secretions of these organs are contagious.—*La Riforma Medica*

Book Reviews.

Diagnose und Therapie der Anämien. Nach funktionellen Gesichtspunkten auf Grundlage qualitativer Blutuntersuchung. Besonders für Ärzte und Studierende. Von Dr. Joseph Arneth, Privatdozent an der Kgl. Universität Würzburg. Drei lithographische Tafeln mit über 210 Einzelblutzellen (in Farben), 12 anderweitige Tafeln mit Blutbildern. Würzburg: A. Stuber's Verlag (Curt Kabitzsch), 1907.

The author of this monograph on the diagnosis and treatment of anemia enjoys a considerable reputation in Germany for his discoveries in the field of hematology. He has developed a complicated method of classifying the polymorphonuclear cells of the blood according to the number and arrangement of the nuclei, and has also published the first case of leukanemia. Such qualifications, and the clinical opportunities offered under von Leube at Würzburg, would lead one to expect a thorough piece of work. The volume is, indeed, excellent, although it is certainly not for the student, but for the specialist. The title is also somewhat misleading, as not only the anemias, but the leukemias as well, are included in the discussion. The only criticism to be offered is that the tendency is shown to discuss obscure and unimportant points to the exclusion of a clear, full perspective of each disease type; so that while the expert hematologist might read the volume to advantage, the beginner could not always obtain a clear picture of the blood disease from the description. The second part of the volume, on the treatment of anemia and leukemia, is very interesting in many respects, especially as a full discussion is given of the results of the treatment of leukemia by the *x*-ray. The drawbacks and dangers of such treatment are clearly presented and emphasis is laid upon the disappointing phases of this form of therapy, in which the results are not permanent. A series of excellent colored plates of various blood cells is appended to the text.

A Compend on Bacteriology, Including Animal Parasites. By Robert L. Pitfield, M.D., Pathologist to the Germantown Hospital; Pathologist to the Hospital for Lung Diseases, Chestnut Hill; Pathologist to the Widener Memorial School; Late Demonstrator of Bacteriology at the Medico-Chirurgical College, Philadelphia. With four plates and eighty other illustrations. Philadelphia: P. Blakiston's Son & Co., 1907.

This compend is similar to others in this well known series. The essentials of the subject are here presented in an accessible form, and there are chapters on infection and immunity. The book will be of service to medical students preparing for examination.

Diseases of the Nose and Throat. By J. Bruce Ferguson, M.D., Instructor in Diseases of the Nose and Throat in the Post-Graduate Medical School and Hospital, New York. Series edited by Victor Cox Pedersen, A.M., M.D. Philadelphia and New York: Lea Brothers & Co.

This epitome gives clearly and concisely the diagnosis and treatment of the various diseases of the nose and throat. It is, throughout, practical; and is intended for medical students, both undergraduate and postgraduate. The only criticism we have to make is on the language of several of the prescriptions; there is room for improvement here, particularly as the book is written for students.

Manuel Pratique de Massage et de Gymnastique Médicale Suédoise. Par J. E. Marfort, ex-Professeur de Massage et de Gymnastique Médicale et Orthopédique à l'Institut de l'Empereur Nicolas I er. Troisième Édition. Avec 111 figures intercalées dans le texte. Paris: Vigot Frères, 1907.

This new edition differs so much from the former ones that it is practically a new work. It has been recast, much enlarged, and contains more than twice as many illustrations. In its present form it is a fairly complete manual of the subject and will compare favorably with many more pretentious works.

Der Tripper. Laienverständlich dargestellt. Von Dr. Orlowski, Spezialarzt in Berlin. Würzburg: Curt Kabitzsch, 1907.

Die Syphilis. Laienverständlich dargestellt. Von Dr. Orlowski, Specialarzt in Berlin. Würzburg: Curt Kabitzsch, 1907.

These two pamphlets, about forty octavo pages each, present all that the layman needs to know of the two venereal diseases. Patients afflicted with these troubles ask many questions during their visits at the office. The busy doctor has no time to answer all of these, yet he would like to gratify the intelligent patient's natural curiosity. This is the evident purpose of the pamphlets. They possess a high educational value and may serve as a pattern for similar tracts in English.

On Tabes Dorsalis. The Lumleian Lectures Delivered before the Royal College of Physicians, London, March, 1906. By David Ferrier, M.D., LL.D., F.R.S., Fellow of the College, Professor of Neuropathology in King's College, etc. New York: William Wood & Company, 1906.

In these three lectures Ferrier covers the entire ground of tabes dorsalis from the viewpoint of etiology and of anatomical and physiological pathology, the latter including a study of the symptoms from the scientific viewpoint. The lectures are illustrated by a number of drawings and diagrams, and a bibliography which will prove of great help to the student is appended. The subject is treated in the lucid, systematic style of thoroughly prepared didactic lectures and the book makes excellent reading for those who like a thorough yet not a cumbersome treatment of such a complex theme as our modern knowledge of tabes.

A Study of the Human Blood-vessels in Health and Disease. A supplement to "The Origin of Disease." By Arthur V. Meigs, M.D., Physician to the Pennsylvania Hospital. With 103 original illustrations. Philadelphia and London: J. B. Lippincott Company.

In his book, "The Origin of Disease," the author considers the anatomy and pathology of the blood-vessels in a very incomplete and very brief manner. The present monograph is the outcome of the studies which Dr. Meigs has pursued since the appearance of his earlier book, and contains a considerable number of illustrations beautifully printed on special paper from stones, after pencil drawings which are distinguished for their delicacy of touch and their clearness of minute detail. The work is not a systematic text book on the diseases of blood-vessels, but rather a collection of the author's specimens illustrated and described, and arranged in as orderly a manner as possible. The introductory chapters deal with the minute anatomy of arteries, veins, and capillaries, and the genesis of new blood-vessels. Then follow chapters on the pathology, general and special, of the blood-vessels. The third and last group of chapters deals with the diseases of vessels in various organs and tissues of the body.

The diseases of the blood-vessels are so intimately connected with organic disease in general, with tuberculosis, syphilis, and "old age" in particular, that their study, however tedious and however minute it may be, is of the utmost value. It is to be regretted, perhaps, that Dr. Meigs has not condensed his material into more easily digestible form. The book abounds in valuable facts, and the illustrations are very elaborate, but there is a certain prolixity of style which makes the book difficult to read through. Dr. Meigs deserves credit, however, for his original work, and his book undoubtedly contributes a great deal to our knowledge of the blood-vessels.

L'Ataxie Tabétique. Les Origines, son Traitement par la Rééducation des Mouvements. Par le Dr. H. S. Frenkel, Directeur de l'Établissement pour la rééducation motrice à Heiden (Suisse), etc. Traduit de l'Allemand par le Dr. von Biervliet (de Bruxelles). Préface de M. le Professeur Raymond. Avec 132 figures dans le texte. Paris: Felix Alcan, 1907.

This is a French translation of Dr. Frenkel's book on the treatment of tabes by systematized motor exercises. The work is divided into two parts; the introductory chapters deal with the historical data, the types of locomotor ataxia, the etiology, the diagnosis, and the theoretical basis of the treatment. The second part deals with the technique of the reeducation treatment of Frenkel. Here the practitioner will find a well-illustrated detailed description of the various exercises, and the manner of applying them in tabetic patients. These exercises are not difficult to learn, and require but simple apparatus. The book is therefore of much practical value to those who are willing to devote their time to the systematic treatment of locomotor ataxia.

Beiträge zur Diagnostik und Therapie der Geschwülste im Bereich des zentralen Nervensystems. Von Prof. Dr. H. Oppenheim. Mit 20 Abbildungen im Text und 6 Tafeln. Berlin: Verlag von S. Karger, 1907.

This book is a special treatise based on the writer's personal observations in this field and includes only those cases which were susceptible to surgical treatment. The author of the book has had innumerable opportunities to study this class of diseases during his association with v. Bergmann, Sonnenburg, and F. Krause, and his work is essentially a personal record. There are a number of excellent plates appended to the text, both in colors and half tone.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Fifty-eighth Annual Session, Held at Atlantic City, June 3, 4, 5, 6, and 7, 1907.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 968.*)

HOUSE OF DELEGATES.

Thursday, June 6—Fourth Day.

Report of Reference Committee on Amendments to Constitution and By-Laws.—Dr. GEORGE W. GUTHRIE, chairman, read this report, which recommended an amendment to section 4, chapter 10 of the by-laws by striking out all of the section after the words "five members" and substituting the words, "to be appointed by the President on the first day of each annual session." On motion the report was adopted.

Report of the Reference Committee on Section Work.—This committee reported with reference to the Senn medal that, as it was a surgical matter and the committee was unable to get access to individuals who read essays, it should be referred to the Executive Committee of the Section on Surgery, and the committee so recommended. On motion the report was so referred. The committee to which was referred the resolution of Dr. Richard Cabot of Boston as to the eradication of rabies, recommended acquiescence in the resolution; that it be transmitted to the Committee on Medical Legislation, and that a resolution be adopted leaving the control of the disease to the Bureau of Animal Industry of the Department of Agriculture at Washington; that the committee act in harmony with that bureau; and that public instruction relative to the disease be left in the hands of the Board of Public Instruction. The report was adopted.

Report of the Committee on Scientific Exhibit.—Dr. F. B. WYNN, chairman, read the report. He recalled the fact that the first scientific exhibit was at the Atlantic City meeting of the Association seven years ago. The scientific exhibit had proved of great practical utility. Its aim was the objective demonstration of the work accomplished in the different departments of the Association, as well as of progress the world over. The committee recommended that, in recognition of conspicuous service, neatly engraved certificates of award might be given, say, to the three laboratories or institutions presenting the best exhibits, and to encourage original investigation that a gold medal be awarded for the best exhibit of original research. It especially recommended that for the ensuing year a gold medal be awarded to the best tuberculosis exhibit, the exhibit to be compact, and designed to educate the public. On motion the report was adopted.

Report of Reference Committee on Reports of Officers.—Dr. P. M. JONES of California, the Secretary, read this report, stating that it was unanimous. As to medical education, the committee indorsed the opposition to that course of certain physicians in organizing or conducting incompetent medical schools. The committee commended the work of the Council on Pharmacy and Chemistry, and strongly recommended that the members of the Association confine their prescriptions to articles contained in the U. S. Pharmacopœia, the National Formulary, or such as had been approved by the Council on Pharmacy and Chemistry. The committee believed that a minimum fee of $5 for life insurance examinations was just and fair, and deprecated the organized effort of certain companies to compel the acceptance of a lesser fee. The committee agreed with the view that present conditions would eventually be amicably settled, and concurred in the recommendation that the committee be discharged. It recommended that the various reference committees be appointed two months in advance of the annual meeting, and that the reports referred to these committees early enough for consideration. This recommendation caused considerable discussion, and finally, on motion of Dr. Hall, this part of the report was changed to read: "That at least two weeks before the annual meeting of the Association printed reports be sent to every member of the House of Delegates, and that reference committees be appointed on the first day." The report commended the manner in which the Board of Trustees had conducted the affairs of the Association. The committee believed that the statement of audit was sufficiently definite and comprehensive, and that to make public further the more intimate business details would be unwise and poor business policy. It considered the compilation and publication of the American Medical Directory an undertaking of the greatest value to the Association and to the entire medical profession, and considered the financial status of this portion of the Association's work eminently satisfactory. At this point a long discussion arose as to the statement of audit, several gentlemen speaking in favor of a more detailed report. Dr. Harris, on the part of the Board of Trustees, gave at length the reasons for not making a report in more detail. The question had been studied very carefully, and the method adopted was the one in use in most of the large business concerns of the country. Dr. Simmons also spoke in explanation of the methods adopted by the Association for carrying on its business affairs. On motion of Dr. McMurtry of Louisville a vote of confidence was tendered Dr. Simmons, and he was praised for his triple services as Secretary, Editor, and General Manager. The committee recommended that Dr. McCormack continue his work, and that the Board of Trustees appropriate $600 for that purpose. It earnestly recommended that every effort be made to stimulate interest and activity in county society work. The committee recommended that the report on branch associations be referred to the State associations by the General Secretary, with a request for an expression of their views, to be presented at the next annual meeting. The committee offered a resolution most earnestly requesting all medical journals to refuse to aid in promoting the sale of preparations which had not been approved by the Council by refusing advertising space to such preparations, and requesting the moral and financial support of the members for those medical journals, whether privately owned or controlled by medical organizations, which disregarded commercialism and stood firm for honesty and right dealing, thus sustaining the Council in its great work for the medical profession. Finally, the committee moved the adoption of a vote of thanks to the officers of the Association for their valuable and efficient services. On motion the report as a whole was adopted.

Report of Reference Committee on Medical Education.—Dr. LUND, the Chairman, read this report. The committee specifically indorsed the compilation of tables showing the standing of medical schools. While the House of Delegates still adhered to the requirements of a high school course of four years before entrance into a medical college, it thought that as soon as possible the requirement should include a knowledge of physics, chemistry, and biology. The committee recommended that night schools should not be in good standing before the Association. The licensing boards of the States should have charge of the preliminary requirements instead of that being determined by the schools themselves. The committee was in favor of the rapid extension of reciprocity in medical licensure. The report closed by complimenting the Council on Medical Education, and recommending a vote of thanks for its work. On motion, the report was adopted. A resolution was offered relative

to the high schools in the South, where there were only three or four high schools with a course of over three years. The object of the resolution was to endeavor to induce the high schools in the South to raise their course to four years. The resolution was adopted.

A resolution was adopted providing that the journal of the Association be sent free to all medical libraries in the Medical Library Association, the names of the libraries to be submitted to the Secretary of the Medical Library Association.

Application was made by the Southern Medical Association for recognition by the American Medical Association as a branch association. The report was referred to the appropriate committee.

The Committee on the Davis Memorial asked that the request for an appropriation of $5,000 be referred to the Board of Trustees. On motion, the report was so referred.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. Herbert L. Burrell of Boston; *First Vice-President*, Dr. Edwin Walker of Evansville, Ind.; *Second Vice-President*, Hon. Hiram R. Burton, M.C., of Delaware; *Third Vice-President*, Dr. George W. Crile of Cleveland, O.; *Fourth Vice-President*, Dr. W. Blair Stewart of Atlantic City, N. J.; *General Secretary*, Dr. George H. Simmons of Chicago; *Treasurer*, Dr. Frank Billings of Chicago. The three *Trustees* whose term expired this year, namely, Drs. T. J. Happel of Tennessee, W. W. Grant of Colorado, and Philip Marvel of New Jersey, were reelected.

A resolution was offered and adopted providing that recognition be given to the branch associations applying for the same, subject to the adoption of a uniform constitution and by-laws, to be prepared by the Committee on Organization of this Association.

It was decided to hold the next annual meeting in Chicago, Ill.

Dr. Happel stated that the request for an appropriation of $5,000 for the Davis Memorial had been referred to the Board of Trustees without a recommendation by the House of Delegates. The Trustees did not wish to assume the responsibility, and he wished some action taken by the House. After much discussion it was decided to postpone the matter until next year.

After a resolution thanking the President for the impartial and honest way in which he had presided over the deliberations of the body, the House of Delegates adjourned.

SECTION ON SURGERY AND ANATOMY.

Wednesday, June 5—Second Day.

Physiology of Exophthalmic Goiter.—Dr. S. B. Beebe of New York read this paper. He said that the title of it should rather have been "Physiology of the Thyroid Gland in Its Relation to Exophthalmic Goiter." He said that recent work had definitely shown the thyroid to belong to the so-called vital organs. There was very little actual scientific knowledge of the gland. He then spoke of the recent positive proof that had been developed of the essential differences between the thyroid and the parathyroid—myxedema developing after removal of the first and tetany after removal of the second. He said that in his experimental work with Dr. Rogers he had been able, by the employment of beef parathyroid nucleoproteid suitably administered to save animals from tetany even after they had gone into profound convulsions one, two, and even three times, but that death could never be averted for more than three weeks. That this was due to the toxic condition of the blood was shown by the fact that heavy feeding of meat would cause convulsions earlier after parathyroidectomy than in animals in normal condition. He spoke of the detoxication theory and mentioned that thyroid feeding stimulated metabolic activity. During some stages of the disease it was unquestionable that large quantities of nitrogen were necessary to maintain normal body weight.

Pathology of Exophthalmic Goiter.—Dr. W. G. MacCallum of Baltimore read this paper. He said that as yet there was no unanimity of opinion as to the degree of change which took place in the thyroid. It was unquestioned, however, that many of the changes found had not the characteristics of primary changes. Neither was it yet determined whether the well known disturbances in metabolism were the cause or the effect of the disease in the thyroid or in the central nervous system. Classifying the gross changes he enumerated them as follows: Enlargement of the gland not always great. Dilatation of veins usually marked and very characteristic. Interior of tumor not hyperemic. Loss of elasticity. Color an opaque gray. The amount of colloid varied, but it was characteristically diminished in amount, its place being taken by a fine network of fibrous tissue. The acini were lined with characteristic high cylindrical epithelium instead of the flat form of normal cell. Mitotic figures were frequent. Adenomata occurring in these glands in conjunction with the exophthalmic lesion were not uncommon. They were advantageous and had nothing special to do with the disease. The thymus was usually considerably enlarged. In sixteen cases the parathyroids had been examined and found normal. In the two or three cases examined the sympathetic nervous system had been found normal. This was also true of the central nervous system. Thyroid, lymphoid, and thymus changes were the only ones constantly observed.

Diagnosis of Exophthalmic Goiter.—Dr. L. F. Barker of Baltimore read this paper. He said that some observers had gone so far as to deny the existence of struma, but careful study had always shown it to be present. As a rule he said the swelling was not large, particularly in the early stages of the disease. The isthmus of the gland was generally broad and thick and the pyramidal lobe was increased. In acute cases the tumor was often softer than the normal gland. There was a characteristic granulation of the surface. Most important of all were the vascular characteristics. Pulsation was in many cases visible, and by the palpable expansion and the bruit invaluable assistance could be obtained in making the diagnosis. Tachycardia was the most constant symptom; the heart always running above 90 and sometimes approaching 200. Under the latter conditions the patients frequently complained of subjective feelings of cardiac distress. The exophthalmos was the most striking symptom. It was absent in its true form in about one-third of the cases. A differential diagnosis of the character of the exophthalmos was to be arrived at by the use of the exophthalmometer. If present the true form was bilateral and continuous. Tremors were so invariably present that some observers had considered them the fourth sign. They were characterized by a rather constant vibration of eight to ten per second. These tremors were not confined solely to the extremities, but extended frequently to the muscles of the trunk. The digestive apparatus often was involved—diarrhea and vomiting being quite characteristic occurrences in advanced stages of the disease. Dyspnea was a late symptom and generally of cardiac origin. The genitourinary system presented no constant findings. The psychic phenomena were marked and often the very first to be observed. They might be so marked as to necessitate the regulation of the patient under detention. He recited the eleven signs which, besides exophthalmos, might not infrequently be seen in the eyes. In closing he said it should not be forgotten that all pulsating strumata were not Basedowean.

Medical Treatment of Exophthalmic Goiter.—Dr. R.

B. Preble of Chicago read this paper. He said that treatment must be directed to the correction of neuroses and of individual symptoms and to the improvement of thyroid metabolism. Rest should be physical and mental; it should be general and it should be complete. The diet was of particular importance and should be suited to the particular case. Certain advantages could be gained by various changes in climatic conditions, some doing well in mountains, some at the sea coast. All forms of electrical and hydrotherapeutical treatment undoubtedly acted only by suggestion, and it must not be forgotten that these people of all others were most liable to suggestion. Of drugs, opium was the most valuable, although the most dangerous. All gland extracts were probably valueless and thyroid extract was unquestionably harmless. Cytotoxic preparations were still under trial. In conclusion he said it was far better to operate too early than too late.

Surgical Treatment of Exophthalmic Goiter.—Dr. Albert Kocher of Berne, Switzerland, read this paper. He spoke from the experience derived by himself and his father in a series of 3,460 cases of operation for goiter. Of these, 315 were for Graves' disease. He stated that their results to date had been so satisfactory that there seemed no need of changing the method. He referred in passing to the operation of sympathectomy and stated that it was useless. In the last 91 operations there had not been a single death and before this the mortality was but 3½ per cent. This he said would be lower. Decreased mortality was due to a wider recognition of the necessity of prudence in handling the tissues. Prior to operation a careful study should be made of the strength of the heart with a special reference to determining whether the existing enlargement were of a compensatory or dilatational type. The blood pressure determined by the Riva-Rocci instrument was of very great importance. If it was low it was necessary to study the effect of exercise upon the patient. They should always be prepared most carefully for operations even if such were to consist solely in the ligation of one vessel. A second thing studied was the degree of intoxication. Another important point and one most recently developed was the examination of the blood. In his last fifty-eight cases there had been a marked increase of lymphocytes and a diminution of polymorphonuclears. The leucocyte count itself was normal, the increase of lymphocytes being proportional to the degree of disease. Nothing was known as yet of the cause of this lymphocytosis. It was different from that which accompanied pus formation. It explained the danger of the very slightest infection in these cases. In answer to the question, does the operation cure, he said that the symptoms were often increased after operation. This was due mainly to hemorrhage and to gland injury. Eighty-three per cent. had been cured, some of these as long as seventeen years without recurrence. The heart and the eyes took longest to recover. As to technic he said that more than two arteries should never be ligated at once. Never more than one-half the gland should be removed except for special reasons. The surgeons and the physicians must work together in order to obtain the best results.

Dr. W. S. Halsted of Baltimore said that in future he believed much good would be derived from the serum of Beebe and Rogers. It would some day make a most acceptable substitute for the surgical work, which, at best, was crude and maiming. As to the danger of postoperative tetany, he said that during the past two or three years it had become relatively frequent owing to the increased number of glands resected. The pathology of tetany had been made comprehensible by the discovery of the parathyroids. Each gland—there were usually four—was separate and had a separate blood supply; and it might well be said that their protected position was indicative of their extraordinary value to the individual. The speaker believed that these glands could be seen at operation. Less often were they removed bodily than was their circulation interfered with. Certain observations recently made at the Johns Hopkins Laboratory seemed to contraindicate the stripping of the posterior capsule as advised by Charles Mayo. Ligation of the thyroid even might cut off the tiny blood supply of these minute but valuable glands. As to the possibilities of successful parathyroid transplantation he said that we were still in doubt. So far as their observation had gone, the transplanted organs had been absorbed with but certain exceptions. These occurred when the organ had been placed on or near the surface of the spleen rather than in its substance.

Dr. Frank Billings of Chicago asked how any logical and satisfactory treatment of the disease could possibly be formulated in our present lack of knowledge of the disorder. One thing known about it was that in certain places it was endemic. He said that the medical results obtained by specific individual treatment were sometimes good, but that surgical therapy must in most cases be employed. He cited the history of a woman who had apparently recovered after eight months' rest in bed.

Dr. William Mayo of Rochester said that what he had to say would be spoken for his brother. He paid high tribute to the value of Kocher's hyperthyroidism theory. It had given to the surgical world a working pathological basis. Three types might be recognized clinically: The vascular goiter, the solid goiter, and those cases in which hyperthyroidism developed late. There was a pseudohypertrophic type. This called for the removal of the tumor, not the thyroid. As to the operative relief obtained, it depended upon the removal of sufficient glandular tissue and was characterized by a long continued convalescence. Their operative mortality in 170 cases had been nine, but four of these had occurred in the first sixteen cases, there having been but one in the last seventy-five cases. The lesion was surgically curable if operation was not undertaken too late.

Osteoplastic Operations.—Prof. E. Küster of Marburg, Germany, read this paper. He detailed the history of osteoplastic methods from the time of origin in Germany until the present day. He said that preeminently the conditions of success in all bone work were absolute asepsis and a contact of the bone fragment with other bones. He showed numerous specimens illustrative of his work and the instruments which he devised for its execution.

The Technique of Appendectomy.—Dr. John A. Wyeth of New York read this paper. He paid tribute to the men whose courage and resource had given the operation to the world. He lamented the fact that there were still so great a diversity in the technique and urged that the operation be put on a better defined basis. He advised the perpendicular incision with separation of the rectus. The length of incision through the peritoneum should average four inches. The primary incision of peritoneum one inch, to be enlarged if necessary. The particular point which he brought forward with much emphasis was the necessity of ligating the appendix itself with strong silk. He would disinfect the stump with carbolic acid and alcohol. He objected very strenuously to the employment of the purse-string suture or any form of suture of the intestinal wall. This was because the blood supply of the appendix in a large number of cases came not through the mesentery, but crossing through the wall of the cecum passed directly into the appendix itself. He gave a long list of recorded cases in which there had been serious hemorrhage, the result of the use of the purse-string suture.

Dr. Dawbarn of New York said that the cause of postoperative hemorrhage was to be found in the failure of the operators to apply the technique of the purse-string suture properly. He advised the use of linen thread and

stated that if after an operation for gangrenous appendicitis a fecal fistula developed it was the operator's fault. Like Kraske's treatment for erysipelas, he interrupted lymphatic continuity and provoked leucocytosis by the introduction of a double suture line.

Dr. Emory Marvel of Atlantic City said that he considered the small incision to be the best in the male, whereas the long perpendicular incision found best use in the female. He did not agree with Dr. Wyeth in the necessity for tying off the appendix.

Dr. C. von Zwalenburg of Riverside, Cal., said that the blood supply of the appendix was often anomalous. He recited a most interesting description of a series of experiments which he had made upon the effect of dilatation in the dog's appendix. At thirty millimeters pressure there was a decided slowing in the circulation; at sixty there was partial stasis; at one hundred this was complete.

The Operation of Gastrojejunostromy and the Physiological Results.—Dr. H. J. Paterson of London, England, spoke of the great importance of further knowledge on this important subject. The amount of bile which regurgitated into the stomach after this operation had been much exaggerated, for it probably did not represent more than five or six per cent. of the gastric contents. Obviously, if bile were present pancreatic juice must also be present. A diminution of gastric acidity was the first effect of the operation. This was not due to the presence of alkaline fluids which had entered the stomach from the duodenum. The average diminution was thirty-five per cent. This was obviously too great to be entirely a chemical reaction. There was also a diminution of chlorides. This was due to diminished secretion. Some acid undoubtedly was squeezed out of the stoma. This led to an earlier secretion of pancreatic fluid. There might also be a reduced secretion of secretin. As to the effect on gastric digestion, he believed that a diminution of the chlorides was not an indication of diminished digestion and as proof cited the examination of feces. The effect on the gastric motility was not so great as to make it of pathologic import. Before operation, if impaired by stenosis movement, it increased postoperatively. If unimpaired, it may be increased or diminished, but always within physiological limits. As to the question of drainage he said that the size of the opening probably determined a certain amount of drainage. If it were not drainage which caused the obvious improvement in many of these patients, what was it? If only drainage, why not use stomach tube? Hyperacidity was always diminished not because of drainage he believed, but owing to a diminution of the chlorides. Metabolism was not affected. Whether the food passed through the stoma or not, he considered still to be an open question and of academic interest only.

Dr. J. T. Gilbride of Philadelphia said that the operation was now on a physiologic basis and expressed the thanks of the section for the manner in which it had been presented.

Dr. W. B. Cannon of Boston said that he was particularly interested in the question of whether or not this was a drainage operation. According to his results, which were obtained by fluoroscopic observation, the pressure at the pylorus was three or four times greater than at the stoma; this was due to peristaltic waves, which not only compressed the food, but liquefied it as it pressed against the pylorus. He referred to the corroborative findings which had been reported from the Surgical Research Laboratory of Columbia University.

Dr. J. W. Draper Maury reviewed the work referred to by Dr. Cannon and stated that if dogs were fed a string to which a bag of shot had been tied, when gastroenterostomy was performed, positive observation could be made as to the function of the pylorus and the stoma. This could also be done by observing the weight in dogs after low gastroileostomy.

Vaccine Therapy of Surgical Infections Controlled by the Opsonic Index, with Reports of Results.—Dr. L. L. McArthur of Chicago said this subject was of particular interest to surgeons because of the fact that the ordinary infections they met with were the particular ones destroyed by phagocytosis. If the phagocytic capacity could be increased and if at the same time vaccines could be employed to raise the systemic index, the result ought to be promising. In general he summed up as follows: The opsonic index of Wright offered valuable assistance in the diagnosis of the nature of many obscure infections. That it was at present the most accurate method of controlling the dosage of vaccine therapy, but might later be replaced by a simpler technique. That sufficiently gratifying results had been obtained to encourage others to use vaccine therapy in conjunction with the recognized treatment of the given ailment and in particular in conjunction with Bier's treatment.

The Pelvic Articulations, with Especial Reference to the Differentiations Between Lesions of These Articulations and Other Surgical Conditions.—Dr. J. E. Goldthwait of Boston read this paper. He said that the pelvic bones were held together by ligaments and that the articulations were true joints; they had, because of their lack of cupping and because of their oblique position and the irregular manner in which weight was applied to them, a singular liability to strains and to disease; he said that this was particularly true of the sacroiliac joint. The pain in this region was produced by a slipping of the two bones. An important point made was that the backache so characteristic after prolonged operations could be entirely relieved by proper support during the operation to the lumbar spine.

Foreign Bodies Lost in the Peritoneal Cavity.—Dr. Archibald Maclaren of St. Paul, Minn., said that the five-yard sponge and long hemostatic forceps were the most important factors in preventing this serious accident. He cited a series of cases in which all manner of materials had been left within the abdomen and urged a continuance of the vigilance which was being universally practised.

Local Anesthesia in General Surgery.—Dr. James F. Mitchell of Washington, D. C., said that the chief reason for the employment of a general anesthetic in more than one-half the average run of major operations in hospitals was the time element; local anesthesia was slow, success could be obtained only by great patience and by a thorough knowledge of the varying sensibility of the tissues. He recited a long series of operations which he had performed under local anesthesia and urged its more general employment.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Wednesday, June 5—Second Day.

Early Postoperative Intestinal Obstruction.—Dr. C. C. Frederics of Buffalo read this paper. He said postoperative ileus was one of the serious sequelæ following abdominal operation. Intestinal obstruction following abdominal operations of all kinds was quite frequent. He divided postoperative obstructions for convenience into early and late, the early including those occurring previous to the patient's discharge from the hospital, that is, within about two or three weeks. In the earlier cases it was often difficult to make the diagnosis, for failure of the bowels to move, the flatulence, temperature, and many things called for great care in making a diagnosis. The passing of gas, or of some feces, should not lull into a feeling of safety, for careful observation would show no real improvement in the patient's condition, no decrease of distention or vomiting, no improvement in pulse or general condition. There were three well-recognized forms of intraperitoneal lesions which accounted for these con-

ditions, viz., septic peritonitis, mechanical obstruction by adhesions or bands, and organic spasm of the bowel. Many of the symptoms of obstruction and septic peritonitis were the same and the differentiation was of vital importance to the patient and the surgeon. In mechanical ileus the peristalsis was accompanied with griping pain coming on in paroxysms. Many cases had been reported by different observers in which tonic spasm of the bowel had caused occlusion and on operating or at autopsy no other cause for obstruction was found. The surgeon often had to shoulder the responsibility of an exploratory incision. The vomiting of obstruction had been called reversed peristalsis, but this explanation for the profuse vomiting was an incorrect assumption.

Dr. Frederics said that every operation should be done with the object not only of relieving the patient of his ailments, but of protecting him against postoperative sequelæ of every kind. In most cases adhesions of some form existing prior to operation or produced by the pathological process present, or as a result of the operation, were the cause, and to prevent these as much as possible was the work of the surgeon. In operating the intestines should be handled as little as possible; large flat gauze sponges or towels should be used to isolate the intestines, and these would irritate less if wrung out of warm sterile salt solution before use. One should avoid unnecessary tearing of the peritoneum, the spreading of pus, and if possible aspiration. Denuded points of peritoneum, especially the stump of broad ligaments, tumors, etc., should be covered. In all pelvic operations in women drainage could best be done through the vagina, the cigarette drain filling all demands. If necessary the omentum should be stitched where the operator wanted it to remain, but drainage should be avoided when possible. Where old adhesions existed between the bowels it was a question whether it was best to break them up and thus make opportunity for new and probably worse adhesions. It was the consensus of opinion among surgeons that too early or too strenuous efforts to move the bowels should not be made, for the whole nervous apparatus had received a shock at operation. Rest was indicated and only the lower bowel should be stimulated to pass gas for the relief and comfort of the patient. Some would forbid morphine on account of the after effects, but if the operator had to suffer the pains himself he would probably give the patient relief. These patients should have an anodyne, and codeine phosphate, 1 to 1 1-2 grains, hypodermically, would quiet the pain and cause no nausea. This was in line with withholding cathartics that the patient might get in shape for her organs to begin function again. If a cathartic did not give good results it might be concluded that it was harmful. Atropine, eserine, and physostigmine in large doses had not done what was hoped for them. Enemata might be used as less harmful. Change of the patient's position was advisable. In these cases early operation was the watchword. The largest mortality was within three or four days. In some cases the patient was killed by the lethal dose of the toxins locked up in the bowels, and when the obstruction was relieved this accumulation was released, to be absorbed with fatal results. It might be well to bring a knuckle of the gut into the wound, incise, clean out, use lavage into both afferent and efferent loops. How and how much was to be done depended on each case and must be determined by the operator. There was little doubt that in the future when the patint was *in extremis* the operation would be to do an enterostomy at the most prominent point of distention or to one side of the original incision.

Prevention and Treatment of Postoperative Intestinal Obstruction.—Dr. Daniel H. Craig presented this paper. After referring to his previous articles on the subject and reviewing the action of eserine upon the intestines, Dr. Craig described the anatomy of the intestinal walls and the nerve plexes that were involved in the action of the drug. Postoperative paralysis was probably due to the dual influence; inhibition from stimulation of the splanchnic fibers and exhaustion from overstimulation, and hence fatigue of the gangha in Aurbach's and Meisner's plexes. To regulate peristalsis it was necessary to stimulate spinal reflexes acting through the splanchnics and restore the energy to the intestinal nerve ending and muscles. To meet this condition eserine salicylate was found fitted and a continued use of it with study of its action had borne out the assumption that its action in intestinal obstruction was very valuable. As the cases classed here were the recent ones, the factors to be considered as causative of postoperative obstruction were reduced to paresis, volvulus, thrombosis of the intestinal vessels, and adhesions in connection with kinks and slight local infection. Then the diagnosis of postoperative intestinal obstruction within the first few days resolved itself practically into the differentiation between mechanical obstruction, paresis, septic peritonitis, and shock. Dr. Craig said that for six years it had been his custom to give the patient a hypodermic injection of atropine sulphate preceding the anesthetic, and upon the operating table, as soon as it could be determined that it was not contraindicated, from two to five minutes after the opening of the abdominal cavity, he gave an injection of eserine salicylate in fresh solution. Constant employment of this method had made him more enthusiastic in its employment than ever. Two arguments had been presented against it, one that fatal intestinal paresis was too uncommon to necessitate its prophylaxis in every case by this procedure. While in a measure that was true, the fact remained that such cases did arise and moreover the means used to prevent the condition also added to the comfort of the patient. The other objection was that the prevention of adhesions interfered with nature's process of preservation by walling off by adhesions. We might say that these adhesions were pathological and not protective. The eserine prevented enterospasm or overcame it when existing by producing the peristaltic wave. The eserine also prevented meteorism and thus added much to the comfort of the patient. Even when eserine was not used as a prophylactic it was often used to cure postoperative intestinal obstruction by setting up peristalsis, thus straightening out the kinks and the obstruction. As to the dosage, Dr. Craig said he used 1-40 gr. on the operating table, but meteorism and abdominal distention could be produced by too large or too frequent doses of the drug. The keynote of success in the after-treatment of cases in which prophylactic doses had been used was to let the patient alone, for cathartics and enemata were unnecessary.

Successful Treatment of Acute Postoperative Ileus by Incision and Drainage of the Intestine.—Dr. Francis D. Donohue presented this paper. He said some paralysis of peristaltic activity usually followed surgical interference in the abdominal cavity. The milder forms were readily overcome by the usual methods, but those that did not yield presented a most dangerous complication. Peristaltic inertia often caused "kinking" and serious conditions might result. The symptoms developed early and in twenty-four to thirty-six hours might be well marked. Persistent vomiting, changing from bilious to stercoraceous, should cause anxiety. With this came abdominal distention not relieved by enemata and the vomiting was not controlled by gastric lavage. The treatment by eserine and physiological doses of atropine might occasionally prove useful, but when a case had reached a critical stage mechanical treatment offered the best chance for recovery. The value of enterostomy in postoperative procedure was yet to be fully appreciated. It afforded a means for escape of gas and feces, it afforded an opportunity by the injec-

tion of a solution of magnesium sulphate to provoke peristalsis at considerable distance from the point where the tube was placed, and by it stimulating fluids and food might be introduced. In all cases preliminary to drainage by the tube all loops of markedly distended intestine should be incised, the liquid contents and gas emptied out, and the opening closed by continuous intestinal suture. The resulting fecal fistula might be closed or left to nature. Irrespective of where the distended loops occurred, a permanent tube should be left in the cecum for drainage and for other treatment.

Dr. NOBLE of Philadelphia said he was pleased with the optimism of Dr. Donohue, but his experience was such that he devoted every energy to preventing obstruction. He took pains at the operation and did not operate in acute conditions. He did the same thing in appendicitis where it was possible. Often the patient was put on the table too quickly without the surgeon taking enough time to study the case. Years ago he lost patients who died from septic peritonitis. He found in one case that the stomach occupied nearly the whole abdomen, and since then he had relied much on the stomach tube. As far as the treatment of postoperative intestinal obstruction was concerned, nearly every *real* case ended fatally.

Dr. MONTGOMERY of Philadelphia said the important point was the scarring of as little surface as possible for adhesions, and he did not permit the patient to remain in one position. When there were symptoms of obstruction he used lavage and enemata, and sometimes operation had to be resorted to. He had a patient now that was adverse to an operation, but when enemata and lavage failed he opened the abdomen and found a twist in the intestine. He favored washing out the intestine and leaving it open for lavage.

Dr. TABOR JOHNSTON said an important point was the preparing for the original operation by thorough study of the patient's condition, for often the patient was hurried into the hospital and operated upon the next morning and thus prophylactic measures were neglected. The fate of the patient was virtually settled when she was taken from the table. By doing work carefully and leaving out no detail there would be little need for secondary operation.

Dr. STONE said he thought it was seldom necessary to reopen a patient's abdomen, and when she was put to bed her fate was virtually settled. The reader of the paper did not mention enemata of alum water. Dr Stone said he would use eserine. He called the condition where the intestine was paralyzed to an extent of about six feet and vomiting took place, "reversed peristalsis." He thought that peristalsis was a wave going along the intestine and not so much the side movements. He believed in making the incision large enough to do the work well.

Dr. GORDON of Portland, Me., said he believed in making haste slowly. He had few cases of intestinal obstruction, but cases with lots of germs inside, and he liked to go after them. He was a believer in the use of eserine, but he thought operators were a little hasty in many of the cases. Even if there were exciting conditions the patient would likely come around all right. In many cases he used a high enema of quinine sulphate or sometimes a low enema with a bulb syringe. He used 20 to 30 grains in two ounces of water. If the patient vomited, he used the stomach pump, for one could thus work at each end of the canal at the same time. He believed in letting the patient drink all the water desired.

Dr. GOLDSPOON of Chicago said he believed in preventing the trouble and gave a large dose of castor oil before operation, as much as ten ounces, and large enemas. The patient was allowed liquid diet to within eight hours of operation and plenty of water all the time. He gave strychnine twelve hours before the operation, and if the heart was feeble two minims of camphorated oil. It had been shown that to expose the intestine to the air was injurious and in operating he did not want to see an intestine any more than a snake. He used wet cloths to protect the intestines, dipped in a bicarbonate solution. The covering of denuded surface was all-important, but he did not fix by the omentum.

Dr. DEAVER of Philadelphia said the discussion sounded like one on wind colic rather than obstruction. When operating, he believed in quick work. Get in quick and get out quick. Many of the patients had accumulation of gas and in ordinary practice he did not see many cases of postoperative intestinal obstruction. The cases he saw were after bad septic conditions, as in appendicitis. He never got obstruction in chronic appendicitis, but in the acute cases seven in ten patients recover and three die.

Dr. FRY of Washington said he had a case after cesarean section in which he gave eserine and the bowels moved, but the condition recurred and the patient died. He believed in the use of the stomach pump, but he also gave alum enemas.

Dr. CARSONS of Troy asked why one should handle the intestines and said it was because the patient was not under full anesthesia. If the patient was in profound anesthesia the bowels would drop down out of the way and there would not be the sudden spasms that come by contraction. The bowels shoud be let alone for forty-eight hours. Once in a while he had cases of obstruction in the pelvis and by manipulation got the loop out and the patient recovered. Sometimes sepsis gave the symptom of obstruction, and this might produce the gastric symptoms on account of toxin absorption. Atropine aided in some cases and he believed eserine was beneficial.

Dr. BONAFIELD said he had unbounded faith in eserine. In one case the house physician gave 1-30 of a grain to a woman weighing about eighty-five pounds and things looked bad for a time, but she came out of it all right. He thought peritonitis was confused with obstruction.

Dr. BANDLER of New York said that he did not always get the desired results with eserine, but in most cases it was an aid.

Dr. FISHER of Philadelphia said he was confident that 50 per cent. of the cases were due to conditions of the stomach and he found that 1-8 grain of morphine was useful at times. Interfering to move the bowels too soon often made trouble; in case of distention of the stomach he used the stomach pump.

Dr. FREDERICS said he did not mean to go into the question of antiseptics, distention of the stomach, etc., but he did contend that when postoperative obstruction of the bowel occurred it was necessary to act promptly, for if one waited the patient would die.

Dr. CRAIG said he did not wish anyone to think that he would use eserine in mechanical obstruction. In driving a horse the question was, which was the best—a whip or oats. Eserine was the oats and milk of magnesia was the whip. One should not be in a hurry to make the bowels move if the patient was doing well.

SECTION ON DISEASES OF CHILDREN.

Wednesday, June 5—Second Day.

The Greatest Menace to Whole Milk in City Supplies.—Dr. ALEXANDER MCALLISTER of Camden, N. J., read this paper. The cry of the day was for whole milk, whereas in the past it had been for pure milk. Pure milk might be far removed from whole milk. Whole milk, on the other hand, was always pure milk—milk whose integrity was untouched by age, science, or knavery. Legislation and eternal vigilance had gone far to give our cities pure milk. The former menaces to pure milk had become largely matters of history in consequence of improvement in trans-

portation, the employment of ice, inspection, etc., but a new danger had arisen in the wholesale pasteurization of milk. This was to be very much deprecated.

Certified Milk and the General Milk Supply of Louisville.—Dr. Henry Enos Tuley of Louisville, Ky., detailed in this paper the work accomplished in Louisville within the last ten years along the line of bettering conditions in the dairies and improving the milk supply. Political influences had hampered the work of putting an end to distillery-fed dairies, which had been the most serious menace to the health of the community, particularly the children. The bacterial content of milk from swill-fed cows was enormous, as could readily be imagined from the condition of filth in which such cows were kept. The swill caused a persistent diarrhea and the cows fairly reeked in their own foul liquid discharges. The result was appalling. At present, however, as an outcome of persistent effort on the part of those who had undertaken the work, not a gallon of swill was used, the dairies were kept under proper condition, and the milk supply vastly improved. Inspection was not yet perfected, however. The sale of milk from tuberculous cows could, with proper laws properly enforced, be entirely stopped. He outlined the scope of the work of milk commissions, and made a plea for certified milk—for pure milk, rather than impure milk pasteurized.

Dr. Alfred Friedlander of Cincinnati, O., said that the chief difficulties encountered in Cincinnati resulted from the fact that the majority of cows were slop-fed, and the distillery interests had been powerful enough to check any move to put a stop to this practice. It had been accomplished, however, and the commission now certified two grades of milk, viz., the certified milk, and the inspected milk. The requirements for these were just the same except as to bacterial content. Certificates were now given to dairymen who wished to deliver milk in cans to the hospitals under the requirements of inspected milk.

Dr. Thomas S. Southworth of New York City called attention to the three classes of individuals who advocated the pasteurization of the entire milk supply of New York City. These were: (1) Those who conscientiously believed that pasteurized milk was even more of a life-saver than modified milk; (2) those dealers who were planning to put out pasteurized milk in large amounts, and who therefore wished to create a large demand; and (3) the manufacturers of pasteurizing apparatus.

Dr. C. K. Johnson of Burlington, Vt., was of the opinion that a large, perhaps the largest, part of the trouble with the milk supply rested with the small corner grocery or creamery, where the cans were allowed to stand open much of the time. He thought much could be accomplished by cooperating with the dairymen and stimulating them by joint meetings and in other ways to take an interest in the matter of furnishing pure milk.

Dr. Walter G. Murphy of Hartford, Conn., cited two cases of tuberculosis in cows that were giving milk up to the time of their slaughter. In one autopsy revealed a tuberculous abscess, containing half a pint of pus, immediately attached to a milk duct.

The paper was further discussed by Dr. Louis C Ager of Brooklyn, N. Y.; Dr. S. McC. Hamill of Philadelphia, Pa.; Dr. C. W. Brown of Elmira, N. Y.; Dr. C. G. Kerley of New York City, and others, and the discussion was closed by Dr. McAllister and Dr. Tuley.

The Disadvantages of Low Proteids in Infant Feeding.—Dr. Alfred Hand, Jr., of Philadelphia, Pa., who read this paper, said the term "low proteid" was used by him to mean any percentage below 1.8 per cent., or half of that present in the whole cow's milk. When low percentages were given for a prolonged period there was risk of various conditions developing, such as constipation, failure to gain in weight properly, irregular sleep, colic, indigestion, and increased susceptibility to various infections. In avoiding the dangers of overfeeding there seemed to be a tendency to go to the other extreme and to feed infants on too weak a mixture. The aim should be not to overtax the digestive powers, but at the same time not to leave too wide a margin of unused power.

Dr. Thomas S. Southworth of New York City thought the normal child at the end of the first six months should be given a higher percentage of proteids than the two per cent. mentioned by Dr. Hand.

Dr. John Lovett Morse of Boston, Mass., did not believe that a baby of a given age should have a given amount of proteid in its food. It was true that it must have a certain amount of proteid, but this should depend upon its weight and not upon its age. It must have two grams per kilo in order to thrive.

Dr. G. R. Pisek of New York City emphasized the importance of the proper examination of the stools as an index to digestive power of the child.

Dr. Hand closed the discussion.

The Importance of the Early Recognition and Treatment of Rachitis.—Dr. Thomas S. Southworth of New York City presented this paper. It had been claimed by some that all bottle-fed infants are rachitic. This did not apply to those whose food is properly controlled, or whose digestion is good. Rachitis developed because of parental blindness in many instances, the parents failing to recognize peculiarities in the child which needed special attention. Many times, too, physicians failed to recognize the early symptoms of the disease. Rachitic deformities were often far advanced before medical aid is sought, and the early signs were often unrecognized and untreated. Evidences of rachitis might easily be overlooked upon superficial examination. There was great variation in the incidence of the symptoms. While rachitis might undoubtedly begin before the fifth month, yet in his experience this was exceptionally the case. The grouping of the symptoms was also subject to great variation. Rachitis was of very frequent occurrence among infants. Acute rachitis was a menace to infancy, and rachitic deformities a menace to the adult. Prophylaxis should therefore be strongly urged. Racial predisposition had been noted, negroes and the poor children of foreign parents seeming particularly susceptible to the condition. The dietetic treatment in the first and second years was of great importance. The use of cod-liver oil and phosphorus, singly or together, was advocated. Phosphorus was of great value in cutting short the acute and progressive symptoms of the disease.

Dr. A. W. Fairbanks of Boston, Mass., asked Dr. Southworth whether he attributed the inability of rachitic children to walk to weakness of the musculature of the ligaments, or of the bones. He also asked whether organic phosphorus had any advantage over inorganic phosphorus.

Dr. John Lovett Morse of Boston, Mass., agreed with Dr. Southworth as to the frequency of rachitis. In an investigation at the Infants' Hospital in Boston it had been found that 80 per cent. of the infants showed bony signs of the disease, and he believed that such signs could be found in 50 per cent. in private practice. The only pathognomic signs were to be found in the bony skeleton. Improper hygienic surroundings played as important a rôle as did food. He believed that bony tenderness to which Dr. Southworth referred was due to scurvy and not to rachitis. He took issue with the reader of the paper concerning the value of phosphorus in these cases. It was of prime importance to keep such infants out of doors and to feed them properly.

Dr. Isaac A. Abt of Chicago did not concur in the view that rachitis is due to an excess of fat, but rather inclined to the belief that it was due to a general toxemia, a chemical poisoning produced as the result of faulty met-

abolism. Rachitis might be congenital, particularly in the case of colored and Italian children. Heredity probably played some part, certain infants having a rachitic tendency. They do not inherit the disease itself. He agreed with Dr. Southworth as to treatment, except that he did not begin sufficiently early to give something more than milk. Some rachitic children at the end of eight or nine months might be given any of the animal broths with vegetables boiled in it. Heubner advocated this with undoubted success.

Dr. C. G. Kerley of New York City believed rachitis to be a disease of malnutrition. Malnutrition, with bony changes predominant, was always found in rachitic children. Hygienic conditions certainly played an important part, and while fresh air and proper hygienic surroundings were of more importance in these children than in others, yet the question practically resolved itself into the child's ability to take care of its food. It was not uncommon to see rachitis in children who were ideally cared for in every way; in such children, however, faulty nutrition was a factor. He thought infection could be ruled out in rachitis. Granting that it is a nutritional disorder, the treatment should be instituted accordingly. Codliver oil was beneficial, but he had failed to see any good results from the use of phosphorus.

Dr. S. McC. Hamill of Philadelphia, Pa., said that his experience was somewhat at variance with that of other speakers concerning the matter of the relationship of these manifestations to the nutrition of the child. He had seen children brought up under the most ideal hygienic surroundings, whose health was perfect, develop rachitic manifestations. He emphasized the importance of fresh air both night and day.

Dr. R. B. Gilbert of Louisville, Ky., considered rickets due to a deficiency in lime salts and thought the treatment should be in accordance with this factor. He did not advocate the use of phosphorus, but phosphate of lime would bring about an improvement.

Dr. Southworth, in closing the discussion, said the various structures—muscles, ligaments, and bones—as well as the nervous system, were involved. He used the official oil of phosphorus and insisted that its administration would cut short, as he had said, the acute symptom. He considered dietitic measures more important than hygienic. The tenderness mentioned might be scorbutic, as suggested—that was still a mooted question.

The New Era in Pediatrics; Its Causes and Scientific Foundations.—Dr. G. R. Pisek of New York City called attention in this paper to the fact that a revolution is taking place in pediatrics. Men of broad training had gone beyond clinical observations and had tried to establish the principles that cover these clinical facts. The training and education of the younger physicians in the modern medical college made them capable of working along scientific lines, and these facts were modifying practice and teaching. The utilization of the sciences allied to medicine had tended to remove medicine from the realms of empiricism. The newer chemistry of milk had upset the older theories concerning milk. The general laws of animal nutrition had been found to apply to infants and the broad principles of nutrition established by vast numbers of experiments on animals could be used as a basis for teaching. The fundamental laws of animal life, adaptation to environment, inherent protective ability, and immunity, were assuming greater value and had a direct bearing upon the field of pediatrics.

The Relation of Pathological Conditions of the Nasopharynx to the Dental Arch.—Dr. E. A. Bogue of New York City presented this communication. The etiology of narrow dental arches and adenoids was apparently identical, both arising from stoppage of the nose and inflammation of the mucous surfaces. The withdrawal of the infant's tongue from the roof of the mouth, in order to breathe, was the main cause of narrow dental arches. Nasal stenosis was a concomitant of mouth breathing. The treatment should consist of the expansion of the dental arch and ablation of hypertrophied lymphoids. When taken at about the sixth year and understandingly treated, the results would be: Proper articulation of all the teeth with each other, giving as perfect masticatory surfaces as possible; power of correct enunciation and vocal resonance; ample nasal passages and apparent enlargement up to the normal of all the bones and sinuses of the face.

Dr. H. L. Lowenburg of Philadelphia and others discussed the paper.

Adenoids in Infancy.—Dr. John Lovett Morse of Boston, Mass., said, in this paper, that the general impression among rhinologists was that adenoids in young children should not be removed, as they will surely recur and necessitate a second operation. He did not agree with this. Adenoids were very common among infants and should be removed without delay. The symptomatology of adenoids in infants was characteristic, but different from that in childhood. They produced marked disturbance of nutrition, rickets and deformities of the chest. They were the most important cause of recurrent "colds in the head" and chronic "snuffles." They often caused an irritating cough without physical signs, and were frequently accompanied by attacks of catarrhal laryngitis and spasmodic croup. Restlessness and sleeplessness were often explained by the presence of adenoids. Otitis media in infants was almost invariably caused by adenoids. Various illustrative cases were cited.

Dr. G. L. Richards of Fall River, Mass., called attention to the low position of the open end of the Eustachian tube in young infants and to the fact that a very small amount of adenoid tissue would cause trouble, leading ultimately to otitis media and further to mastoditis.

Dr. T. W. Kilmer of New York City and others continued the discussion, which was closed by Dr. Morse.

Prophylaxis in Cerebrospinal Meningitis.—Dr. A. Seibert of New York City read this paper, in which he advocated the disinfection of the nasopharynx in all persons coming in contact with meningitis patients by means of a 50 per cent. resorcin-alcohol solution, applied with absorbent cotton. He was not satisfied with his results until a bacteriological report on the efficiency of the method had been made. He presented a chart giving the finding of this bacteriological investigation. Recent epidemics had shown that this disease is transmitted by persons harboring the meningococcus in the catarrhal mucosa of the nasopharynx.

Dr. F. S. Churchill of Chicago, Dr. Alfred Hand, Jr., of Philadelphia; Dr. A. W. Fairbanks of Boston; Dr. Louis C. Ager of Brooklyn, N. Y., and others engaged in the further discussion, which was closed by Dr. Seibert.

Empyema in Children.—Dr. Melvin M. Franklin of Philadelphia emphasized, in this paper, the importance of early diagnosis. Exploratory puncture aided in this. He recommended incision in children under six years of age; in older cases resection was to be recommended. The frequency of the nonrecognition was a cause of death otherwise ascribed to pneumonia. He emphasized the value of the aspiration syringe as a positive aid in diagnosis, and of immediate surgical intervention.

Dr. W. C. Hallopeter of Philadelphia called attention to the importance of having the transverse colon empty when making an examination of a case of suspected empyema. It was of the utmost importance that effusion be recognized early.

Dr. H. L. Lowenburg of Philadelphia spoke of the unsatisfactory results of physical examination in these cases. Signs in the chest were not always positive. In large effusions very little was gotten from percussion. The reso-

nance which was obtained posteriorly and high up, close to the vertebral column, was important, and flatness in one axilla was almost pathognomonic. Palpation gave little information. Auscultation gave the best results. A case which would recover as a result of simple puncture would get well anyhow.

Dr. A. C. Cotton of Chicago recalled a number of cases in which he had reason to believe that a cure had resulted from lumbar puncture. The statement that the presence of pus always pointed to surgical interference did not always hold true. When the aspirating needle showed pneumococcus pus, pure culture, one need not be in a hurry to operate; if it showed streptococcic pus, operation was required at once. He still believed that it was not advantageous to admit air into the pleural cavity.

Dr. A. H. Wentworth of Boston, Mass., advocated immediate surgical treatment in the event of empyema, regardless of the nature of the bacteria found.

Dr. G. R. Pisek of New York City suggested that if empyema were always regarded as an abscess no one would hesitate to advise operation. If thorough drainage be instituted convalescence was very rapid.

Dr. A. Seibert of New York City recalled two cases of infants in whom he had resected a rib with satisfactory results.

The discussion was continued by Dr. A. W. Fairbanks of Boston, Mass; Dr. Thomas D. Parke of Birmingham, Ala., and others, and closed by Dr. Franklin.

Urinary Infection in Children.—Dr. Isaac A. Abt of Chicago read this paper. He called attention to the relative frequeny of cystitis and pyelitis in young children. The colon bacillus was the organism most frequently found, though the germs of typhoid fever, tuberculosis, and gonorrhea, and the pyogenic micrococci might produce the disease. Infants who were suffering from persistent temperature for a succession of days should in every case have the benefit of a urinary analysis, both chemical and microscopic. The symptoms of the disease, the findings of urinary examination, the differentiation of cystitis and pyelitis, the complications, prognosis, and treatment were detailed in the paper.

Dr. Cotton, Dr. Graham, Dr. Morse and others discussed the paper, and Dr. Abt closed the discussion.

SECTION ON PRACTICE OF MEDICINE.

Wednesday, June 5—Second Day.

Dr. Thomas D. Coleman, Augusta, Ga., Chairman.

The Abdominal Symptoms of Thoracic Disease.—Dr. Allen A. Jones of Buffalo read this paper. He said that acute pleuritis was sometimes accompanied by pain referred to the hypochondriac region of the affected side, and a peculiarity of the pain was its constancy. It was not merely felt upon deep breathing, nor more severely upon inspiration, as was so commonly the case with pleuritic pain. The abdominal pain that was present in some cases of lobar pneumonia was striking in its deceptive characteristics. Not only might the pain of lobar pneumonia be felt in the epigastrium or hypochondrium, but in rare instances it might be present in the inguinal region. If in the right inguinal region the disease might resemble appendicitis so closely as to render the diagnosis difficult. Among the more acute diseases of the lungs or pleura that brought out the point in his paper, none showed better than empyema. This might give rise to symptoms of an acute inflammatory or suppurative condition of a part below the diaphragm. The explanation of the transference of pain to the abdomen in thoracic disease was clear when they recalled the anatomy of the six lower intercostal nerves. Abdominal tympanites constituted one of the annoying symptoms of the disease. A light ice-bag over the epigastrium might impart tone to the abdominal sympathetics. In regard to abdominal symptoms in cardiac disease, one of the most common was epigastric pain resulting from myocardial disease. It was frequently seen in angina pectoris. The patient complained of flatus. It was to be noted that the stomach symptoms did not yield to digestants, but under the effects of iodides and nitroglycerin. Doubtless aortitis was the fundamental fault in not a few patients, as the pain caused by thoracic aortitis might be felt in the epigastrium. An important factor existed also in the dilated and over-distended superior mesenteric vein.

Dr. C. F. Hoover of Cleveland said that this subject was an interesting one, and, in looking over the literature in the Surgeon-General's library, he found mention of reflex pain in thoracic disease made by a Frenchman as far back as 1858. In considering these cases he thought that the phrenic nerve was involved, and that there were three points of tenderness which were of great importance in differentiating between intrathoracic and intraabdominal disease, (a) along the phrenic trunk, between the two heads of the sternoclavicular muscle, (b) just above and external to the umbilicus, (c) the left intercostal space external to the border of the erector spinal muscle.

Dr. Stengel of Philadelphia spoke of a case of pneumonia being operated upon for appendicitis. He said that pain in the abdomen was more frequently seen in children. Extreme tympanites occurred more frequently in pneumonia with diaphragmatic pleurisy. In these cases probably the splanchnic nerves were involved, as they passed through the diaphragm.

Dr. Alexander Lambert of New York said that the paper of Dr. Jones was a timely one, and he referred to cases mistaken for appendicitis. He said that when the pain was due to pleurisy or pneumonia there was an appreciable time between inspiration and expiration when the rectus muscle relaxed. When it was not relaxed it was difficult to distinguish between pleuritic or other involvement.

Dr. W. S. Thayer of Baltimore referred to a very nervous patient, who sent for his physician at any time, day or night. He complained of excruciating pain in the chest at the third intercostal space. Morphine was given several times during the night. The pain was very indefinite. The patient said he was going to die. In a few days the patient went into a state of collapse. There was a marked leucocytosis of 20,000 and the patient gave a clinical picture of a perforative peritonitis. Dr. Halsted operated and found the colon enormously distended with gas. Two days later the patient died. The autopsy showed a large thoracic dissecting aneurysm.

Dr. Neilson of Milwaukee referred to a lady whose symptoms were similar to those described by Dr. Thayer. She complained of pain over the sternum and stomach. Several diagnoses had been made. He called it aortitis, and three weeks later the patient was in a comatose condition and hemiplegic.

Cardiac and Vascular Accompaniments of Diabetes Mellitus.—Dr. Arthur R. Elliott of Chicago presented this paper. He considered his clinical observations treating particularly of the blood pressure. In many of the cases the condition of the heart was normal. Out of twenty five cases of diabetes, in 17 per cent. (average) the heart was enlarged. In a few cases renal changes, hyaline degeneration, and chronic nephritis were present. The myocardial changes were mostly fatty, together with brown atrophy. The state of the circulation was a very important one. One hundred and fifty observations were made on this series of cases; thirteen were males, twelve females, and of all ages. The average blood pressure was 127 mm. The age was the most important factor in influencing the type of diabetes. It was less severe and progressive in the stout and elderly than in the young. Weight exerted a

marked influence in determining the blood pressure. Acid intoxication (diaceturia) was observed in nine cases. Albuminuria associated with diabetes, when due to chronic nephritis or renal sclerosis, showed increased pressure values, although toxic albuminuria exerted no such influence. There was nothing to show that the myocardial and vascular degenerations of the chronic types of diabetes were essential to that disease. There was no such thing as the "diabetic heart." Such complications were only factors in increased arterial sclerosis. Obesity and gout generally preceded cardiovascular degeneration.

Dr. H. S. Stark of New York said that the efforts to establish a relationship between cardiac and muscular disease to diabetes had failed. He believed that diabetes was not a pathological disease *per se*, but that it was an overactivity of an organ which produced not only renal, but circulatory disturbances.

Dr. Heinrich Stern of New York City said that he had studied diabetes for a number of years, and that he had never found any great blood pressure. As to acetone, like cardiac and vascular condition, all were found in the course of the disease, and were not its causes.

Dr. Elliott closed the discussion.

The Venous Pulse and Some of Its Applications.—Dr. L. G. Grosh of Toledo and Dr. Arthur R. Cushny of London, England, presented this communication. They spoke of the research work of Mackenzie and of the importance of considering cardiac activity from the standpoint of its physiological properties of rhythmicity, excitability, contractibility, conductivity, and tonicity. In a number of experiments the venous pulse taken before and after opening the thorax was found unchanged. In the jugular tracing, as a rule, a series of elevations separated by deep depressions were seen. One of the waves corresponded to the auricular contraction. Tracings from the jugular veins of dogs, as compared with tracings procured from the pulsations in the neck of man, were shown. Vagus stimulation arrested the auricular contraction completely, while the ventricle was aroused to contraction by a series of shocks. This was of interest because of the action of drugs on the auricles or ventricles. It was thought that much attention might be directed to the form of the auricular wave in the jugular pulse, that much information as to the state of the heart might be derived from this source, as had occurred from the study of its time relations.

Dr. George Dock of Ann Arbor said that it was only a few years ago that the heart was looked on simply as a contracting muscle. In the last eight years much had been written about Stokes-Adams disease. The heart was certainly a complicated organ, and the fibers of His played an important part in irregular cardiac cases. Much of this advance had been due to experimental physiological investigation.

Dr. Hirschfelder of Baltimore spoke of the interrupted "sea- wave" and of the different interpretations of it. Whenever the tricuspid valve opened there was a fall in the curve. Tricuspid insufficiency meant cardiac breakdown. The nature and origin of this irregularity was important. If it could be proven that it originated in the ventricle then digitalis could be used.

Dr. George Norris of Philadelphia spoke of the necessity of studying heart diseases by recent methods and of the need of the cardiosphygmograph.

Dr. Grosh closed the discussion. He spoke of the importance in measuring the auricular activity and of *Pulsus irregulosis* in "heart block." In conditions like general sepsis there was a marked irregular ventricular contraction.

The Tone of the Respiratory Center in Tabes Dorsalis.—Dr. C. F. Hoover of Cleveland presented this paper. He spoke of apnea and its relation to the preataxic period of tabes dorsalis and reported three cases, all exhibiting unquestionable signs of tabes, which developed apnea. Two patients had each two attacks of apnea, which followed in every instance a hypodermic injection of a small dose of morphine. In these cases there was a vasomotor relaxation of both the arteries and veins, but there was an apparent disproportion between the suspended respiration and the cyanosis. He was unable to find any reference to cases of apnea with tabes dorsalis in the library of the Surgeon-General. A fourth case with chronic aortitis, diffuse arterial sclerosis, and chronic nephritis had attacks of apnea whenever he fell asleep, and was then awakened with air hunger and hyperapnea. Sometimes the apnea lasted for several seconds before respiration became automatic.

Dr. A. A. Jones of Buffalo said that in speaking of respiratory failure in tabes he had seen a case of a middle-aged man who was addicted to the use of morphine. He drank whiskey and smoked. Suddenly he had an attack of apnea which lasted two hours. Camphor and strychnine were given and he recovered. In a day or two he had another attack, not breathing for three minutes. He responded to active stimulation.

Dr. Hoover, in closing, said that tabes dorsalis had been overlooked in these cases of apnea. He suggested in treating these cases that the patients should be inverted as one resuscitates the new-born child. Recently he had tried this treatment in a case of tachycardia. The pulse was 244 per minute, and with this treatment, together with deep inspirations, pulse rate was reduced one-half.

Physiological and Clinical Observations upon the Alimentary Canal by Means of the Roentgen Rays.—Dr. G. E. Pfahler of Philadelphia read this paper, and concluded as follows: (1) The roentgenoscopic and the roentgenographic method of examination each had its advantages. Roentgenoscopically, they studied the motion of the viscera, while roentgenographically they recorded the finer details. (2) The roentgenoscopic method was a dangerous procedure to the operator unless he was properly protected, and even then the amount of exposure should be reduced to the minimum. (3) The bismuth-kefir mixture (bismuth subnitrate 1 ounce, and kefir 1 pint) was the best medium to render the alimentary canal opaque, because it was easily digested, held the bismuth in suspension almost perfectly, and because it tended to counterbalance the constipating effect of the bismuth. (4) The Roentgen examination would demonstrate obstructive disease anywhere along the alimentary canal, and much information as to the character of these obstructions could be obtained. (5) The esophagus could best be studied by oblique illumination. Peristaltic movement could be seen carrying the food downward. Solids were likely to lodge for a short time at the level of the arch of the aorta, but passed quickly through the cardiac orifice. A swallow of liquid, on the other hand, lodged in the lower third of the esophagus for a period of about seven seconds before all of it passed into the stomach. It was probably detained at this point by the sphincteric action of the cardiac orifice which only allowed the liquid to pass in slowly. The capsule dropped through probably before the sphincter had had a chance to act. (6) The Roentgen method of examination was probably most useful in the study of the stomach. By this means the size, form, position, its motility, its mobility, and the effects of massage, respiratory movements, abdominal contractions, peristaltic action, and the effects of food could best be studied. (7) The normal stomach was slightly oblique in the standing posture. Approximately, its upper two-thirds was vertical, and its lower third was nearly horizontal. Essentially the pylorus must be on a level with the lower pole. Its lower pole was usually an inch above the umbilicus. The stomach was normally a very movable organ, as was shown by the fact that about two-thirds of it crosses the median line when the patient lies upon the right side, as was demonstrated by one of my roentgenographs. When distended with food, the pylorus was carried downward

and to the right. (8) The respiratory movements caused the upper pole to move to the extent of the movements of the diaphragm. The lower pole moved from one-half to one inch between forced inspiration and forced expiration. With deep inspiration the fundus was increased in diameter and the pylorus moved to the right. (9) The contraction of the abdominal muscles would cause the stomach to rise from one to five or six inches, depending upon their strength and the degree of ptosis; however, in extreme gastroptosis the stomach might lie below the elevating force of these contractions, as he had observed in one case. (10) These abdominal contractions might be used to mix the food in the stomach. If a person ate an ordinary meal and then took an ounce of bismuth it could be thoroughly mixed with the food in a minute or two, and then studied by the rays. (11) These abdominal contractions seemed to stimulate the peristaltic movements. Therefore, they assisted in emptying the stomach by raising it so that it served as a reservoir, by removing the obstruction which was caused by the kink in the duodenum, and by stimulating the peristaltic movements. (12) These contractions caused not only the stomach to rise, but the entire abdominal viscera. The lower portion of the chest expanded and the diaphragm rose. (13) The reverse conditions developed when the abdominal wall was relaxed. In other words, the tendency in a normal person to splanchnoptosis might be seen when these walls were relaxed. (14) Therefore he believed, first, that the abdominal wall was the main support of the abdominal viscera; second, that the elongated chest might be secondary to the descent of the viscera, and third, that the most important element in the treatment of the gastroptosis and the phthisical chest was the strengthening and toning of the abdominal wall and the correction of posture. (15) In severe grades of gastroptosis, the portion of the stomach that rested below the level of the pylorus served as a retention sack, but the point of actual obstruction to the passage of the food was a kink formed in the duodenum about one inch from the pylorus, where it was firmly attached to the spinal column. The food lying between this kink and the pylorus was usually separated from the food in the stomach by a sharp line. This would serve as a differential point between this form of obstruction and that caused by carcinoma. (16) The Roentgen rays were of value in collecting additional information in the diagnosis of carcinoma of the stomach, but should not be depended upon to make an absolute diagnosis. (17) When a supporting bandage was applied in the treatment of gastroptosis there should if possible be a Roentgen examination to determine whether it was properly applied and whether it was serving its purpose. (18) A moderate gastroptosis might be present and not produce symptoms as long as the motility of the stomach was good. If, however, the motility of the stomach be disturbed by some intercurrent cause, then symptoms would be produced.

Dr. Steele of Philadelphia spoke of the morbid physiology of the stomach and of the great clinical aid the *x*-ray had been, particularly in gastroptosis. It was of great usefulness in those minor cases of atony and insufficiency of the stomach. Formerly it was thought that all stomach diseases were due to faulty secretion. At present one had no reliable method of determining the motor condition. The normal gastric activity and mixing of foods, together with opening of the pylorus, were now studied. Functional disturbances did not belong to gastroptosis, for they were also acquired. There seemed to be some ground for holding that these cases might be of congenital origin. There were certain cases that showed gastroptosis by the *x*-rays without giving rise to any symptoms, and others had very marked symptoms. The best form of treatment was that which improved the general nervous condition.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held May 10, 1907.

First Vice-President, Dr. Wendell C. Phillips, in the Chair.

Sins of Omission and Sins of Commission in Gynecology.—Dr. G. H. Balleray read this paper. He said that those who engaged in the practice of gynecology had a great number of sins to answer for; the sins of omission were credited to the general practitioner, and the sins of commission to the specialist. The sins of omission began in the lying-in room, and many of the diseases that the child-bearing woman suffered from were due to the negligence of the medical attendant during the two or three weeks immediately following delivery. Lesions of the genital tract were overlooked, the vagina was not douched, and the patient was allowed to leave the bed about the ninth day and at once assumed the upright position and generally returned to her usual occupation, besides enclosing her chest and abdomen with a corset. As a result the vaginal outlet, owing to possibly a nonunion of a perineal wound, was large; the vagina had not undergone involution; the uterus was large and heavy, and the cervix lacerated. When on her feet the uterus sagged down, and the uterine ligaments, having not yet recovered their tonicity, offered but little resistance to its descent. In addition the tight corset and the constipated condition brought about complete procidentia of the uterus. If flexion was produced, it induced venous stasis and interfered with the process of involution, led to catarrhal endometritis, salpingitis, and chronic invalidism. The medical attendant had done nothing to obviate this deplorable condition. Had he repaired the lacerations of perineum and vagina, kept the woman in the recumbent posture for about four weeks, having during this time administered three large and hot vaginal douches daily, the patient might have assumed the erect posture and engaged in her ordinary occupations without detriment. Dr. Balleray believed that all of the recent lacerations of the cervix, or nearly all, would heal spontaneously, if the patient retained the recumbent posture for a month and the vagina was kept thoroughly clean. Primary suturing of a lacerated perineum had proved a very successful operation and it should be practised in nearly every case. Some authors had stated that in all primiparæ the cervix was more or less lacerated; if this statement was true he thought it to be a sad commentary on their obstetric skill, or the degeneration of tissue, resulting from civilization. After the patient was up and about, she should wear the weight of her skirts suspended from the shoulders. No corset should be worn. The period immediately following delivery was not the one in which the women should practise calisthenics. He could not too strongly insist upon the fact that in the treatment of recent lacerations, the results of labor, rest, and cleanliness were of the greatest importance. Cancer of the cervix, which constituted fully 90 per cent. of all forms of cancer of the uterus, never occurred except in those cases in which some form of traumatism had been applied to the cervix. He did not believe that there was a well authenticated case of cancer of the truly virginal cervix on record. Neglected lacerations of the cervix were responsible for the occurrence of cancer of that portion of the uterus. The physician should examine every woman he had attended in labor to ascertain if she was suffering from any lesion of the genital canal. It was only necessary for the profession to be imbued with the necessity of such an examination in order to make it popular. One of the greatest difficulties in carrying out this in private practice was the ill-conceived *amour propre* of the attending physician who was apt to feel that the revelation that a lesion of the genitals existed would be regarded by

the patient and her friends as evidence of lack of *savoir faire* on his part. When the operative gynecologist was consulted in cases of this kind, he should explain to the patients that the lesions of the genital tract sometimes occurred in childbirth even under the most skilful treatment. As a factor in the causation of pelvic disease in women, gonorrheal infection occupied a prominent position and at least 40 per cent. of all women suffering from diseases peculiar to their sex owed their invalidism to the baneful influence of the gonococcus. That nearly all such women could be promptly cured in the early stages of the disease, if properly treated, did not admit of a doubt. If the time ever came when the family physician would take the trouble to examine into the nature of every case of purulent discharge, and would resort promptly to efficient means of treatment, they would then meet with very few of those cases of destructive inflammatory lesions of the female pelvic organs. It was to be hoped that the time would soon come when the family physician would familiarize himself with the means of diagnosis in the incipient cases of cancer. Dr. Balleray said that the sins of commission were the sins of the operative gynecologist. At times he was thoroughly honest in his conviction that he was doing right, but in many cases mutilating operations were performed which were unjustifiable, and had absolutely no *raison d'être* except in the love of *éclat,* and the undying fondness which some men cherished for operative gynecology.

Dr. Edward A. Ayers said that what he would have to say would be limited to obstetrical errors. Obstetrical work had in many instances been simply an annex to gynecological work, and being a poor paying field had not been even fairly mastered by its followers in the general class of practitioners. He was inclined to think that the average results obtained in obstetrical work were lower than in any other branch of medicine or surgery. The most effective service a physician could render a pregnant woman lay in a thorough antepartum diagnosis. Given an abnormality which might be expected to vary the physiological rule, foreknowledge of its existence would enable the obstetrician to minimize its evil effect. Second-class skill would get better results applied in advance than first-class skill applied in emergency. The chief dangers that might develop in pregnant patients were from placenta prævia, eclampsia, malpositions, pelvic insufficiency, and infection. In placenta previa a good prognosis was greatly favored by full preparation for either vaginal or cesarean delivery. Location of the placenta during pregnancy was usually impossible when normally implanted, but central cases would generally cause sufficient enlargment of the os and lower segment softening, with possible direct palpation of the placenta at the internal os, to afford a diagnosis after the seventh month. In practice most cases were unfortunately announced by hemorrhage. Eclampsia threatened by signs well known in urine and nervous system in over 90 per cent. of cases, and in the majority of cases these symptoms could be expelled or delivery induced. The fetus had no established attitude but would gradually take the most comfortable position, that of least pressure and constraint, and ordinarily this was with back forward to fit the maternal lumbar curve and head down which was less neck flexing than the reverse. Whatever position they might find at the seventh month, if they found the pelvic inlet too small to allow head and cervix descent later they should anticipate a shoulder, transverse, or breech presentation. If they found a sagging abdominal wall and uterus with long transverse and short axial diameters, a face, shoulder, or transverse presentation should be anticipated. This sagging, if not correctable during pregnancy by corset support, should lead us to prompt attendance at labor and adjustment of the presentation. Pelvic insufficiency which occurred in about 13 per cent. of all cases required skill in diagnosis. Anyone could recognize a two and one-half-inch conjugata vera after a few examinations of pregnant women, but it required experience to foretell successful forceps delivery in borderland pelvic insufficiency. A full preliminary diagnosis that would give the expert more than a peep into the future removed most dangers of infection. There were many other important details worthy of mention, but those just cited covered most of the field of our "sins of omission" in obstetrics. A study of vital statistics impressed one with the thought that a peculiarly vitalized responsibility was fast falling on obstetrical service. This was due to our declining birth rate, which if it were not for immigration would be on a par with that of France. The decline in the number of children per family was not due to obstetrical shortcomings, and could not be removed by preaching against reproductive restriction, but it lay within the power of the obstetrician to reduce fetal and early infant mortality. With a still-birth mortality of 6 or 7 per cent. added to an infant mortality of 10 per cent. during the first month and 15 per cent. additional by the end of the first year, or one reproductive failure to two successes, one could readily see how large an impress could be made on declining birth rates by improving obstetrical work. As to the "sins of commission," he said that an obstetrical meddler might be defined as one who assisted nature at the wrong time. To give ergot at any time, or to rupture the membranes without knowing how or when labor should be terminated; to institute artificial dilation of the cervix for reasons of impatience, or misinterpretation of preliminary for strenuous contractions; to apply forceps traction with greater regard for securing fetal advance than for cervical endurance; to make any greater compression of the fetal head with forceps blades than blade slipping problems required; to needlessly use forceps; to allow a womb and its voluntary reinforcements to decide speed rates when fetal heads are coming around the curve; to keep the knees flexed against the abdomen when the head crowns the perineum; to try to preserve perineal integrity without seeing the parts; not to know that a uterus is exhausted and to allow it to bleed first and each time make compression afterwards; to postpone perineal stitching when it could be done at the time; to douch an aseptic vagina; to keep a postpartum patient on her back when uterine circulation is stagnant, or to sit her up when it will increase lochial flow; to allow quiescent breasts to fill up and cake; to omit treating nipples as open wounds; to curette a clean uterus, or not to curette away placental remnants; to allow a milk-full mother to avoid suckling her child without protest are a few things that to omit is to fall short of our opportunities for good. Judgment, art, diagnosis, but the greatest of these is diagnosis, early, accurate, and full.

Dr. William M. Polk said that proof was to be had that the doctor was in error when he stated that cancer of the virginal cervix had never occurred. There were other causative factors than trauma of the cervix. Then the statement that the patient should remain in bed one month after delivery was not exactly correct; here the personal equation came in; each case should be treated on its individual merits. All should agree with Dr. Ayers that an antepartum diagnosis was very important. The systematic scraping of the interior of the uterus recently pregnant was a villainous procedure.

Dr. Edwin B. Cragin believed it would be better to speak of the sins of omission in obstetrics and the sins of commission in gynecology. In looking over the work at the Sloan Maternity they had been led to get the patients up a little early rather than to keep them in bed beyond the normal time of nine or ten days, for the reason they found that retroversions were extremely common. If they sent these patients out in two weeks, which was their rule, many would go with retroversions

if most of the time was spent in bed. At present all sat up in bed as early as the fifth day, and were out of bed on the ninth day, and it was observed that posterior displacements of the uterus were less common than when they remained in bed longer. With regard to healing of the cervix, he believed it was better if the patient was allowed to get up so that the parturient canal would drain and keep clean; this was better than the use of douches with their possible risk of infection. As Dr. Polk had stated, each case must be decided upon its merits. With regard to repair of lacerations of the cervix, Dr. Cragin said he was afraid to teach students to make repairs of these immediately after labor. If it was an operative case, with assistants, full anesthesia, with a good light, repair of these cases immediately after labor should be done if the tear was extensive. But without proper assistants, with poor light, to expos ethat cervix to see if it was lacerated, and then to repair it, was, he thought, accompanied by danger and students should not be taught to do it. One of the greatest sins in gynecology had to deal with the repair of a little bit of a laceration of the cervix. If a woman had a little nick in her cervix, with the squamous epithelium covering it nicely, with no subinvolution of the uterus, with no increase in menstruation or cervical catarrh, Dr. Cragin's practice was to leave it alone. These women did better without having their cervical canals narrowed and drainage interfered with.

Dr. J. Riddle Goffe said he did not fancy the title of Dr. Balleray's paper because he had not brought out the sins of omission of the gynecologist, but the sins of commission of the obstetrician. The importance of involution of the uterus should not only be emphasized, but the involution of the ligaments, which were in truth prolongations of uterine tissue, should also be emphasized. These ligaments hypertrophied as the uterus hypertrophied, and involuted as the uterus involuted. Dr. Goffe did not believe that, when the abdomen was opened for any purpose, the healthy or normal appendix should be removed. No tissue or organ that did not offend should be removed. The removal of a normal appendix was an added danger. He wished to call a halt in this practice of removing healthy appendages.

Dr. Brooks H. Wells said that if the labor was managed with ordinary skill and care as to the maintenance of asepsis, if the attendant refrained from unnecessary vaginal examinations or manipulations of the cervix and kept the external parts clean during the puerperium by instructing the nurse as to the manner and intervals of washing and the frequency with which the vulvar pads were to be changed, he would not often have fetid lochia or sepsis, and the average patient he believed would be better off without the vaginal douche. Tears of the perineum and vagina should be looked for at the end of labor, and sutured if found, except when the parts were so contused and edematous that operation seemed to be out of the question. Tears of the cervix did not require immediate suture unless so deep as to cause persistent hemorrhage. When the patient had suffered deep perineal tears she should be kept off her feet until the laceration was healed; otherwise she was better if allowed to sit up in bed or on a commode during defecation and micturition, as this posture effectually freed the vagina from clots and lochia. Where retroversion and prolapse was found after labor Dr. Wells did not believe the attendant should be often blamed for it, or that it was caused by too tight a binder or too early rising from bed. In the great majority of the cases the displacement was present before. The causes of deep laceration of the cervix he divided into two groups, the traumatic or instrumental or manual delivery and chronic endometritis, or more properly, metritis. The tear in a healthy cervix from external force would often heal, especially when favored by asepsis and rest; the tear from chronic disease was not apt to heal. Gonorrhea when limited to the vulva and vagina, if rigorously attacked, could be promptly cured, but such limitations were rarely met with. The statement made by Dr. Balleray that "neglected laceration of the cervix was responsible for the occurrence of cancer of that portion of the uterus," and that "where there is no traumatism there is no cancer," was true to only a very limited extent. He had personally seen three cases of cancer in undoubtedly nulliparous cervices; two of the women were virgins and the third had only had sexual intercourse for a short time. Cervical injuries should not be overestimated in their influence in the causation of cancer.

Dr. Louis J. Ladinski believed that if a lacerated cervix had not healed within one week it would not heal at all whether the patient was in bed or not. Therefore, he could not agree with Dr. Balleray that keeping the patient in bed for weeks would favor the healing of a torn cervix, nor did he agree that vaginal douches would tend to promote union; repeated douching, on the contrary, would only interfere with the adaptation of the lacerated surfaces of the cervix. With regard to immediate trachelorrhapy, this should not be attempted unless under the most favorable conditions as regarded asepsis, equipment, and assistants. It was different, however, with lacerations of the perineum if the work was done by those who had sufficient experience in this line of work. Dr. Ladinski said that if lacerations of the cervix was a factor in the production of carcinoma of the cervix even to a slight degree, he would certainly have seen a much larger number of cases than he had. Of the few cases seen by him, two were observed in positively nulliparous women, one of which was seen with him by the late Dr. Mundé. With the exception of the slight tears mentioned by Dr. Cragin he was in favor of repairing every cervix that was lacerated, hypertrophied, or everted. With regard to gonorrheal infection, he said that frequently without any external evidences they found that not only the endometrium was the seat of infection, but the tubes, and even the peritoneal cavity had also been involved. He related a case that showed that the gonococci might infect the tubes, and the pus leak into the peritoneal cavity producing a general peritonitis, without any external signs whatever. He closed his discussion by stating that it required no emphasis on his part to say that there was absolutely no justification in removing uteri containing a little nodule, or a little fibroid, or an absolutely or nearly normal ovary.

Dr. Robert T. Morris believed that an unnecessary death rate would follow the removal of normal appendices. When they opened the lumen of a normal appendix, they opened a direct spigot of infection for the peritoneum, at a time when the peritoneum was not prepared for self-protection. When there was a real infection of the appendix, be it ever so slight, a protective leucocytosis was called out rapidly, and then they could do a great deal with the appendix safely. With regard to primary trachelorrhaphy, if one closed a tear in the cervix immediately after delivery, and included a little nidus of infection in the depths of the wound, he placed it out of the current of protection from the lochia; this lochia was the patient's protection, loaded as it was with nucleins and other elements prepared by nature. With regard to repairing old scars of the cervix, he asked what had become of Emmet's sign. If they pressed the finger or probe against a cervix scar, and there followed an immediate reflex to the lumbar plexuses, or if local pain was complained of, then there was good presumptive evidence that the scar was a persistent source of disturbance, and that it had entrapped nerve filaments, and required surgical repair.

Dr. Charles L. Dana said that a large per cent. of backward children, imbeciles and idiots was the result of some defect in the condition of the mother during the parturient process; therefore, it became necessary not

only to examine the urine, measure the pelvic diameters, etc., but they should see if there was anything in the life of the parent that might influence the condition of the child. An interesting point to him was that the bilateral arm palsies, epileptics, cerebral hemorrhages, hemiplegias, defective mental development, etc., were, in many cases, due to conditions which might be relieved by surgical interference. When a child was born and had general convulsions on the second, third, fourth, or fifth day, the cause was probably meningeal hemorrhage, and Cushing advised opening the skull, and washing the hemorrhage out, claiming that this would bring the child to its normal condition. In regard to the work of the gynecologist, Dr. Dana said that he remembered the time when all sought him with the hope that he could relieve the women of their neuroses or psychoses: they were choked with attention.

Finally the neurologists had to take the defensive, and assumed the attitude of open hostility against the gynecologists. They were operating upon uteri, curetting, sewing up tears, etc., but they were not curing the nervous manifestations. To-day the attitude had been changed. He had often asked neurotic patients what had been the result of operations, and he had come to the conclusion that, in a large proportion of the cases of so-called psychoneuroses, operations for the relief of subinvolution, tears, the removal of scars, did not really do any good, but often did harm. In the psychoneuroses group of patients, those with obsessions, operations were generally unsafe; they might cure them of back or pelvic pains, but they got up something else. In the hypochrondiacal group of patients, operation might relieve the local condition, but not the psychic condition. In the simple neurasthenic group of cases, where the patients were made ill by irritations in the pelvis, operations were extremely helpful.

Dr. Edward A. Ayers said that everywhere, throughout the world, the cases of epilepsy averaged one to six per thousand. The statistics of the English lying-in institutions showed that where the mothers, during the pregnant state, were accustomed to overindulgence in alcohol, the per cent. of epileptics was from 40 to 50 per thousand among the infants born. It was also shown that, when the mother was intoxicated, the fetus *in utero* might absorb seven-eighths of an ounce of alcohol. This evidence showed that certain forms of nervous maladies had a direct relationship to the condition of the mother.

Dr. George H. Balleray said that after abortions or miscarriages there could be no objection to passing the finger, or the hand if necessary, into the uterus to remove secundines. The curette he believed was not justified, and should be condemned in the hands of the general practitioner. In regard to cancer of the cervix, he said he had never seen a case in a virgin uterus. When the abdomen was opened for pelvic conditions and the appendix was normal, he thought it meddlesome surgery to attempt its removal. He believed in keeping the patients with extensive laceration of the cervix, of the perineum, or of the vagina, but especially in the former, in bed. He employed douches in these cases, because, as in general surgery, wounds would not heal unless kept clean. With regard to the gonorrheal cases, the women should be kept as quiet as possible and the vagina should be thoroughly cleansed. Sulphuric acid 1-30, or bichloride 1-4000 should be given, not less than two gallons, and as hot as 110° F. If this treatment was carried out every day, with the woman kept in the recumbent posture, one could get control of the disease in two weeks. The tendency was for gonorrhea to travel up: therefore, the treatment should be early and pursued energetically.

Locomotor Ataxia. A New Theory as to Its Cause.—Dr. L. N. Denslow presented this communication. (See page 985.)

Medical Items.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 7, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS.
California, San Francisco	May 18–25	1	..
Illinois, Chicago	May 25–June 1	10	..
Moline	May 19–26	1	..
Springfield	May 23–30	1	..
Indiana, Indianapolis	May 12–26	4	..
La Fayette	May 20–27	1	..
Iowa, Davenport	May 17–31	2	..
Kentucky, Louisville	May 23–30	3	..
Louisiana, New Orleans	May 18–25	4	3 imported
Shreveport	May 18–25	1	..
Massachusetts, Lawrence	May 18–25	1	..
Michigan, Detroit	May 25–June 1	10	..
Fenton	To May 25	41	..
Minnesota, Winona	May 4–11	2	..
Mississippi, Natchez	May 18–25	32	..
Missouri, St. Joseph	May 11–25	32	..
St. Louis	May 18–25	1	..
New York, Buffalo	May 18–25	4	..
New York	May 18–25	4	..
Niagara Falls	May 18–25	1	..
North Carolina, Greensboro	May 18–25	2	..
Ohio, Dayton	May 18–25	1	..
Toledo	May 4–18	28	..
South Carolina, Camden	May 18–25	1	..
Tennessee, Nashville	May 18–25	1	..
Virginia, Richmond	May 18–25	2	..
Washington, Spokane	May 18–25	20	..
Tacoma	May 18–25	2	..

SMALLPOX—INSULAR

Philippine Islands, Manila	Apr. 13–20	1	1

SMALLPOX—FOREIGN.

Austria, Trieste	May 4–18	2	..
Brazil, Para	May 11–18	2	4
China, Tientsin	Apr 21–28	1	..
Colombia, Barranquilla	May 11–18	..	1
Cartagena	Apr. 20–May 11	..	Present
France, Paris	Apr 27–May 11	21	6
Germany, General	May 5–11	12	..
Manheim	May 11–18	..	1
Great Britain, Liverpool	May 11–18	1	From vessel
London	May 4–11	1	..
Southampton	May 11–18	.	1
India, Bombay	Apr. 30–May 7	.	1
Calcutta	Apr. 20–27	..	67
Madras	Apr. 20–May 3	..	3
Italy General	May 7–16	15	..
Naples	May 4–18	11	..
Turin	Apr. 28–May 12	3	1
Java, Batavia	Apr. 20–27	5	..
Manchuria, Dalney	Apr 20–27	1	..
Mexico, Aguas Calientes	Apr. 20–27	..	23
	May 11–25	.	33
Mexico	Apr 27–May 4	.	5
Monterey	May 12–19	..	1
Nuevo Laredo	May 11–18	1	1
Sonora	Apr. 6–20	8	..
Portugal, Lisbon	May 1–18	7	..
Russia, Odessa	Apr 28–May 11	11	1
Riga	May 11–18	11	..
St. Petersburg	Apr. 28–May 4	1	..
Spain, Barcelona	May 13–20	..	3
Carthagena	Apr 28–May 4	.	1
Valencia	May 12–19	10	3
Turkey in Asia, Bagdad	Apr. 13–27	.	Present
Bassorah	Apr. 20–May 4	.	"
Constantinople	Apr. 21–28	..	3
	May 4–12	..	1
Venezuela, La Guira	Mar 31–May 25	..	Present
Maracaibo	May 4–12	1	1

YELLOW FEVER.

Brazil, Para	May 11–18	2	1
Cuba, Habana	May 25	1	From San Nicolas
Guatemala, Gualan	May 21	3	1
Venezuela, La Guira	May 4–11	1	1

CHOLERA.

Ceylon, Colombo	Apr. 6–13	1	1
India, Calcutta	Apr. 20–27	..	33
Rangoon	Apr 20–27	..	10

PLAGUE.

Egypt, Alexandria	May 9–16	21	34
Beni Souef Province	May 9–16	19	9
Girgeh Province	May 9–16	30	29
Keneh Province	May 9–16	12	14
Minieh Province	May 9–16	22	30
Samalut Province	May 9–16	15	8
Formosa	Apr. 20–May 4	236	210
India, General	Apr 20–27	87,304	76,711
Bombay	Apr 30–May 7	..	230
Calcutta	Apr. 20–27	..	423
Rangoon	Apr 20–27	..	71
Straits Settlements, Singapore	Apr. 13–20	..	1

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Original Articles.

STERILIZED HORSE SERUM IN SURGERY.

BY RAYMOND PETIT, M.D.,

PARIS.

LATE ADJUNCT CHIEF OF CLINIC TO THE FACULTY OF PARIS.

WHEN isotonic saline solution is injected into the peritoneal cavity there is produced an afflux of a considerable number of polynuclear white blood cells to the spot, and the natural resistance of the serous membrane to any infection is markedly increased. Such is the experimental fact that has been brought to light by the experiments of Issaeff. This author found that in a peritoneum prepared by the injection of isotonic salt solution he could inoculate several lethal doses of the cholera vibrio without there being any bad results, while uninjected animals succumbed to a single dose in twenty-four hours.

At the request of M. Metchnikoff, I have repeated these experiments with various chemotactic substances and with several species of pathogenic microbes. It has been found after several attempts that boiled horse serum is the substance which is of the most use for inducing polynucleosis. Many other substances may be used to produce polynucleosis by chemotaxis, such as physiological salt solution, peptonized bouillon, aleurone, nucleinic acid, and various normal sera; but they do not produce the desired afflux of leucocytes to the same degree nor with identical effects. Aleurone, for example, draws a large number of polynuclear leucocytes, but hungry for grains of aleurone, they gorge themselves and have not the same appetite for phagocytosis with reference to microbes.

The normal sera have seemed to produce the greatest polynucleosis which may be utilized for phagocytosis, and that of the horse is the best, since it is less toxic than that of the cow, and can be made almost entirely inoffensive by heating it in a water bath for two hours, for three consecutive days, at a temperature of 90° C., to destroy the alexin without altering the natural sensibilization.

After having thus produced a polynucleosis in the peritoneum of animals, it has been found possible to inoculate with impunity into the serous membranes a number of lethal doses of cultures of cholera vibrios, typhoid bacilli, *Bacterium coli*, *Staphylococcus pyogenes*, etc.

The results of these experiments led to the attempt to use this method in the treatment of infections in man. The results obtained have been excellent, and since 1900 sterilized horse serum has been employed in suitable cases in private practice, as well as in the Hospital for the Treatment of Industrial Accidents. I have become convinced that we can cure by phagocytosis and that the afflux of polynuclears by means of sterilized horse serum takes place not only in the peritoneum, but in all the serous cavities, in the mucous membranes, and in wounds of all regions. More than a hundred cases can be cited, some of which have already been published, in the *Revue de Gynécologie et de Chirurgie Abdominale*, by Pozzi (July and August, 1906), and in the Bulletin de la Société d'Obstétrique de Paris (February 19, 1906).

The cases treated may be summarized as follows:

1. *Abdominal Surgery.*—The sterilized horse serum has been used as a prophylactic measure in operations of a non-septic character, and as a curative measure in cases characterized by infection. Cases in which it was used as a curative measure include appendicitis with abscess, operated on in the active stage, general peritonitis, and suppurative salpingitis with pelvic peritonitis, and suppurating cholecystitis with pericholecystitis. In all these operations we have made the usual interventions, with the usual aseptic precautions. In all cases of acute appendicitis the appendix has been removed at one sitting. After the operation drainage has been employed and the serous cavity has been lightly packed with gauze impregnated with sterilized horse serum; horse serum has also been poured into the peritoneal cavity through the drainage tube. The dose usually employed was 30 cubic centimeters. On the following day the same dose was repeated, through the drain. Under these conditions the temperature was slightly elevated at first, and then fell to about normal. The character of the pus was at once changed; instead of a serous fluid, a creamy, thick pus appeared, the "laudable pus" of the ancients. The pus before the operation examined under the microscope contained but few elements of defense (leucocytes and polynuclears), with a considerable number of free microbes; after the use of the serum innumerable phagocytes were found gorged with microbes, and few free microbes. Suppuration diminished rapidly, and the case entered at once upon a phase of active granulation, continuing until cicatrization was complete. A case of acute appendicitis with large prerenal and subhepatic abscesses was cured completely in three weeks, with a good cicatrix.

Under the head of prophylaxis the serum was made use of in two ways. In the course of operations for ovarian cysts, epithelioma of the ovaries, abdominal hysterectomy for cancer, and extrauterine pregnancy, ruptured or unruptured, when a fault in the asepsis was feared, or after a prolonged operation with adhesions, the serum was poured into the peritoneal cavity in doses of 30 cubic centimeters. Drainage was instituted and gauze saturated with the serum was left in place, or immediate suture of the entire incision was made. In all the cases thus treated there were no bad results.

In cases of gastroenterostomy or enteroanastomosis a different procedure was employed. The evening before the operation there was injected into the peritoneum 30 cubic centimeters of the serum, a puncture being made with a special trochar, constructed

by Galante, which protects the abdominal organs from injury. Injections made in this manner have never caused any trouble, and the procedure allows an operation on a peritoneum that is protected by a reinforced resistance due to the presence of the polynuclears.

2. *Gynecology.*—Most of the cases under this category are puerperal infections, post-partum or post-abortum, very characteristic, accompanied by high temperature and even the presence of thick false membranes over the cervix, vaginal walls, and vulva. The procedure is as follows: It is first ascertained that the uterus is empty, by removal of placental debris with the curette or of membranes with forceps; the uterus is then cleansed by means of two or three hundred grams of physiological salt solution and swabbing the interior of the uterus and the vagina with a piece of heavy, sterilized gauze on forceps. A piece of sterile gauze is impregnated with the serum and in the center of the folded strip is placed, as if in a pocket, one to three grams of serum evaporated in a vacuum. This pocket is introduced to the fundus of the uterus, placed transversely from one horn to the other, and the remainder of the strip is packed into the uterine and vaginal cavity without making any pressure. This packing is left in for twenty-four hours and renewed daily for three to eight days thereafter. The strips when drawn out are sticky, having taken up a liquid which is thick and gray, like a solution of rubber, of a strong and peculiar odor, extremely rich in polynuclear leucocytes in full phagocytic action.

The temperature after being somewhat elevated for a few hours falls after the first packing. At the same time the false membranes and eschars come away, the wounds granulate actively, and the general condition rapidly improves.

3. *Purulent Pleurisy.*—Two exceptionally grave cases of purulent pleurisy have been treated, one in an infant (staphylococci and streptococci), the other in an adult (staphylococci, streptococci, and anaërobic bacteria) with pulmonary gangrene. In both cases, after resection of ribs with drainage, there was poured into the pleura thirty cubic centimeters of serum each day for several days. Both patients were rapidly cured, and the pus presented the same transformations as have been noted above.

4. *Various Phlegmonous Infections.*—In this group are included severe submaxillary phlegmon, diffuse phlegmons of the limbs and trunk, anthrax, furuncles, tendinous phlegmons, erysipelatous phlegmon, edematous gangrene, septic injuries of the fingers, etc. In all these cases multiple incisions and drainage were made use of: then the serum was poured into the drains and the wounds tamponed with gauze soaked in serum, after powdering them with serum dried into powder. Rapid healing with excellent cicatrices was the result.

5. *Burns.*—Several cases of burns have been treated, those produced by fire as well as by chemical agents (vitriol). In these cases moist compresses were employed of aseptic gauze soaked in serum. Burns of the second degree, dressed after evacuating the serum from the blisters, were cured in one week. In burns of the third and fourth degree with eschars the latter became detached in three or four days and left behind a pink, granulating surface. In one case there were burns of the third and fourth degree on both legs and one arm. At the same time dressings were employed of phenic acid on one leg, horse serum on the other, and sterilized water on the arm. The eschars treated with horse serum separated first; one week later those treated with sterilized water separated, while those on the leg, treated with phenic acid, persisted several days longer. The same rapid separation of the tenacious eschars which form after acid burns was observed. A case of eschars after a trophoneurosis should be added to these cases, which was as happily modified by the treatment as the others.

6. *Repair of Wounds by Second Intention.*—It has been observed that abscesses, granulating wounds, atonic wounds, such as old varicose ulcers, etc., are rapidly modified under moist compresses of horse serum. After the second dressing the wound becomes rosy, and an active granulation invades it; it bleeds easily, and soon begins the formation of new skin.

It is not well to apply this dressing more than once, and if it is continued there is soon produced an arrest of the process of skin formation. A very rapid formation of skin is obtained by using for compresses a solution of bicarbonate of sodium, 1-100. The best of results have been obtained by the use of semi-moist compresses, that is, by employing moist compresses without covering them with impermeable silk tissue.

To sum up, there have been obtained with sterilized horse serum, healing and cicatrization, both excellent and rapid, in severe cases and even in desperate diseases, after failure with the ordinary methods of treatment. These results have caused the systematic trial of this treatment, based on chemotactic and phagocytic properties, as well in hospital as in private practice; and for the last two years the statistics have left nothing to be desired to convince one of the value of the treatment.

The use of sterilized horse serum is but a means to realize a new method, a means that has been made use of because it presented the best vehicle for the use of phagocytosis by formation of polynuclears, a vehicle most favorable to the life of the cells of the organism. As soon as a better method has been arrived at that method should at once be substituted.

What is desired is rather to establish this new method of treatment, based on the discoveries of Metchnikoff, laboratory experiments, and clinical cases, than to exploit the value of sterilized horse serum. This method of surgical treatment of infections is concerned above all with the organism affected; it seeks above all to utilize the resources of the organism itself, to increase to a maximum its natural means of defense, and place the tissues in a condition of offense under the best and most favorable conditions for repair. Differing entirely from antisepsis and asepsis, which always retain their indications, this method seeks not to destroy the microbes in a wound by the aid of chemical agents and caustics, which alter the vitality of the cells; it no longer contents itself with placing a boundary to the approach of the germs; on the contrary it seeks to aid the organism to make its own defense and repair. Aseptic in its application, since the horse serum is sterile and is used on sterilized gauze, this method has for its object to create antisepsis by phagocytosis and to favor the life of the cells by cicatrization.

Ophthalmia Neonatorum.—J. Clifton Edgar advises the preparation of the vagina in all suspected cases by the use of a douche of a mild alkaline solution, followed by one of a 1 to 5,000 bichloride of mercury solution. In addition to this Credé's treatment of the eyes should be carried out, namely: Wash off each eye with a separate boric acid wipe; into each eye instill two drops of a 2 per cent. solution of silver nitrate; in about thirty seconds wash out the excess with saline solution.—*Colorado Medical Journal.*

PYREXIA IN TUBERCULOSIS.*

WHAT IT TELLS US AND HOW IT MAY BE CONTROLLED.

By HENRY P. LOOMIS, M.D.,

NEW YORK.

We have in the thermometer a most important aid in the diagnosis of certain obscure cases of tuberculosis, as well as the greatest help in estimating the character and activity of tubercular processes when once established. It is especially the day temperature by which this indication is given.

The thermometer tells us when our cases are arrested or cured. It aids us in many of our plans of treatment; without it tuberculosis would be a much more difficult disease to handle than it is. It is as a plea for its more general and systematic use that I venture to bring to your attention certain facts in reference to the temperature in pulmonary tuberculosis. One who watches phthisis in hospitals and sanatoriums quickly learns how important the daily temperature curve is, how its variations are to be interpreted, and how it modifies treatment. The practitioner who sees the case only in his office or possibly once a day at the patient's home, and then without a continued temperature record, is at a great disadvantage. Often if the temperature is taken it is found to be normal, and the patient is allowed to go about, although during most of the rest of the twenty-four hours the temperature may range above 102°.

All persons with phthisis can be taught to take their temperature regularly and keep accurate records of the same. This is a plan I have long adopted with patients who are seen only at stated intervals. I have found it of great help—it enables them under directions to regulate their exercise and often change the time of taking the medicine. It may be argued that neurotic individuals would be unfavorably affected by this constant knowledge of the amount of fever they have. I have found this the case only in a very small number of individuals—after the reason of this temperature taking has been explained. If it is not advisable for the patient to take his temperature, some member of the family can do it, if the patient is not sick enough to have a trained nurse. Since I have adopted this plan I have been surprised at the amount of temperature certain cases were running who were going about, often attending to their business, and whom I supposed had no elevation of temperature to amount to anything.

I believe the temperature should be taken at least every four hours from the time of awakening to going to bed, to give us a temperature curve of value. Dr. Brehmer insists that a two-hourly temperature curve is much better. While it is advisable to take the temperature per rectum when it is convenient, this I do not think is absolutely necessary if care is used in taking mouth temperature. I have compared the two curves in a large number of cases, temperature being taken both by the mouth and rectum, and the variation is always constant and usually one-half degree. The fever in phthisis is no doubt dependent upon two causes, one the absorption of the proteins of the tubercle bacilli, the other the absorption of the toxins from the secondary bacteria (mixed infection).

The range of temperature during the progess of active pulmonary tuberculosis is one of the most important indications we have of the specific morbid process. By means of the temperature range we can in some instances suspect tuberculosis and make a tentative diagnosis long before physical signs and symptoms are sufficient to justify such a diagnosis. By the temperature alone almost any case can be diagnosed within three weeks from its onset, for by that time other causes for the rise in temperature, such as typhoid fever, scarlet fever, pus formation, etc., can be excluded. Although the temperature affords a very accurate measure of the activity of pulmonary tuberculosis, it does not follow that when fever is absent we are to conclude that the patient is free from the disease. It does enable us, however, to interpret the physical signs which are present.

Again the range of temperature during the progress of tuberculosis is one of the most important indications which we have of the activity or subsidence of the specific morbid process. It is sometimes a more precise indication of the amount of tuberculosis than either the symptoms or physical signs. In the presence of an active disease the temperature rarely touches or even reaches the normal line. Fluctuations take place in every twenty-four hours, but the lowest temperature recorded is febrile. The higher the day temperature the more active generally is the process and the more unfavorable the prognosis. So long as there is an active temperature range it may safely be assumed that a deposit of tubercles is taking place, even though the physical signs remain for a time unaltered. I might make two exceptions to the above statement.

1. It must be remembered that a large amount of tuberculous deposit, such as is seen in so-called fibroid phthisis, may be present in the lungs without causing any rise of temperature, but this proves that the morbid process is quiescent and localized, and that no systemic poisoning is taking place. In these cases tubercle bacilli may be found in the sputum even in large numbers; but a normal temperature is by no means the rule in fibroid, for there is generally a slight rise reaching to 100° or 101° F., continuing for a time, and then the temperature may become normal for a time only to rise again for a varying period. This alteration may endure for years, slowly undermining the health. In other cases of disease of this type the disease progresses so slowly and the deposit at any one time is so slight that it is insufficient to elevate the temperature to any extent. Towards the close of life in certain chronic cases the temperature not uncommonly becomes normal and so continues until death. These people die from irreparably broken down health or serious secondary disease rather than from the active tuberculosis disease. Although the course of the temperature is a rough indication of the course of the disease, it must be remembered that other factors are at work in the production of pyrexia in addition to the actual tuberculous process.

2. It must not be forgotten that personal idiosyncrasies may affect tempertaure. It is a well known fact that febrile reaction set up by similar agencies varies greatly in different individuals. Some have an unusually high temperature from trivial causes, while others are only slightly affected. These form an exceptional class of cases and in them the temperature chart may be equivocal, and hence must not be too closely regarded if other symptoms point to different conclusions, such as wasting, night sweats, anorexia, diarrhea, etc.

*Read at a meeting of the Section on General Medicine of the New York Academy of Medicine, March 19, 1907.

Although the temperature affords a very precise measure of the activity of a tuberculosis, still, in forming a prognosis, we must be careful not to overestimate it, for other circumstances must be taken into consideration. In many cases, although the temperature is high, the disease after a time declines and the patient recovers. In forming a prognosis in cases with elevation of temperature we must be governed by the effect of absolute rest and treatment. If in spite of this the temperature continues high, the prognosis is bad. If the appetite and power of assimilation, in spite of the temperature, remain good, the prognosis is good. These cases often gain in weight in spite of more or less fever, but usually a temperature precludes a gain in weight in spite of the appetite.

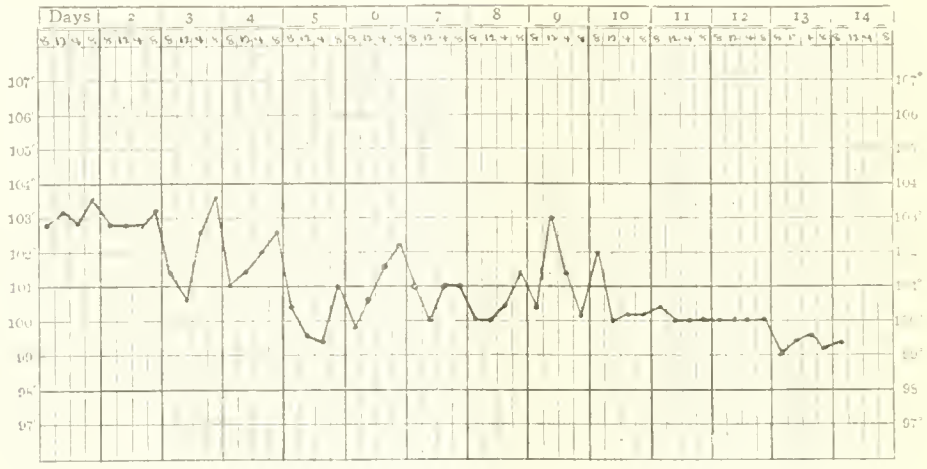

CHART 1.—Showing the effects of the drug when administered continuously; the dimethylamido-pyrazolon was given every four hours, beginning on the second day.

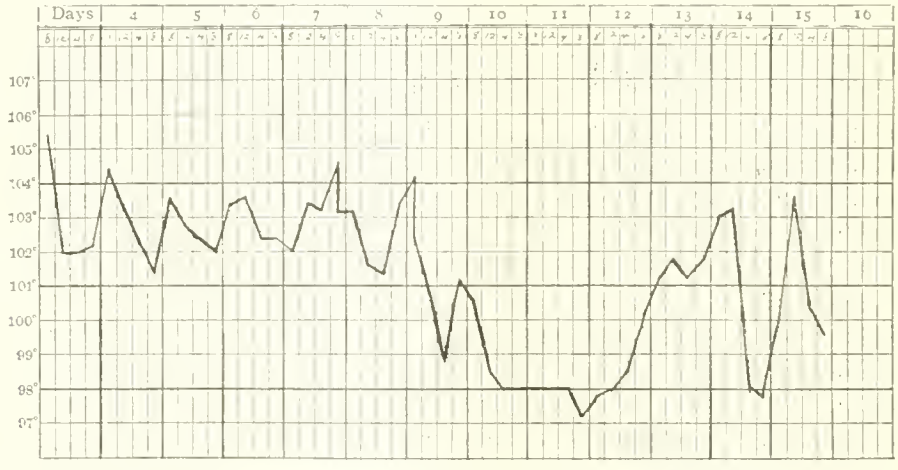

CHART 2.—Showing the effects of the drug administered for three days, the dimethylamido-pyrazolon was given every four hours on the seventh, eighth, and ninth days only.

The thermometer is a very important aid in estimating the seriousness of a pulmonary hemorrhage; if accompanied by high temperature it indicates that when the hemorrhage stops the evidence of marked destructive changes will be recognized at an apex by physical examination. Hemorrhages with but little or no fever, even if severe, are of little importance unless the case is one of fibroid phthisis.

The diagnostic value of the temperature range in a case of phthisis, during active stages of the disease, may be roughly summed up as follows:

1. If the daily temperature is high and never touches the normal, and especially when accompanied by a rise of two or three degrees at night, the case is probably one of acute localized miliary deposit, or possibly of acute general pulmonary tuberculosis.

2. If the daily temperature is irregular, sometimes normal, and at other times ranges between 100° F. and 101° F., and associated with an evening rise, it may be inferred that a slow and inactive deposit of tubercle is taking place. A general gain in weight and general improvement would be observed as long as the evening temperature remains below 101.5° F.

3. If the temperature during most of the day remains about normal and the evening rise does not exceed 101° F., one may infer that the tuberculous process has advanced very slowly if at all.

4. If the day temperature remains always normal and the evening rise does not exceed 99.5° F., one may infer that the tuberculous process is quiescent.

Treatment of Pyrexia.—In the treatment of pyrexia in pulmonary tuberculosis it should be borne in mind that a patient does not suffer or show the

constitutional disturbances at all compared with patients suffering from other active diseases, such as those with pneumonia or typhoid fever. This applies even to those cases of phthisis with a maximum temperature fully as high as that of other fever patients, and at the same time it must be remembered that a reduction of fever in phthisis cases does not offer the same amount of relief as it does in other cases—notably typhoid fever. In fact, cold sponges, which are so effective in every acute disease, are very apt to be followed by chilly feelings which may persist for a long time and render the patient very uncomfortable. It is also well to remember that the maximum temperature seen in phthisis is apt to be much less prolonged than it is in other fever cases, but at the same time it should be kept in mind that many of the symptoms seen in cases of phthisis can be referred directly to the effects of the fever, such as anorexia, loss of weight, and night sweats. While the cold sponges are not ordinarily advisable as a means of reducing temperature in phthisis, still the sponging of the surfaces night and morning in lukewarm water to which an equal quantity of alcohol has been added should be followed in almost every case of fever, as it is not only exceedingly grateful to the patient, but will modify or control to a certain extent not only the temperature, but many of the other symptoms, especially the night sweats. It is only in those cases of phthisis with a persistently high temperature that the fever should be directly treated, and in most other cases the various measures adopted to improve the person's health will in time have a controlling effect upon a moderate fever. In cases of phthisis in which the temperature range is distinctly an unfavorable element, the fever should be treated in the following manner:

We should bear in mind the fact that the patient should be treated exactly as if he was suffering from an acute inflammatory disease, such as lobar pneumonia. The patient should be kept absolutely still in bed and should use the bed pan and the urinal. The reason for this is that "the fever in itself denotes loss of bodily substance; if to this is added further loss through movements, the loss is as a rule too great to be covered by nutritive processes which are depressed by fever—the result is a waste of body substance and increased absorption not only of fat and albumen, but also of the proteins which set up more fever. It is above all important to break this vicious circle." This can only be accomplished by *rest* in bed. It has been found in sanatoriums that fever can be much more readily controlled where arrangements can be made so that the bed can be wheeled out upon the piazza. The patient lies in the open air and is always completely protected from the rays of the sun. My experience has proven that the direct sun rays have in the majority of cases of phthisis, even in those in whom the disease is quiescent, a tendency to elevate the temperature. A modification of this plan can be adopted in private houses by bringing the bed close to an open window in suitable weather and thoroughly protecting the patient from draught. A tuberculous patient with a high temperature should be kept not only physically, but mentally quiet. Visits from friends and long conversations should be prohibited. The diet should be the same as in acute pneumonia. The patient should be fed on what is known as "soft diet" every two or three hours in a small quantity. The diet should consist of milk modified by lime water or vichy water, or better, peptonized. Beef tea to which has been added a small quantity of one of the meat extracts can be given. Soups, such as chicken or mutton broth, are suitable in these cases. Stimulants should be given at regular intervals, but in small quantities. Four teaspoonfuls of whiskey to a glass of milk makes a good combination. In ordinary cases four ounces of whiskey or brandy may be given daily. Dr. Brehmer considers wine much more advisable for this class of cases and is in the habit of giving Hungarian wine, or a stronger wine (8-12 per cent. alcohol) about three wine-glasses a day. Many patients who do not take whiskey readily can find a substitute in a good wine, such as port, sherry, or Madeira. No objection can be made to the use of tea or coffee in moderation, especially the early morning cup. If the digestive organs are in exceedingly good condition an ordinary diet with three meals daily may sometimes be given even with high fever. Forgetfulness of the fact that high temperature in tuberculous cases should be treated exactly as in cases suffering from an acute or infectious disease is the reason more than any other why so unsatisfactory results are obtained and why the temperature is looked upon as a part of the disease and necessarily uncontrollable. It is my experience that most antipyretics do more harm than good in cases of phthisis; and while an elevation of temperature can often be controlled by large doses of antipyrin, antifebrin, or phenacetin, the effects are only temporary and at the expense of the patient's vitality and general comfort. When the temperature of tuberculous patients cannot be modified or to a certain extent controlled by the indirect methods which I have suggested, the use of quinine and codeine, given in combination, is sometimes attended with the most gratifying results. Five grains of quinine in a capsule with a one-quarter grain of codeine ordered every four hours is continued until the patient has taken a drachm of quinine. When an effect has been produced upon the temperature range the quinine is reduced to every six hours and later three times a day. The only other drug I am in the habit of using is dimethyl-amido pyrazolon (pyramidon). Professor Kobert, who has tested this drug in a large number of cases of tuberculosis, reports that he has never seen any depression or unpleasant effects follow its use. In his report he compared its effects in a number of cases with quinine, euquinine, antipyrin, antifebrin, and the salicylates, and found it superior to any of them. At the sanatorium at Liberty it is extensively used to control tuberculous temperatures. In fact it is practically the only drug now used. When it is effective the disappearance of the fever is gradual and the subsequent rise in temperature as its effects pass off is slow. The abatement of the fever of consumption in the early morning is often accompanied by violent sweats. In order to control these sweats, which are not only very unpleasant, but also distinctly harmful, I am in the habit of using one of the salts instead of the drug itself—namely, the acid camphorate. Whether the salt or the drug itself is used the dose which I have found most effective is ten grains every four hours. The drug occurs as a tasteless white powder very soluble in water. As I have said, you will find the effects of this drug on temperature to be gradual, and three or four days must elapse before marked effect is noted. Then the temperature in cases in which it is effective will be noted to be gradually coming down.

It is now a generally accepted fact that most of

the fever proceeds from the absorption of the septic by-products, generally of the ordinary septic microbes. We have two means at hand which are claimed by some to diminish the septic changes which usually occur in the diseased area: (1) The inhalation of various volatile drugs; (2) the use of antistreptococcus serum.

Of the former I often make use, and it seems to me with extremely satisfactory effects upon temperature in some cases. The patient can wear an oronasal respirator at times during the day and often it is possible to wear it at night. I have found that a mixture of equal parts of creosote, alcohol, and chloroform, ten drops on the sponge of the inhaler, gives the best result.

There are a number of antistreptococcus sera on the market and when they are prepared by well known houses are reliable. I have made repeated trials of them in a number of cases of mixed infection with fever, but never have I been able to satisfy myself that they have any controlling effect upon the temperature. I cannot recommend them.

The freer the elimination of the purulent material from the diseased area the less likelihood there is of septic infection and fever. Therefore to bring about this we rather encourage expectoration and do not stop the cough by cough mixtures unless it becomes very troublesome at night; the morning cough should be especially encouraged, as that serves to get rid of the secretion which has accumulated during the night. This can often be encouraged and made much easier for the patient by giving early in the morning a glass of hot scalded milk to which seltzer water has been added.

An important practical point to decide is often presented to the physician, namely, shall a febrile patient undertake a change of climate? I do not know in certain cases of tuberculosis a more difficult problem to decide. So much depends upon the decision. We would naturally say that cases of active temperature should not be moved. Still, I have seen, as you all have, patients with tuberculosis that have run high temperatures for weeks which have resisted all treatment show a marked improvement with a quick reduction of their temperature upon change of climate. These are the exceptions, however. My rule has been in the ordinary febrile cases, after the temperature has been below 100° for three days, to allow the patient to get up at first for an hour or so a day, then longer. As soon as the patient is able to go about the house without having a temperature of over 101° at any time within the twenty-four hours to say that a change of climate can with safety be made if it is deemed advisable from a general consideration of the cases. I believe patients running a higher temperature should not be sent away unless the physical and local conditions both warrant the change, and then only when the case is put directly under the care of a physician where the patient is going.

I would summarize the treatment of pyrexia as rest, mental and physical, in the open air if possible; liquid nourishment and alcohol in a form most agreeable to the patient; tepid spongings with alcohol and water, equal parts, and if these means fail, pyramidon or quinine and codeine.

58 East Thirty-fourth Street

Obstetric Pads.—M. V. MacDonald says that a good grade of cotton waste, at seven or eight cents a pound, such as is used by engineers for cleaning purposes, can be made absorbent by boiling in a soda solution, and makes an excellent foundation for obstetrical delivery pads.—*Nurses' Journal of the Pacific Coast.*

THE PROBLEM OF INFANT FEEDING.

By O. HEUBNER, M.D.,

BERLIN.

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As a text for the following remarks I will relate the histories of two children recently examined in my clinic at the Charité. These two little patients, twins, were one month old. Both showed inferior bodily development. The elder but weaker child, the boy, was artificially nourished from birth. He received at first 60 to 100 grams of milk six times a day, and afterward a smaller amount every two hours; but he did not thrive on this quantity. The child's weight at birth was 3,150 grams, and at one month of age 2,550 grams. He had had disturbances of nutrition from the very beginning. The stools became greenish, and vomiting occurred. Calomel caused improvement in the stools, but the vomiting continued. That is the typical pathological history of a large number of children artificially nourished from birth; it has been the usual case in our clinic for a decade and a half, and it is probably the customary experience in general practice. Since he was received into the clinic the child has been given the breast.

The child was poorly nourished, its entire body being generally lean and unpadded, and the face bore the expression of suffering. It was, so to speak, a child whose own condition made it sad. One may say as a general rule that so long as children do not feel well they take no interest in their surroundings. When they cry they show deep wrinkles about the nose and mouth. This child may afford me an opportunity to discuss the question of feeding during the first days and weeks of life.

It is just at this period that the nourishment of children is of the greatest importance for their entire future. One-third of all the children who die in the first year of life succumb during the first month. It may safely be said that the artificial nourishment of children is attended with much greater difficulties during the first fortnight or month than later on, and that disturbances of nutrition are much more frequent and severe during this period.

Scarcely were the first days passed in the life of this little one before the various troubles began, in spite of careful attention in the clinic. The child's mother was unable to nurse it, because she was at first afflicted with parametritis and afterward showed signs of renal disease. The kidney affection in itself is no contraindication to nursing, for the loss of albumin is not so great but that it can be compensated for; and if the mother had only been able to nurse the child during the first four weeks a great deal would have been gained.

What, now, are the measures to which a physician must resort in order to educate a weak mother to nurse her own child? By careful observation of newly-delivered women we have learned much in regard to this question during the last ten years—I may even say during the last five years. We know now that women whose breasts, during the first week, do not yield the quantity needed by the child, may in the course of time, by quiet waiting, become fully capable of nursing. As long a period as four weeks may elapse without the child thriving at the mother's breast. I am able to give a typical example from a case occurring in my private practice.

A young mother, at her first delivery, had a robust child. On the first day I let the mother rest completely, and the child also. As a general thing it may be said that a child remains much more quiet when it is given nothing, or perhaps only a little tea, on the first day. The mother rested for two days, and the child slept. On the third day the child drank altogether 40 grams (twice 20), on the fourth day 115 g., on the fifth day 115 g., and on the sixth day 120 g. Now, nurse and mother began to despair. To this came the additional trouble that the mother developed fissures on her nipples, which also were somewhat retracted. I must here interpolate that fissures do not constitute a reason for suspension of nursing, and that, aside from careful treatment, no attention should be paid to such. Before and after putting the child to the breast the nipples should be painted with a weak solution of silver nitrate, and with this precaution nursing may safely be continued. In the case of which I speak the pains attending the nursing became so severe that, instead of silver nitrate, I employed a 1 per cent. solution of cocaine, without any ill effect on the child. By this means the mother was able to stand it, although the child on one day sucked out a whole mouthful of blood. While the milk secretion remained so inadequate, however, the child was given one small additional meal a day (at first 60 g., later 80), containing one-third cows' milk. Such mixed nourishment is far superior to wholly artificial feeding. On the seventh day, in addition to the 150 g. of mother's milk which it then obtained, the child was given 20 g. of cows' milk with 40 g. of water in one meal. It is advisable not to give the artificial food after each nursing, but rather to give it alone in one dose. This has the double advantage of sparing the mother once a day, and of avoiding overfeeding the infant. The number of meals may be placed very low. Five to six a day are quite sufficient, and satisfy a normal nursling. That this child was insufficiently nourished, however, appeared from the fact that it passed no stools. The addition of cow's milk need not be large enough to furnish the entire amount of calories required. By proceeding in this manner the secretion of milk increased gradually, and on the eighth day the breasts yielded 320 g. The fissures healed. By the end of the third week the one artificial meal could be withdrawn; and at the end of the fifth week the milk supply was 600 g. and the child's weight was increasing more than 200 g. a week.

I have reported this at some length, because in such cases the technique of feeding is of the greatest importance. The loss in the weight of the child during the first fourteen days was no greater than is usual, amounting to less than 300 g. Under certain conditions it is necessary, when the infant will not nurse properly at first, to resort to artificial means to make it take the breast.

What is the principal factor in making a breast which gives insufficient milk functionate properly? First, the stimulus of sucking; second, good nourishment for the mother. It is always advisable to give the mother plenty of milk in addition to her other food. In the case of premature birth nursing is difficult because the mother's breast cannot be stimulated to secretion by the sucking of the child. In such cases it is best temporarily to engage a wet nurse *with her child*. The vigorous child of the wetnurse is then put to the breast of the weak mother, while the latter's infant is fed with milk drawn from the nurse's breast. Where this is not possible a breast pump must be used as frequently as the child, under normal conditions, would have taken the breast, and as soon as the weak infant can begin to suck a little the breast pump must be used before the child is put to the breast. The experience gained in the homes for nurslings, to which mothers and children are admitted, has gradually taught us to avail ourselves of all these "tricks."

I have, however, a chart from a case in the clinic, which proves that a perfectly satisfactory nutrition may be obtained even in a case where it is necessary to wait a whole month before the mother's breast yields sufficient nourishment for the child. This child received, during the month of May, an insufficient amount of nourishment from the mother (70-80 calories per kilogram). With an increased secretion from the breast it gained regularly; and at the age of eleven months it ran about freely, and was in an excellent state of nutrition.

From such experiences we naturally learn how to reassure anxious mothers in cases in which the milk secretion is insufficient in the beginning. Subjectively considered, children will feel much better with scant nourishment than when plentifully fed.

The only exception to the rule that a mother should always nurse her child is when she is suffering from tuberculosis. The argument that even this might be permitted, because nursing renders the tuberculous mother stronger, is not valid, since one must take into consideration the period after the cessation of lactation. At this period, to mention an example, the sudden appearance of miliary tuberculosis was noticed in a wetnurse who had nursed for a long time. Other contraindications I do not recognize.

To demonstrate by an example that the acute infectious diseases do not constitute contraindications to nursing, I may mention that in the Charité we have let a mother who suffered from scarlet fever nurse her child immediately after the febrile stage was passed. In another case, in the second medical clinic, a typhoid patient nursed her child during the entire period of the disease, and both mother and child were the better for it. In febrile diseases, however, it is generally advisable to take the child away while fever is present, but to let it be nursed again as soon as the temperature has become normal. The breasts then begin to secrete anew. In the Charité we have observed a case in which the glands began to give milk again six weeks after suspension of nursing, the children (twins) being then nursed until the end of the normal period of lactation. These are all facts which make it the urgent duty of physicians always to urge mothers to nurse their children. In the case of the twins mentioned at the beginning of this paper, a comparative experiment was made. The weaker child—the boy—was nursed by the wetnurse, while the stronger child the girl—was given artificial food, consisting of extra good, diluted cows' milk. The breast-fed child progressed at once, while the bottle-fed infant did not develop at all during the early period, when it received an abnormally low amount of calories. Even in the further course of the treatment the originally robust bottle-fed child developed more slowly than the breast-fed child, which was weaker at birth.

I would therefore urge, in conclusion, on all who find themselves in the position of advisers to nursing mothers to be insistent in counseling their charges to do their duty in the matter of breast feeding, no matter what may be the initial difficulties, and thus to help them to achieve this blessing of true motherhood.

SOME ASPECTS OF STERILITY AND ITS TREATMENT.*

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In writing on the subject of sterility in women one is embarrassed by dealing mainly with one half of the matter, as those who have had a wide experience are more and more convinced of the greatness of the part playing by the male, not only in absolute sterility, but in all the other forms. It is not only important from a medical standpoint, but the sociologist should be equally interested, as it is a matter of no small importance to the community at large, that at least one million women in this country are absolutely sterile. These women sooner or later seek the advice of the physician. The subject is therefore of prime importance to the general practitioner as well as the specialist. Personally, in the short time that I have been engaged in the practice of medicine, I have had a fairly wide experience with this particular gynecological condition, and the greater my experience the more I have been impressed with how little our knowledge extends in this direction and what an amount of scientific work yet remains to be done.

Sterility is equally dominant in all classes, particularly in the absolute form, but it seems to me that the greater the intellectual faculties of a woman the more likely is she to be relatively sterile. In the lower classes absolute sterility sooner or later will interfere with the general morale of the home, and if the woman is religiously inclined she considers herself as one cursed by Providence, and at times as one unworthy of enjoying the pleasures of life of this world and the world to come. This condition constantly preys upon her mind, so that eventually it becomes more or less in a state of perversion, and quackery in all its forms very naturally has its greatest outlet among this class of patients. Even the Bible has an authentic case in which prayers helped to open a womb that had been shut, the woman conceived and Samuel was born as a result.

Sterility is generally divided into absolute and relative. By absolute is meant when the individual is incapable of bearing a child to the period of viability. It is termed relative when child-bearing is not in accordance with the length of time the individual has been married. Ordinarily a woman should give birth to a child every three years during her child-bearing period.

From the above you will see that the question of conception is entirely left out from the discussion, and therefore, I think the definition is not entirely complete either from a scientific or a clinical standpoint. A more scientific classification would be to term sterility *complete* when the woman has never conceived, *incomplete* when she *does* conceive but habitually aborts before the child is viable; and relative when children are not produced in a number, in accordance with her condition, age, and length of married life.

Before we commence to consider the causes that may prevent conception, we must decide that no two cases have the same etiological or pathological factors—at least this has been my experience in about sixty cases that I have seen both in clinical and private practice. And the sooner one is able to appreciate it the more apt is he to cure the patient—sterility and curettement have been too long associated in the minds of medical men, and the result of this association I need not tell you.

In order that conception may take place, the most essential factors are, first the deposit of healthy semen in the upper segment of the vagina, second an uninterrupted passage, or still more definitely, a patent, relatively healthy female genital tract, at some point of which the spermatozoon and ovum may meet and find a resting place for their growth. From the above it can be seen that any thing that will interfere with the general health, or any local pathological condition of both the male and the female, may either prevent or postpone conception.

The male aspect of this condition is not as complicated as the female. Here our diagnosis can be more exact and our line of treatment more definite. Aside from the many organic lesions in the male that cause sterility, I find that sterility is very common among habitual masturbators, who by virtue of their having practised masturbation for a long time, have suffered the glandular structures of the testicles to become functionally inactive, and on examination one finds that the semen of this class of patients contains no, or very few, small, dead spermatozoa. Again excessive coitus, especially practised by recently married couples, leaves the male partly in the same condition as that of the masturbator. This is very well illustrated clinically, when one observes that if conception does not take place soon after marriage, it is usually postponed until a time when probably the husband is taking the proper rest and during which time the glandular structures of the testicles become reinvigorated and commence to secrete healthy spermatozoa.

The so-called vague term of incompatibility or want of sexual affinity is a very important factor in sterility. I find among some patients that either the husband or the wife is sexually weaker,—usually it is the husband. The act of copulation is not satisfying to both alike, an element which is very essential and must not be overlooked. Our duty in such cases is to try to equalize conditions, either by building up the one who is weaker, or if that is impossible, we have to go to the extreme, of depressing the one whose sexual powers are stronger. I have carried out this mode of treatment in one of my cases with the result that the woman conceived at the end of nine weeks after being sterile over five years.

Occupations which tax the nervous system, so that the individual is mentally tired on completing the day's work, are also conducive to sterility. Such a state of the nervous system is not conducive to healthy intercourse, and sterility is quite likely to be prevalent among this class. We can readily overcome it by instructing patients to have no intercourse before some rest in the form of sleep is taken, during which time the general nervous system is likely to have resumed its normal state. A man with a congenitally small penis, especially when the woman is of large stature, finds it difficult to perform the act of copulation, with the result that conception does not take place. This condition is almost always relieved, by instructing the woman to have it so arranged that her pelvis is on higher plane than the rest of the body during intercourse and also to remain perfectly quiet for at least one hour after, as the semen is probably deposited very low in the vagina and any undue motion on her part may cause its escape from the vaginal vault.

Another important element of sterility in the male is varicocele of one or both sides, no matter how

*Read at a meeting of the Alumni Society of the Lebanon Hospital, February 5, 1907.

small it may appear to be, but which still may produce enough passive congestion of the testicle to render it functionally inactive. I had this condition most beautifully illustrated in one of my patients only a short time ago. The wife of the patient came to see me about her sterility with the following history: twenty-eight years old, menses began at the age of fourteen years, were regular every four weeks, of three days duration. Married six years and never conceived. Two years ago the cervix was dilated and curetted by a prominent gynecologist of this city with no beneficial results. On examination I found her genital organs apparently normal. I immediately asked to see the husband and a specimen of the semen. On physical examiation I found that he had a small varicocele on the left side. The semen on repeated examinations showed no spermatozoa. I suggested to him that his varicocele might be a cause of his azoospermia and advised removal of the same. He was operated in this hospital last July, and three months later his wife conceived, and now is in her fourth month of pregnancy (spermatozoa were present after operation).

Finally it is the duty of the physician to examine a great number of seminal specimens, in order thoroughly to familiarize himself with the microscopical appearance of spermatozoa and to be able to satisfactorily pronounce a given specimen as being normal, for it is not sufficient that spermatozoa are found. It should as far as possible be established that some of the spermatozoa will reach their point of destination fully viable, active, and in condition to impregnate the ovum. Many specimens that are examined are found to contain spermatozoa that appear very feeble, some that hardly posesss life at all, some that are broken up and some that are dead. With such semen no matter how normal the woman may be, conception may not take place, for in order to impregnate the ovum, the individual spermatozoon will have to travel a distance of at least 24 centimeters and the time it will consume in doing so, no matter how moderately rapid it will progress, will be one hour and a half. Many obstacles will delay its journey and the time consumed will be much longer. Now many specimens of semen that I have examined and which showed living spermatozoa although not of the very active variety, when the same specimens were examined two hours later after keeping them in a warm, normal salt solution, showed no trace of a living spermatozoon. would it not be logical to conclude that such spermatozoa will die during their travels before they will meet the ovum to impregnate it? Such a condition is generally the result of a debilitated state of the individual and naturally calls for treatment that will improve the general condition of patient, but in addition to it, the patient must have thorough sexual rest for a given time. Usually I prohibit any sexual excitement for at least ten weeks.

In seeking the cause of sterility in women not only the whole range of diseases peculiar to women must be considered, but as well the physical and social conditions of the individual. No other condition requires a more detailed knowledge of the physiological and pathological processes that take place in the female genital tract, and depending upon one's ability to differentiate the various processes will depend the success met in the treatment. Once healthy semen is deposited in the upper segment of the vagina and conception does not take place, clinically the woman is at fault. At times the cause is very obscure, but aside from the many pathological lesions that may be present, functional disturbance no matter of how mild a nature will cause the woman to be sterile. Particularly is this true in that class of women who suffer from a general muscular relaxation, are ill nourished, and highly nervous. For in order that the spermatozoon may reach its destination, two mechanical forces besides its own motile power are directly engaged in compelling it to travel in the direction of the uterine cavity. From below we find that the perineal body or pelvic floor by the constant contraction and relaxation of its muscular structure produces a wave in the direction of the cervix, hence the spermatozoa are carried along with this wave. This function of the perineum is probably one of the most important factors in holding the uterus in its normal position. From above the uterus constantly undergoing some contractions, must, by virtue of its being hollow, have some suction power which also aids the spermatozoon in its uphill travel. In patients who suffer from a general muscular relaxation these mechanical processes are greatly diminished with the result that conception does not take place, for in addition to it, we must not overlook the fact that the wave produced by the ciliated epithelium lining the uterus is outward, and certainly must hinder such a minute body as the spermatozoon from progressing in an opposite direction.

In patients in whom I suspect this to be the condition my aim is to improve the local muscular structure, and the method I adopt is as follows: The patient is instructed to loosen all her bands, particularly the waist bands; to stand on the floor in an erect posture, hands elevated above head, feet drawn together, then take a deep inspiration to be followed by a sitting posture with body hanging on the knees; remain in this position for about five seconds and then return to the original erect position. This is to be performed three times daily for about ten minutes at a time. You can very readily see how this form of exercise not only acts upon the pelvic floor but will also indirectly make the uterus and practically all the abdominal viscera functionate more properly. This form of treatment I have recently followed out in a patient who after being married three and a half years never conceived. She appeared at my office about six months ago. On examination I found nothing that seemed abnormal, her husband also being in perfect health. After following this plan of treatment for about three months she became pregnant and is now in her tenth week of pregnancy. In addition to the exercise I gave her 6 grs. of the black oxide of manganese per day.

Another class of patients who require a good deal of attention are those women who marry at an advanced age; whose generative organs are likely to have undergone some changes, at any rate they do not functionate well. This class of patients I instruct to have intercouse during the week preceding menstruation only, when the generative organs are at the height of functional activity, and therefore conception is more prone to take place.

In the course of our work we meet a class of patients in whom the relation of the cervix to the posterior vaginal wall is changed, due either to malposition of the uterus, to a large elongated cervix, or to a particularly small vagina. In these conditions correction of the deformity is always the indication, but we are all aware how unkindly such a suggestion is received, especially if one happens to be first to give such advice. In these conditions we must search for some means that will bring the spermatozoa nearer the external os. This can be

accomplished by advising the husband to have intercourse with the woman in the knee chest position at least twice a month during the week preceding menstruation. You can readily see how the relation of the spermatozoa with the external os is changed in the same manner as if the axis of cervix had been corrected by some operative interference. Such advice certainly does not appeal to one's esthetic senses, but in the practice of medicine we are very often compelled to overlook it. This method of treatment, although very simple, has brought on conception in two of my patients, one giving birth to a mature viable child, while the other aborted in the third month. One had been sterile four years, the other two and a half years. I admit that these patients might have suffered from some slight organic lesion causing obstruction at some point of the genital tract, which has cured itself during the interval; but from a clinical if not from a scientific standpoint it certainly cured these patients.

The marriage of near relatives is said to be a cause of sterility. Personally I do not find this to be true, and in races where the religion permits the marriage of near relatives, sterility is not more prevalent. On the other hand some of the women are very prolific.

The lack of sexual desire or the absence of sensation of pleasure during intercourse are also given as causes of sterility. Personally I have had no experience with this class of patients, but I believe that it is not purely a functional disturbance as is generally assumed, but that there is some organic lesion underlying this condition which we at present are not able to diagnose. Excess of sexual excitement on the other hand is certainly prejudicial to fertility in so far as it induces certain pathological results, such as congestion of the uterus and its appendages, leading to ovaritis and defective ovulation; or to salpingitis and with it to more or less obstruction to the descent of the ova and ascent of spermatozoa, or to metritis and with it a tendency to the occurrence of abortion.

The organic lesions that cause sterility may be divided into congenital defects of an irremedial character and acquired abnormalities. The congenital causes we may dismiss from our discussion as at present we are not in a position to improve the condition. The operation of transplantation of a section of the human ovary is yet in its infancy, although the case of Dr. Morris has proved successful, but I think that the time is not very far off when many more authentic cases will be reported. It is not very difficult to diagnosticate these congenital cases. Usually these patients show a train of symptoms which are quite characteristic. The masculine appearance, the small undeveloped mammary glands, associated with an irregular menstrual history regarding the age of onset, the intervals at which it appears, the scanty flow and its duration, all these together with a small vagina, particularly a short anterior wall, at once establish to my mind the fact that the patient is suffering from a lack of development of some part of the genital tract and my prognosis is unfavorable.

Of the acquired causes of sterility the whole range of diseases of women must be considered. I shall only touch upon a few, which I believe are the most important to the general practitioner. I believe that one of the most frequent causes of both the complete and relative forms of sterility are the various leucorrheas, whether specific or not. A vaginal leucorrhea of a strong acid reaction will certainly kill the spermatozoa in a short time. I usually test the degree of acidity with a piece of litmus paper, and if found markedly acid the indication of course is to neutralize the secretion, which is best done by tamponing the vagina with equal parts of bismuth subnitrate and sodium bicarbonate on a non-absorbent cotton tampon every other day for two weeks. The patient is not allowed to remove the tampons until one hour before she is supposed to call again. At the end of a short time you will find the degree of acidity quite changed. It is necessary that these patients douche themselves with some mild alkaline fluid, sodium bicarbonate usually answering the purpose, and in addition to their general douching a small douche of sodium bicarbonate must be taken a short time before intercourse to make sure that the secretion of the vagina is of an alkaline reaction.

Stenosis of some part of the cervical canal is surely an important factor, but I believe it is not as common as it is generally supposed to be. Complete stenosis cannot exist as long as menstruation takes place, and if menstrual blood escapes through the canal the spermatozoa can certainly pass through it. Clinically I have not seen a case where the os has been so completely obstructed that I could not introduce a small probe into the uterus. What is usually associated with a small cervical opening is an endocervicitis. It may be of a very mild degree, hardly perceptible, but enough is secreted by the mucous membrane to occlude this small opening, making it impossible for the spermatozoa to pass through. This condition is very common, and these are the patients that we are able to cure. I have operated on a number of patients for sterility due to this condition with great success. The method I used was simple dilatation of the cervix, scraping it somewhat if found necessary, and introducing a small intracervical pessary which I have kept in from two to three months, removing it when necessary and introducing it again. The pessary prevents the cervix from contracting again and sooner or later the muscular structure in the cervix accommodates itself to its new surroundings, with the result that the canal remains a good deal enlarged long after the pessary has been removed. If the endocervicitis still persists, it is very readily cured by intracervical applications of some astringent; usually 6 per cent. solution of silver nitrate will answer the purpose.

The infantile uterus, unless associated with other conditions, does not cause sterility as often as is attributed to it. A small uterus is only a relative term. The smallest uterus that I have seen was in a woman who gave birth to a child and since then has conceived again.

The various displacements of the uterus with the probable exception of extreme anteflexion are seldom causes of absolute sterility. Conception in these conditions does not take place on account of the change of the axis of the body of the uterus, but is due in the majority of cases to a change of axis of the cervix. It is certainly one of the most important causes of incomplete sterility and therefore should be corrected.

Recent investigations by competent observers have proven that in the majority of cases, inflammatory processes of the lining membrane of the genital tract are of gonorrheal origin, and it is a very singular fact that at times these gonorrheal inflammations are so mild that the woman is troubled very little, and the physician is not consulted early enough to prevent further progress of the disease. The Fallopian tubes, if already attacked, will surely cause the woman to be sterile in the majority of cases. Women

who are apparently normal may fail to conceive on account of some slight tubal affection which can only be detected after the abdomen is opened at the time of an operation. There are two main indications in the treatment of these patients suffering from gonorrheal infection of a milder degree, first to reduce the existing inflammation: second to prevent reinfection. In all our therapeutics for reducing inflammations of the pelvic organ nothing equals glycerin, if properly used; glycerin as generally used in various clinics is absolutely useless. In order that the patient may derive any benefit from it, large quantities must be used, a cupful at a time, that will fill up the entire upper portion of the vaginal vault, to be followed by a gauze or non-absorbent cotton tampon to prevent the escape of the glycerin. This is repeated every other day until the active inflammation or congestion is removed. To prevent reinfection intercourse must be strictly forbidden for at least six months.

In conclusion I want to say that although with the lapse of every succeeding year after the third from marriage, without the occurrence of conception the prospect of child-bearing becomes less, yet if no apparent cause for sterility is discovered the patient should be encouraged to entertain some hope. Any improvement in the local condition, which time in itself may rectify, will result in conception. With our present knowledge of the subject we are not in a position to make a positive prognosis, for as long as our diagnosis is not always accurate it follows that our prognosis cannot be exact, but it is the duty of every physician to try to convince these patients that the earlier they carry out the doctor's advice the more likely are they to be cured, and that a lapse of a little time may cause permanent sterility. Personally, from the number of cases I have already seen, I am thoroughly convinced that gonorrhea in all its forms is the greatest factor in the production of sterility, and that if anything is to be done to relieve this condition the education of the future husband must be commenced at an early date, that parents, teachers, and educators must constantly point out to the young adult the danger to which he is exposing himself, his future wife, and probably the offspring. As long as these dangers are not realized by the public at large, so long will sterility be on the increase.

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WHAT ARE ACID FASTS?*

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A few years ago Koch himself maintained that the only bacilli likely to be confounded with the tubercle bacillus were the bacillus of leprosy and the smegma bacillus. All the world held with him that when one had eliminated the possibility that the material under consideration had been contaminated by the leprous or by smegma, any slender rod-shaped germ, one-half or one-quarter as long as a red blood cell, that retained the fuchsin red after half a minute's decolorizing with twenty-five per cent. mineral acid was the tubercle bacillus.

An immense amount of time and energy was expended in elaborating modifications of the ordinary carbol-fuchsin and methylene blue staining methods for the purpose of differentiating the tubercle bacillus from the lepra bacillus in order that the tragic diagnosis of tuberculosis might be free of every shadow of doubt. The result of all this work was not entirely satisfactory, but still the profession had settled back into a somewhat smug conviction that since as a rule the smegma bacillus was more readily decolorized, and the lepra bacillus less readily decolorized, than the tubercle bacillus, the microscope was a sufficiently reliable guide.

Nine years ago Petri and Lydia Rabinowitsch while searching for tubercle bacilli in the butter and milk of Berlin discovered and isolated a bacillus which answered the staining requirements of tubercle bacilli, but which did not cause tuberculosis in injected guinea pigs, and which differed from tubercle bacilli in many cultural ways. About the same time A. Moeller at Gorbersdorf discovered that a flask of bouillon into which a few days before he had put some green timothy grass from his garden contained a great number of bacilli which in shape and size and staining were like tubercle bacilli, but which on isolation seemed to have markedly different biological characters. These two discoveries were quickly followed by confirmatory and supplemental findings by bacteriological workers in various parts of the world. During the last few years a whole literature has grown up about the subject, whose importance and interest are everywhere recognized. All these germs which, with the ordinary staining methods, resemble the tubercle bacillus are now known in English as "acid fasts," in German as "saurefesten Bacillen," and in French as "bacilles acido-resistants." They have now been found in so many places and under such different conditions that it seems desirable to classify them according to their various sources:

Class I.—The acid fasts found in nature. Moeller's timothy bacillus is the type of this class. It or bacilli closely akin to it have been found in hay and dung and street dust, wherever it has been looked for, and it has been cultivated from various kinds of grasses. Moeller has found acid fasts also in sand, soil, and mold. They can readily be found in the dust in dark barns and chicken coops. Moeller claims that in all the researches he has made he has never found the tubercle bacillus in nature. The acid fasts he has found have always been the quickly vegetating timothy bacillus or some of its relations. This timothy bacillus is not distinguishable from the tubercle bacillus in form, size, or staining, except in very old cultures when it loses some or all of its acid resistance. Like the tubercle bacillus it does not change milk nor liquefy gelatine. It differs from the tubercle bacillus in that it grows as much in twenty-four hours as the tubercle bacillus does in two weeks. It grows also at room temperature, and does not need sweetened media for its sustenance. Its colonies vary from a deep yellow to a brick red or even a rose red, and by a little sophistication they can be made to grow white or gray.

Class II.—The acid fasts of milk and butter. How frequently acid fasts can be found in milk and butter has been a subject of dispute. They have been isolated from the butter of Milan by Coggi; from the butter of Fribourg-en-Brisgau by Korn; from the butter of Zurich by Mme. Marie Tobler; from the butter of Vienna by Markl; from the butter of Paris by J. Binot, and from the milk of Belzig by Moeller. The technique of finding these acid fasts consists in injecting the suspected butter or milk into guinea pigs and after a few days planting the resulting pus or peritoneal exudate on various cul-

*Read before the New Haven Medical Association, April 3, 1907.

ture media. Lately Rabinowitsch, Grassberger, and Markl have isolated acid fasts from oleomargarine.

These butter and milk acid fasts often differ from one another in morphology and in the color of their cultures and in their resistance to the decolorizing power of acids and alcohol. Some of them are as acid fast as the hardiest tubercle bacilli, while others seem to have no acid resistance unless they have been cultivated in milk. They all grow best at 37° C. in from two to five days. All develop slowly at room temperature except the one isolated from the milk of Zurich by Mme. Tobler, which usually does not grow at room temperature.

Class III.—The harmless acid fasts of man. These consist of the well known smegma bacillus first described by Alvarez and Tafel in 1885; and the cerumen bacillus—possibly the same organism as the smegma bacillus—found by Gottstein in 1886; and the bacilli found by Karlinski in 1901 in nasal mucus in fifteen out of twenty cases examined; and the various acid fasts found in comedones, in the secretion about the toes, on coated tongues and teeth, in the tonsillar crypts, and in saliva by Laabs, A. Moeller, and Rabinowitsch. Moeller, by injecting smegma bacilli under his own skin, was able to procure a pure culture, and Lazer and Czaplewski have, according to Cornet, been able to grow the smegma bacillus on agar mixed with human blood. Karlinski, himself, has recently shown that his bacillus is the same organism as that isolated from butter by Petri, Rabinowitsch, and Korn. The others have not been grown in pure culture. The fact that they do not cause lesions when injected into guinea pigs of course offers a reliable method of differentiating them from the tubercle bacillus.

Class IV.—The pathogenic acid fasts of man and beast. The tubercle bacillus and the lepra bacillus are the most important of this class, but their consideration is not within the scope of this paper. Stefansky has described a short acid fast bacillus that he found in the giant cells of the rats of Odessa sick with a disease that looked like leprosy, but he was not able to infect guinea pigs or other rats with injections of this organism. In 1900 A. Moeller made an interesting find in the depths of the tuberculous nodules on the breasts of cattle and hogs. He isolated and cultivated a beautiful acid fast rod larger than the bovine tubercle bacillus, which grew at 18° as well as at 37°. At the latter temperature the culture reached its full development in twelve hours. This bacillus is very pathogenic for guinea pigs, but kills them on hypodermic injection, as do so many other of the acid fasts, without any signs of the development of tuberculosis. Moeller claims that if it be mixed with butter before injection, this bacillus will cause the formation of true tubercles in guinea pigs. Potet repeated the experiment and failed to get any nodules in his guinea pigs. Nobody has yet been able to cultivate the true Hansen bacillus of leprosy, but many workers have isolated and cultivated from the leprous nodes a bacillus that grows well at room temperature, is poorly acid fast, and in old cultures loses entirely its power of resisting acid. It is important to remember these two findings, for they have been and they still are the foundation for many attempts at explaining the acid fast problems.

When acid fast bacilli are found in great number at or near a seat of disease in human beings not sick with tuberculosis they have been until recently considered to be smegma bacilli, but as smegma bacilli cannot be grown on ordinary media, and as in many cases these other bacilli have been readily isolated and cultivated, much discredit has lately been thrown on the old, simple classification. For instance, acid fasts, not tubercle bacilli, have been found on the surface of chancres and mucous patches by Lustgarten; in gonorrheal pus by Lazer and Czaplewski; in urine of the syphilitic by Rappin and Hernot; in a suppurating ovarian cyst by Dietrich; in the urethra of a woman suffering from a post-partum ascending pyelonephritis by Stolz; in two cases of panophthalmia showing non-caseous giant cells in the nodules in the retina and iris by Ginsberg; in the sputa of a patient suffering from a disease that clinically seemed to be tuberculosis, but whose autopsy revealed no tubercles, by Zalin; in a case of bronchial dilatation by Melchner; in acute bronchitis by A. Moeller. Of course there is no satisfactory proof that in any of these cases the acid fasts were the cause of the diseased conditions in which they occurred.

Ravenin three years ago isolated from the filtering beds of the water system of Nantes an acid fast streptothrix which was feebly pathogenic for laboratory animals. Flexner has reported a case in which the patient had all the symptoms of tuberculosis and post mortem had nodules in lungs, liver, and peritoneum that contained no giant cells, but did contain a beautiful acid fast branching streptothrix.

In non-tuberculous gangrene of the lung acid fasts, some resembling the smegma bacillus and some the Rabinowitsch butter bacillus, and others having only a slight resistance to acids, have been found by various observers, Folli, Ophuls, Pappenheim, Benenuto, and Fraenkel. Klein of Amsterdam and his assistants claim that from practically all cases of pleurisy they are able to cultivate acid fasts closely resembling tubercle bacilli, but having much less, and often no pathogenic power for guinea pigs. Many other workers, Besançon, Griffon, Philibert, have found acid fasts, probably not tubercle bacilli, in serous effusions and in blood clots.

In view of all these facts, how shall we differentiate the tubercle bacillus from the other acid fasts?

Not by its staining reactions alone. Many of the others are just as resistant to the decolorizing power of nitric, sulphuric, or acetic acid, or alcohol, as the most typical tubercle bacillus. And the tubercle bacillus can be deprived of most or even all of its acid resistance, as has been conclusively proven by Arloing and Courmont and by Auclair. Again such common bacilli as the anthrax and subtilis, if grown on agar to which butter or fat has been added, take on a waxy capsule that makes them acid fast. (Flexner, Brenstock, Gottstein, and Gibier.) I have repeatedly conferred acid fast properties on a large proportion of Klebs-Loeffler bacilli by simply growing them for two weeks at room temperature in equal parts of sugar bouillon and normal salt solution.

I treated a patient last year with signs of apical and laryngeal disease who for several months expectorated an almost pure culture of pseudo-Klebs-Loeffler bacilli until I gave her some intracheal injections of sterile oil and ordered her to use this oil in an atomizer. Then I began to get specimens that contained what apparently were tubercle bacilli. When the treatments with oil were stopped the acid fasts disappeared from the spittle. The experiment was repeated later with the same result.

Not by the form alone. The shape and size of

the tubercle bacillus vary greatly according to its age and environment from short rods, almost cocci, to actinomycotic branches. Many of the other acid fasts are morphologically identical with the tubercle bacillus.

Not by the appearance of the cultures alone. Usually the other acid fasts have more chromogenic power than the tubercle bacillus, and their cultures are usually more moist. But the tubercle bacilli transplanted on to solid media from homogeneous fluid cultures develop in moist creamy heaps like many of the other acid fasts.

Courmont exhibited at the last international congress cultures of human and avian tubercle bacillus, some red and some yellow, exactly like many of the butter and grass bacilli.

Not alone by the determination of the temperature necessary for growth. The tubercle bacillus usually will not vegetate on ordinary media below 37° C., whereas most of the acid fasts will develop slowly at 18°. Nevertheless, even on ordinary media, the tubercle bacillus, by careful cultivation, has been led to grow below 30°, and the bacillus of fish tuberculosis grows at much lower temperature. The tubercle bacillus of human type injected by Moeller into slow worms and frogs and afterwards recovered from these animals was found to grow luxuriantly at room temperature and poorly or not at all at 37°. I have grown these slow worm and frog tubercle bacilli many times on various ordinary media, not only at room temperature, but exposed during all their period of vegetation in the bright light of the laboratory windows.

Not alone by agglutination tests. Courmont and Descos claim that the serum of tuberculous animals fails to agglutinate many of the acid fasts and that the serum of animals injected with acid fasts fails to agglutinate the tubercle bacillus. But they also admit that many strains of even homogenized tubercle bacilli are not agglutinated by the serum of tuberculous patients. Koch, Moeller, Nobele and Beyer, Becker and Rabinowitsch, have held that all the acid fasts are agglutinated by the serum of the tuberculous.

Not alone by consideration of the lesions produced in guinea pigs. Of course, ordinarily there is a marked difference. The tubercle bacillus produces tubercles, and when recovered from these tubercles can be again injected and again recovered, and so on, indefinitely, whereas the acid fasts usually produce only a local abscess with or without enlarged glands and acute septicemia when injected under the skin, and a general peritonitis when injected into the peritoneum. The mixing of the acid fasts with butter before injection intensifies their pathogenic power.

Nevertheless, Moeller, Korn, Mayer, and Lubarsh caused the development of true tubercles with giant cells in guinea pigs injected with the timothy or Korn bacillus, and Abbot and Gildersleeve and Schultze have shown that the intrarenal or intravenous injection of the timothy bacillus into rabbits causes the production of true tubercles with giant cells. As I reported last year, I have been able to produce tuberculous nodules in rabbits by the intraperitoneal injections of acid fast rods and cocci developed from *Baccillus mycoides* and to cause other tubercles in a second series of rabbits by injecting the recovered acid fasts into the second series. Courmont and Descos have produced a generalized tuberculosis without giant cells by injecting small doses of Binot's bacillus into a dog.

On the other hand, the tubercle bacilli of the homogenic cultures of Courmont can be entirely deprived of their power to produce tubercles on subcutaneous injection.

Practically one must, here as in most other diagnoses, consider not only one, but all the facts of the problem in order to decide wisely whether or not the bacillus in question is the tubercle bacillus or one of the less important acid fasts.

The subject of the relationship of the tubercle bacillus to the other acid fasts, and the arguments that have been advanced for and against the theory that tubercle bacilli are merely saphrophytic acid fasts which have evolved special characters necessary for their existence and growth in animal cells, I refrain from discussing to-night. It is too big a subject, and it demands much more study before one man's opinion of it will be worth more than the opinion of any other man.

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REMARKS ON THE TREATMENT OF DISEASE AND SO-CALLED "AUTHORITIES."

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"Mastery of all the sciences upon which medicine is founded does not make the physician. He would be helpless without them, but he is worse than helpless with them until he learns how to use them, how to construct out of them the special art which enables him to cure disease." So said Draper, and never was there a truer utterance. Yet there are men in the profession—men who like to be looked upon as authorities in medicine—who belittle therapeutics and oppose nearly every therapeutic suggestion not offered by a member of the "Four Hundred."

I believe, however, that the great majority of practising physicians heartily endorse the words of the late J. Milner Fothergill, M.D., M.R.C.P., who said in the very first paragraph of "The Practitioner's Handbook of Treatment": "The ultimate aim of all medical research is the treatment and prevention of disease. It is eminently desirable that a medical man should be generally well informed; but what is to be still more devoutly wished for is that he should be a skilful practitioner. It is quite possible to be the one without being the other. The combination is what we hope to see accomplished. The tendency of modern medical teaching has been rather to produce the first, leaving the second quality to develop itself, or to remain in a condition of imperfect evolution. We constantly hear it asserted that the highly educated medical men of the present generation are not more successful in practice than their less accomplished but more practical predecessors. Even members of the profession are to be found who assert that the man under whose treatment they would place themselves, if seriously ill, is the old-fashioned general practitioner. This is a serious reproach to our recent advances in scientific medicine; to our modern instruments of precision in diagnosis; and even to our progress in rational therapeutics, in late years."

With the marvelous progress in diagnosis, and under the influence of the German school, we have come to attach, not perhaps an exaggerated importance to diagnosis, but an importance which has re-

sulted in placing therapeutics in a very subordinate position. It is all very well for a patient to feel that his medical man is a skilful diagnostician, but the essential thing after all is confidence in his power to aid him when stricken and prostrated by disease or accident. It will occur to the minds of most men that the physician's principal duties are to prevent and cure disease. "The real physician," said Broussais, "is the one who cures; the observation which does not teach the art of healing is not that of the physician, but of the naturalist."

We should do more than classify diseases, as a botanist might sort and classify plants and attach to them their proper names. We are dealing with human beings, not some dried specimens which we label and place in their proper places in a herbarium. Although I sometimes think there are many ultra scientific physicians who would prefer to confirm their diagnosis by an autopsy, and preserve some of the pathological specimens than to assist the patient to recover when the diagnosis is in doubt.

I remember a story told by "Uncle" Allen, formerly president of Rush Medical College. He was being shown through a large pathological laboratory in Paris, and was wearied looking at shelf after shelf loaded with pickled specimens of organs and tissues from people long since dead. At last he turned to the great pathologist and said: "Great God! Where are the people you have cured?"

To prevent and cure disease is the physician's actual business in life; and it is here that success is most to be desired. Our success is measured by our ability in this direction, for the public cannot be expected to estimate us by any other measure than that of our usefulness. Even Dr. Osler, who is not much of a believer in therapeutics, says: "There is no one measure which can compare with the decrease of physical suffering in man, woman, and child when striken by disease or accident. This is the one fact of supreme personal import to every one of us. This is the Promethean gift of the century to man."

We should not look upon each patient who calls upon us for aid as a "case" of this or that "disease," of interest only as the victim of some morbid process furnishing us an opportunity to demonstrate our diagnostic skill, but as a suffering human being possessing the attributes of humanity collectively, together with some variations which form individual peculiarities, and who should be relieved if in our power to relieve him. Shall we be so "scientific" that we shall refuse to treat symptoms because we may be unable to name the "disease," or because, for instance, the patient is suffering from pneumonia, or some other acute, self-limiting disease, so called?

It is rarely possible to destroy the cause of disease. In the majority of diseases, perhaps, it is impossible to overcome or remove the cause, but we can counterbalance many of the primary effects. For example, since we are unable to dissolve a urinary calculus, we must endeavor to annul the spasm and the pain which are due to the presence of the calculus, and by proper diet and therapy do something, not against the calculus itself, but against the causes which have made it grow. Although we cannot make new heart valves out of imperfect ones, nor rarely restore a degenerated heart muscle, we can by proper treatment relieve the symptoms resulting from failing compensation.

We often see certain symptoms accompanied by certain others, and we observe, in general, a constant succession in certain groups of symptoms. Disease is nothing but a new manner of being of the organs, which present either new phenomena or different modalities of normal ones. Herein lies the difference between clinical medicine and pathology: The latter shows us the species and genera of disease; the former compels us to bear in mind that it is not a disease, but diseased persons, with whom we have to deal.

The morbid phenomena determined by numerous and different conditions vary unceasingly, according to the varying combinations of these conditions; it is, therefore, impossible to refer diseased conditions to certain types which shall be invariable and uniform. If all individuals had organs constituted in the same manner, and endowed with the same dynamic energy, if climacteric conditions were the same for all, and all could be subjected to the same physicopsychical life, the same perturbation would then produce the same effects in all, in the same invariable order of succession. In such a case there would be as many diseases as there are varieties of initial perturbations, and they could be classified as one classifies chemical reactions.

Indeed, no less an "authority" than a Committee of the Royal College of Physicians, London, has arbitrarily given us a grand total of one thousand one hundred and forty-six (I wonder they didn't make it an even fifty) variations from health as making up the conditions and the phenomena of disease to which the human family, at this period of its civilization, may be subjected. And to these "diseases" have been given grotesque and fantastic names, as if they were entities, or individuals. Indeed, we rather look upon them as personalities. "Pneumonia attacked him." "He had an attack" of this or that. It is like a "footpad" "attacking" one. A classification of diseases, of some sort, however, has an advantage; it is, that the presence of certain symptoms and signs leads us to anticipate others, and that their order of succession reveals to us the existence of latent perturbations, as well as the nature of the causes which have aroused them.

Disease is made up of morbid symptoms and effects. But the relation of causality and dependence which unites these elements often requires that a system of treatment should take cognizance principally of symptoms, not so much on account of the value of the symptom in itself, as on account of the symptoms which depend upon it, and the morbid effects which it may produce.

Every symptom represents a constituent element of disease, but all symptoms have not the same hierarchical value, and do not all deserve to be placed in the class of morbid elements. In annulling a symptom one does not confine himself to destroying its effect, and to simplifying the morbid conditions, for by this means many others can be avoided, which would naturally and physiologically follow from the existence of the one which was to be suppressed. Symptomatic therapeutics is, therefore, in my opinion, not only curative of a portion of the disease, but preventive besides, of ulterior morbid phenomena, complications, and aggravations.

If we are called to treat a sick person, our first thought should be to discover the cause of the disease. That cause, when discovered, will be either still in existence or will have passed away. If it still exists we must do our best to destroy it, to neutralize it, or to prevent its results. If the original cause has disappeared or if it is not amenable

to treatment, we can not operate upon it, but we can and should direct our efforts upon its results. These results may be primary, secondary, tertiary, etc., and it will be our duty to fight them, choosing for particular attention ones which are the most grave, the most perturbant, and the most insupportable.

By drugs alone we can restore some of the normal constituents of the blood when they are defective; we can remove abnormal substances present in the blood, and if we have reason to suppose that the products of imperfect metabolism are present we can greatly facilitate their excretion by the kidneys and bowels. We can antagonize and destroy the effects of certain toxic matters which cause disease. We can mitigate or limit both external and internal inflammations. We can act, for example, on the inflamed mucous membrane of the bladder by sedatives, or stimulating germicidal substances; we can also influence the lining membrane of the tubes of an inflamed kidney. We can increase secretion in the neighborhood of an inflamed part, and can alter the general tension of the vascular system. The local vascular condition can be modified by dilating vessels in adjacent parts, and we can exercise a sedative influence on the mechanical conditions affecting an inflamed part. It is thus that morphine is used in peritonitis.

The products of ordinary inflammation which interfere with the functions of tissues may, when consisting of cell growths, be broken up and absorbed under the influence of mercury and potassium iodide, as the products of syphilitic inflammation certainly are. There is reason to believe also that we can cause the absorption of inflammatory deposits by stimulating the nerve endings in adjacent areas. Arsenic can be shown to have a very decided effect on the nutrition of the skin, and it often distinctly influences inflammatory deposits therein.

Drugs such as chloral, atropine, physostigmine, and strychnine act on the tissues of certain parts of the brain and spinal cord, and thereby increase or decrease the functions of those parts. We can depress the functions of the motor nerve endings with conine, and the sensory nerve endings with aconitine. We can paralyze the involuntary muscle fibers directly with the nitrites or indirectly with chloral hydrate, drugs which depress the functions of the vasomotor center. In valvular affections of the heart we cannot remove the chief pathological condition, but by acting on the cardiac muscle and its ganglia we can so strengthen and moderate the beat as practically to restore its normal function. We can stimulate or depress the tissues of the various glands. We can improve the nutrition, and therefore the function of almost all the tissues. I might go on for almost an indefinite period telling what can be done in the treatment of disease. In short, we can do as much with our medical cases as surgeons can do with surgical cases. Yet surgeons, as a rule, and many so-called authorities among medical men belittle therapeutics.

With the evolution of medicine from fetichism, medicine developed into lay and clerical practice, the ecclesiastic being forbidden to shed blood, naturally tended to internal medication, while surgery became the province of the layman. This separation of the branches of the profession led to the surgeons being affiliated with the barbers, while the internal medicine men became apothecaries and through plutocratic influences were at one time affiliated with the grocers. Through this evolution, the mutual contempt of the cleric and the layman persisted. As the search for truth became the object of the medical man, surgical and medicinal therapeutics as the end of medicine sank into the background and were overshadowed by diagnosis. Under this principle receipt-book therapy gave way to the science of internal medicine. The physician then appeared and drove commercial quackery from both surgery and pharmacy. The gap that had been created between the two branches of the healing art is well illustrated in the chaotic titles given in England to medical men. There are members of the colleges of physicians and surgeons and licentiates of the society of apothecaries practising side by side with M.D.'s. Surgery dominated for awhile therapeutics and led to the abuses of venesection. Of necessity surgery adopts either the wild reflex theory or the equally abused gross lesion, these two being the most profitable from the monetary standpoint. It requires less diagnostic skill and less scientific acumen to discover a gross lesion or a reflex disorder than it does to find remediable derangements of physiological balance. The gross lesion and the reflex have a good deal of the mechanical principle of the nickel-in-the-slot machine. The body on this principle is not a delicately balanced mechanism, but an appendix to some of its organs, removal of which or of a gross lesion in which will create recovery. The surgeon ignores the metabolic changes produced by an operation irrespective of its seat. He owes his immunity from malpractice and other serious consequences because medicine has found for him antiseptics and anesthetics. This gift of medicine has been notoriously abused for the benefit of the surgeon. Perhaps no greater evidence of this can be found than the marked change which has occurred in the position of the greater surgeons toward oöphorectomy and allied genital surgery performed for nonsurgical reasons. From the outset of Battey's operation it was opposed by neurologists and internists as dangerously and brutally useless. This position is accepted by all great surgeons, although for years the evil results of oöphorectomy were suppressed by "authority."

Authority in medicine, as in science, does not exist. No man in science is justified in claiming aught that will not be supported by control experiments. "Authorities" are men who have written textbooks most of which are antiquated when they appear and most of which are published through favor. For this reason the courts will not receive any book as authority, regarding it as a mere expression of individual opinion. The scientific spirit of the day disclaims as false and misleading authority which will not submit to test and criticism of its truth.

The self-constituted authorities in medicine have opposed every advance in therapeutics, every remedy, every method. The introduction of such valuable drugs as cinchona, colchicum, mercury, and nearly all our indigenous drugs encountered violent opposition by the alleged "authorities" of the regular school. So-called physiologic therapeutics, such as electricity, massage, hydrotherapy, were first used by "irregulars" and opposed by the "authorities." And only when they were forced to recognize their value did they "get into line." Even "suggestive therapeutics" and hypnotism, now recognized as valuable, were once denounced as unscientific and "quackish" by the "authorities." It is a strange irony of fate that resuscitated with

honor a discovery once buried in disgrace. Mesmer published his theory of animal magnetism in 1775. Ten years later the French Government appointed a commission composed of eminent physicians and savants ("authorities") to investigate his system; an adverse report brought irretrievable disrepute upon its author, and Mesmer returned to Germany to perish in oblivion. To-day his apotheosis is sealed in the generally admitted fact of the power of one mind over another, and in hypnotism is recognized a positive therapeutic force. Strangest of all, the very nation which laughed to scorn the early promulgator of this mysterious agency, but lately claimed its most ardent advocate—Charcot.

"The world moves" in medicine as in other things. The treatment by drugs becomes more simple and direct every year; in place of the old unreliable Galenical preparations, the active principles used with definite intention and a distinct aim to produce a certain effect, are being generally employed by "up-to-date" practising physicians. The *raison d'être* of the bulk of the Pharmacopœia has passed away. The active principles are now being recognized as the fixed stars in the firmament of medicine, around which a multitude of inferior lights revolve in various subordinate relations. To these remedies of unvaried and uniform strength we may trust implicitly. Contrast with these the alarming array of nauseous, unreliable mixtures, recommended from week to week in the department of "Therapeutics" in the *Journal of the American Medical Association*. Yet the erudite editor of the above-named journal and its corps of pharmacists constituting the Council of Pharmacy and Chemistry of the American Medical Association, together with a few bacteriological enthusiasts and professors assuming an omniscience prompted by limited experience, assume to dictate to the great body of active practising physicians what they should and what they should not use in the treatment of the sick. These "authorities" look upon alkaloidal medication as a menace to humanity. The learned "Council" says that up to date there are 250 odd preparations we may use. Of these there are but sixty American products and twenty-three of these are from one manufacturer. No active principles are mentioned—to me a very significant fact. If we use a remedy not "passed" upon or endorsed by these "authorities," we are considered to be "unscientific," if not an actual menace to the people generally.

Not infrequently we find that certain "professors," to say nothing of editors of medical journals and pharmacists, are men of restricted observation and not nearly so well versed in clinical experience as the average doctor who is actively engaged in bedside practice.

The time has passed when a few men can successfully set themselves up as authorities, or dictators, or arrogate to themselves any special theory or procedure. Candid practitioners to-day recognize good in all systems based upon scientific thought and pursued with intelligence and sincerity. By means of release from the shibboleths of the past, and adherence to a given "authority" or "school" the freedom of present practice is greatly enhanced, to the immense benefit of the patient and the lasting honor of the physician.

I cannot too strongly deprecate any tendency to discord and contention among a body of men to whom is accorded the highest privilege decreed by the genius of science—that of alleviating human misery. Whenever the physician's range of study and practice becomes limited by prejudice, or narrowness of intellectual vision, he falls below the standard set by the canons of Christian sympathy and the dictates of steadfast devotion to the amplest interpretation of his calling.

ABNORMAL RESPONSE TO AN IRRITATION OF THE MOTOR AREA OF THE BRAIN.*

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The present contribution is for the purpose of placing on record a very interesting and curious observation concerning an abnormal response to an irritation of the motor area of the brain.

It is a case of Jacksonian epilepsy in a boy of sixteen. At the age of twelve he began to have convulsive movements which from the beginning up to the time of the operation have been confined to the arm, neck, and face, on the left side. He never lost consciousness, and always witnessed the seizures. At first they would occur once a month, but later they became more frequent.

The patient's general condition was fairly good. In view of the strict localization of the symptoms, an exploratory operation was decided upon. A large osteoplastic flap was made on the right side of the cranium and the largest part of the Rolandic area was exposed. Dilated and tortuous veins, reminding one of angiomatous blood-vessels, were found over the upper part of the uncovered area, but the cortex appeared normal.

Dr. Da Costa, who performed the operation, put a number of ligatures on these dilated blood-vessels.

For the purpose of studying the exact localization of the motor area, I decided to irritate the cortex with a faradic current.

The unipolar method was used, as advised by Sherrington and Grünbaum. The blunt end of a very small metallic electrode was covered with a very thin layer of absorbent cotton, and during the procedure was carefully and very superficially applied to the cortex. An extremely small current was used. Every time the electrode would touch the brain tissue, contractions would be noticed on the same side. Application to the upper angle of the exposed area would produce distinct contractions in the arm and very slight in the leg; when the electrode was applied to the middle area, the arm alone would twitch and faradization of the lower angle brought on contractions of the arm, neck, and face. The remarkable phenomenon was the fact that at no moment convulsions or any twitching was noticeable on the left side. Incidentally I may add that the application of the electrode was made on the ascending frontal convolution as well as in the fissure of Rolando, and on the ascending parietal convolution. While the response was decidedly marked upon irritation of the ascending frontal, it was much less pronounced when the ascending parietal was faradized. Nevertheless, irritation of the latter gave some twitching of the extremities. I wish also to mention that, in view of the well-known precaution indicated by Grünbaum and Sherrington, the application was

*Read before the Philadelphia Neurological Society, April 23, 1907.

first made to the ascending parietal, and only then to the ascending frontal.

The striking feature in this case is the muscular contractions on the same side where the motor area was irritated. The only explanation, in my judgment, is an anomaly of the pyramidal tract. There are two kinds of abnormal arrangements of this tract. One is a bilateral absence of decussation; the crossed bundles are wanting on both sides of the cord, and the pyramidal bundles are represented by very enlarged Türck's columns. This is a very rare occurrence. The other is a unilateral absence of decussation; the crossed bundle is absent only on one side; the pyramid has never been divided, and forms one large bundle of direct fibers. This is also not frequent.

As the opposite hemisphere in my case was not exposed, and therefore not experimented upon, it is difficult to say which of the two anomalies may be the cause of the unusual phenomenon. All mammifera possess a decussation of pyramidal bundles except the elephant, but in man it is extremely rare.

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A CASE OF MULTILOCULAR GLANDULAR CYSTOMA COMPLICATING PREGNANCY.*

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Mrs. M., 24 years of age, mother of three children, was always healthy. Her menstruation was always regular since her fourteenth year. Five weeks previous to her coming to my office she had given birth to a healthy child, the labor having been perfectly normal, assisted only by a midwife. The patient was able to sit up in bed three days after her confinement, and a week later she left her bed and attended to her regular duties. Five weeks after her confinement the patient was suddenly seized with acute violent pains in the right inguinal region, extending to the back. The physician called in thought of appendicitis and advised the patient to go to New York to be ready for an operation.

Upon her arrival in New York she consulted Dr. M. Cisin, who felt a tumor in the pelvis, which appeared to be the subinvoluted uterus, and he sent the patient to me for treatment.

At the examination on September 16, 1906, I found the patient to be a well-nourished woman, the face somewhat flushed and respiration quickened. She was suffering from constant pain, mostly in the back, but not so excruciating as on the first day of the attack. The abdomen was somewhat enlarged and tympanitic. The entire lower abdomen was very sensitive to the touch. The combined examination showed the tumor to be distinct from the uterus, which was in a normal position, the tumor lying higher up on the right side. It was composed of several lobules of varying consistency and size. Some of them showed distinct fluctuation, others were soft to the touch, while the rest was of a solid, hard consistency. My diagnosis, therefore, was multilocular glandular cystoma of the right ovary, and I recommended an operation. Two days later the patient was seized with another attack, with almost unbearable pains in the back and in the right inguinal region, and she then entered the hospital.

The abdomen was greatly distended and tympanitic, with ascites on both sides when the patient was lying on her back. The pulse was now 110, the temperature 102° F., and the patient showed symptoms of a beginning general peritonitis. The diagnosis was "torsion of the pedicle of the cystoma."

The next morning, September 19, the patient was operated upon, with the usual incision in the linea alba. Upon opening the peritoneal cavity about a quart of a bloody fluid escaped, so that the assistants at the first sight exclaimed "extrauterine gestation." The tumor was now freed from its bed and brought forward to the abdominal opening. It was of the size of a child's head and could not pass the comparatively small incision until I perforated the longest cystic lobe and allowed the amber colored serum to escape. The entire tumor was thereupon brought outside of the abdominal incision, when it was found that the long pedicle was twisted, having two corkscrew turns and causing gangrene of some parts of the tumor. The pedicle was now compressed with the angiotribe, ligated, and the cystoma excised. The stump was thereupon covered with peritoneum by embedding it beneath the ligamentum latum, after Segond's method.

The examination of the tumor showed a number of different lobes, two of them were cystic in character, containing a clear amber-colored fluid, one lobe enclosed in its cavity a gelatine-like mass and another one had a very small cavity with thick fibrous walls, containing calcareous incrustations on the interior surface. Some lobes were almost solid. The entire tumor was, therefore, unmistakably a multilocular glandular cystoma of the ovary.

The case is interesting from the point of view of the previous delivery. The patient was confined by a midwife without any artificial aid, and a few hours after the labor pains had begun, five weeks previously. Yet she had within her abdomen a tumor of the size of a child's head. For it is scarcely probable that the glandular cystoma had materially increased within the last few weeks after the confinement. The only explanation why this large tumor did not cause any dystocia is that the rising uterus gradually raised the tumor above the pelvis. Thus the location of the tumor at the time of delivery was high above the pelvic rim and did not interfere with the child's head. After the confinement the normally involuted uterus dropped back within the small pelvis and with it also the tumor, the latter now being located in the right pelvic fossa, directly upon the muscles ischio-coccygeus and coccygeus. In this position the torsion of the pedicle is not to be wondered at. The two attacks coincided with the two turns of the pedicle.

The history of this case shows that even large tumors do not always cause dystocia. In Niebergall's case* of a fibroid complicating pregnancy a spontaneous delivery also took place after the tumor was raised out of the pelvis in the seventh month of pregnancy. In Pollosson's case† a dermoid cyst was diagnosed during the first pregnancy and its removal advised. This pregnancy ended with an abortion in the fifth month. But the second and third pregnancies terminated normally and only during the third month of her fourth pregnancy a torsion of the pedicle took place, and the patient had to be operated upon.

Such cases serve to show that even large tumors complicating pregnancies are not always an indication for the removal of the tumor during the period of gestation, thus endangering the lives of mother and child by the complication of a possible miscarriage.

62 West One Hundred and Twenty-sixth Street.

*Read before the Medical Society of the County of New York, March 25, 1907.

*Niebergall: Cor. Bl. f. Schweitz. Aerzte, 1905, p. 525.
†Pollosson; *Lyon Méd.*, 1905, p. 1085.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ARE THE SETTLERS OF WESTERN CANADA DOOMED TO FAILURE?

A FEW years ago little was known of the Canadian provinces to the west of Manitoba, and indeed of Manitoba itself, and all this vast region was thought of only as a frigid waste from which came the cold waves which periodically sweep across the United States, carrying frost into Texas and even to the orange groves of Florida. But lately it has been found that that country is one of exceeding fertility, the richness of soil and the brightness of sunshine combining to make it admirably adapted to the growing of wheat, despite the pitiful brevity of its summer. A migration of large proportions has been setting in from the United States and Europe, and this region now promises to become one of the great granaries of the world. The cold of winter is long continued and intense, but the heat of summer is ample in intensity and duration for the ripening of grain, the soil is rich, and the unoccupied land is of almost limitless extent and capable of supporting a very large population, so that the prosperity of this new territory would seem to be assured. There is but one cloud overshadowing this hoped-for prosperity, and this is, to abandon the language of metaphor for that of fact, the absence of cloud. The country is one of almost continuous sunshine, the brilliancy of the light equaling that of the tropics, and if it is really the light rather than the heat which bars tropical lands to the white man, as Woodruff contends, the prosperity of the Canadian Northwest promises to be shortlived.

As those who have read Major Woodruff's interesting book* know, he holds that the failure of the white races to colonize the tropics is due, not to the heat of these regions, but to the excess of light which there prevails. The Europeans who have been most successful in colonizing tropical regions, that is, who have themselves peopled the colonies and not merely ruled them by a constantly changing staff of officials, are the natives of the Iberian Peninsula, a dark-skinned race; and to blonds, Woodruff asserts, tropical lands are fatal. If it is the heat rather than the light that is injurious, the white man should prosper more than the black man, and the blond more than the brunette, since the presence of pigment in the skin distinctly favors the penetration of the heat rays. But the white man, especially the blond, suffers in the tropics; after a period of exhilaration and sense of well-being, he becomes disinclined to labor, grows neurasthenic, and finally breaks down physically and mentally. This Woodruff attributes to the action of the actinic rays of light, which penetrate the more readily the less of pigment there is in the skin and hair, and he therefore concludes that it is the light rather than the heat which bars the white man from the tropics.

In the *Western Canada Medical Journal* for February, 1907, the Rev. E. C. Heustis asserts that the inhabitants of Manitoba and the adjacent territories are unduly neurasthenic, and, adopting Woodruff's theory, attributes this condition to the excess of sunshine with which that country is blessed—or cursed, according to the point of view. In the issue of the same journal for May of this year, Dr. A. G. Welsford controverts Mr. Heustis' contention, and asserts that sunlight is a blessing. He concedes that sunlight is destructive to protoplasm, but says that the actinic rays do not penetrate the skin to any extent, the deeper tissues being protected by the epidermis and especially by the dermis, which is suffused with red blood offering a barrier as effective as the black pigment of the negro's skin. The reason why Europeans do not thrive in the tropics is, he maintains, that they are attuned to colder climates, and when transplanted to warm regions live under abnormal conditions of heat rather than of light. He does not deny that the denizens of the sunlit regions of Northern Canada suffer from neurasthenic states, but he asserts that these depend "in no way upon the sunshine," except as this may have an indirect effect by reason of its tonic properties which lead to the undue expenditure of energy. In another part of his article he admits, indeed, that intense and long continued sunshine may prove exhausting, but he rejects Woodruff's theory of its action, attributing its possible evil effects to eyestrain, resulting from the glare. We fear Dr. Welsford has not proved his case, for he concedes that intense sunlight may be injurious, differing from Woodruff and Heustis only in his explanation of its action. The farmers who are now peopling western Canada are not going to wear colored glasses to prevent eyestrain, and they are not going to take life easy, for they must work hard to reap their harvest before the winter frost, and they will not work the less hard because the light stimulates them to greater endeavor.

An interesting experiment is being worked out in Manitoba, and it is one which should in its results confirm or refute Woodruff's theory. If he is correct, the movement of wheat growers, most of whom are Scandinavians or men of other blond races, to northwest Canada is doomed to failure. Those who are now building up the country will fall by the way and their farms will be abandoned or will be taken by fresh immigrants ignorant of the forces against which they will in vain contend. If the prosperity of the Northwest continues, if the population is permanent, and if success rewards the labors of the settlers in this land of sunshine, Major Woodruff will have to add a chapter to his interesting book explaining the antidotal effect of cold, or of some other natural force, upon the deleterious action of sunlight.

*The Effects of Tropical Light on White Men, by Major Charles E. Woodruff, A.M., M.D., Surgeon, U. S. Army. New York: Rebman Company, 1905.

AN UNOCCUPIED FIELD OF PRACTICE.

THERE is an enormous amount of suffering among the rural population of this country, especially the wives and daughters of farmers, due to uncorrected astigmatism and other ocular defects. On first thought one may be inclined to doubt the correctness of this statement, for the farmer is supposed to lead an outdoor life and to be little given to literary pursuits. But this is not true of many, if not the majority, of the rural population. In most farm houses of the better class one will find the weekly political paper and one or more agricultural or poultry journals, and in not a few several of the magazines and weekly story papers are also taken and faithfully read from cover to cover. Moreover, the women have their sewing and their mending and their fancy work—more eyestrain, in fact, than many of their well-to-do and perhaps better educated sisters in the city. Numbers of these poor women are martyrs to headache, gastric disorders, and other ocular reflexes, ignorant for the most part of the cause of their suffering and unable, even if they suspect that their eyes are "weak," to obtain relief. At the best, or worst, they go to the country store and select from a small assortment the spectacles which they think they need, and their last state is perhaps worse than the first. The country doctor is seldom able to help them, for as a rule, up-to-date, sensible, and skillful practitioner as he is, he lacks the practical training and experience necessary for the correction of errors of refraction, and even if he has the qualifications needed for such work the demands of a country practice leave him no time for the tedious work of testing eyes.

Herein lies an opportunity for relieving suffering and attaining material success which is worthy of the consideration of the recent graduate in medicine. Specialists must, from the nature of their restricted practice, live only in the cities and larger towns, where the number of consultations are sufficient to occupy their time and afford them a living practice. But in the case of refractive errors especially, which are still so wrongly regarded as among the minor ills, the farmer and his women folk cannot afford the time and expense of a journey to the city in search of relief. There is need here for missionary effort, and, contrary to the rule of most missionary endeavor, the man who undertakes such a needed work will reap an ample reward. There is an opening in nearly every county of every State in the Union for a thoroughly trained and skillful oculist who will establish a circuit of small towns in each of which he has an office in which he may be consulted, say two days a month or a fortnight, by the country people in the district. The man should be an educated physician, with hospital training—as should be every specialist—and preferably with an experience of several years in general practice, during which time he has devoted his unoccupied hours to a study of the eye and its diseases and of refractive errors and the means of their detection and correction. He should indeed, be the equal of any of his fellow specialists practising in the city. His way at first may not be easy, for he will be a missionary and his task will be to educate the people, through their medical advisers, to an appreciation of the rôle of eyestrain in the causation of many of the headaches and "dyspepsias" from which they suffer. He must be tactful in his relations with the practitioners in the towns embraced in his circuit and should of course confine himself strictly to his specialty and not encroach on the general practice of his colleagues. It will not be long, however, before such an "itinerant oculist," if he is skillful, and as honest and tactful as he is skillful, will make his way. One successful case in each town will establish his reputation, for farmers' wives are great gossips, and if he is careful to respect the rights of the local physicians they will be only too pleased to send him their teazing cases and "chronics" that their medicines have not relieved and which they will themselves soon learn to recognize as "eyestrain" cases and gladly refer to the oculist for relief.

There is nothing unethical in such a practice. Traveling quacks have caused honest physicians and intelligent laymen to regard the "itinerant" with suspicion, but the origin of all specialism was in quackery and it was only when reputable practitioners began to devote themselves exclusively to a study of special diseases that the stigma attaching to special practice was removed. There are even now many reputable physicians and specialists who have offices in two or more places in the same city or in different cities, and a slight extension of this principle by educated, earnest, and honest young ophthalmologists will cause the itinerant oculist (not optician) to be regarded as a valued and honorable member of his profession.

THE SIGNIFICANCE OF QUINQUAUD'S SIGN.

THE sign to which the above title was given by Maridort after the death of Quinquaud consists in an exceedingly fine crepitation to be perceived when the person under examination places the tips of his slightly separated fingers against the palm of the examiner's hand which is held horizontally. According to its originator this crepitation is to be perceived only when the patient is a chronic alcoholic, and numerous observers who have tested the matter on large numbers of persons of various types have concurred in this statement. For example, Fürbringer who examined 468 persons, Levienik who examined 200 persons, and Hoffmann and Marx who examined 1,018 persons, all expressed themselves favorably in regard to the sign, though with certain reservations. Contrary opinions have not been lacking, however, and Lauschner has asserted that neither the presence nor the absence of Quinquaud's sign has any bearing on the question of the amount of alcohol consumed by the patient.

A recent and very exhaustive consideration of the question is that of Minor of Moscow (reported in the *Berliner klinische Wochenschrift*, May 6, 1907), who has investigated the subject on a very large number of persons of all classes and types, including many patients suffering from a variety of nervous diseases. This author has sought to simplify the matter by rendering the detection of the phenomenon independent of the observer's tactile sense. This is accomplished by transforming the sign into

an auditory phenomenon. The patient's fingers are applied to a small wooden resonator which is in contact with the diaphragm of a phonendoscope, and in this way the experiment is always carried out under similar conditions, and the existence or absence of the crepitations is rendered unequivocal. Minor comes to the conclusion that Quinquaud's phenomenon is neither specific nor pathognomonic for alcoholism, and that it is frequently present in well-marked form in moderate drinkers and total abstainers. It is rarely seen in exophthalmic goiter, paralysis agitans, arthritis deformans, hemiplegia, and Dupuytren's contraction, but is exceedingly frequent in tabes. Hysteria comes next to tabes in the frequency and intensity with which the crepitations are to be detected, and alcoholism occupies only the third or fourth place. Alcoholic tremor of the permanent form, as distinguished from the trembling immediately consequent on a debauch, is less often encountered than the phalangeal crepitations, and is entirely independent of these in nature and causation.

Apparently this phenomenon is one of hypotonicity and is a very delicate test for neuromuscular fatigue. What muscles are concerned in its causation is still an open question, but the fact that it sometimes is present when there is extreme atrophy of the interossei seems to indicate that the long forearm muscles are implicated in its causation.

THE CAUSE OF ASEPTIC PURULENT INFLAMMATION.

Inflammation may be caused by bacteria, chemical substances, or traumata. While, as a general rule, the time-honored dictum, "no pus without bacteria," holds good, it has long since been proven that certain chemical substances injected into the tissues can cause an aseptic purulent inflammation. Heretofore no experiments have absolutely proven that a purulent inflammation can be brought about by the products of an aseptic disintegration of tissue, caused by a trauma. As all purulent inflammations are caused by the chemotactic influence of the pyogenic substances on cells, the question arises whether aseptically destroyed tissue contains positive chemotactic substances. To determine this point, L. Burkhardt (*Deutsche Zeitschrift für Chirurgie*, Vol. 85, 1907) has conducted several interesting experiments. Under aseptic precautions a piece of muscle tissue was removed from a rabbit and ground up into a pulp, decinormal salt solution was added to it, and the mixture was allowed to stand for 24 hours. At the end of that time it was filtered and the extract of the muscle pulp was carefully sealed in small sterile tubes. Cultures of this extract on bouillon, agar, and gelatin showed no growth. The small tubes were buried under the skin of other rabbits and their ends were broken off subcutaneously. In all cases, aseptic pus was found at the ends of these tubes after three days. Control tests were made with tubes containing decinormal salt solution and an extract obtained by immersing intact muscle tissue in salt solution; in neither case was any pus found. Crushed muscle tissue therefore contains substances which have a positive chemotactic action, the extent of the aseptic purulent inflammation depending, as these experiments would appear to prove, upon the degree of trauma and the rapidity of resorption.

Burkhardt also made similar experiments to ascertain what effect heat had in the production of positive chemotactic substances. A piece of muscle was charred superficially and an extract obtained and enclosed in sealed tubes as before. The tubes were again placed under the skin of rabbits, where they were broken subcutaneously. After from four to six days aseptic pus was found at the ends of the tubes. The fact that crushed and charred tissues were found to contain positive chemotactic substances, which, experimentally at least, produced an aseptic purulent inflammation, should be borne in mind during the course of an operation, in which the excessive use of sharp retractors and much unnecessary handling of the tissues, as well as an unduly extensive employment of the galvanocautery, may sometimes be the cause of a local purulent inflammation.

Septic Infections and Acute Leukemia.

A number of observers have reported cases in which septic infections of various sorts were associated with blood pictures corresponding to that of acute lymphatic leukemia, and it has been suggested, for example by Türk, that in these cases the septic condition is primary and stands in a certain etiological relationship to the blood disease. This opinion has not as yet, however, been universally accepted, and Erb in a posthumous communication (*Deutsche medizinische Wochenschrift*, May 23, 1907) expresses the opinion that so far there is no conclusive experimental or clinical evidence to prove that sepsis may give rise to general lymphomatosis. He prefers to accept the view that the septic infections sometimes associated with acute leukemia are secondary complications, and points out that patients suffering from this blood disease are unusually prone to such infections. Why this should be so is difficult to say, but it is not impossible that the reduction in the number of polymorphonuclear leucocytes may in some cases favor the invasion of infectious organisms.

The Etiology of Pemphigus Neonatorum.

It is sometimes considered that this affection, leaving aside the syphilitic form, is not a disease *per se*, but is a condition of complex etiology representing simply the reaction of the infantile organism to infectious agents of various sorts. A case in point is reported by Kaupe (*Münchener medizinische Wochenschrift*, May 21, 1907), who found a ten-days-old child exhibiting the classical picture of pemphigus neonatorum. There were no indications of syphilis in the other members of the family, and on investigating it was discovered that at the time of the infant's birth the mother was suffering from an eruption which was later found to be chickenpox. The infection had been brought into the house by the midwife, and two other children also were subsequently infected. In this case it appeared that the pemphigus eruption represented the varicella exanthem in an infant whose blood had not yet developed sufficient protective substances to cause the lesion to assume its ordinary form.

Thymol in the Treatment of Goiter.

In the treatment of cases of endemic goiter, the use of a pure water and removal from the affected localities are recognized as among the most important steps, and have given better results than most of the drug treatments. According to McCarrison, however, thymol may be employed with good success in this type of goiter, its action being explained by the fact that it is an intestinal antiseptic, for the disease is regarded by many as parasitic in character with the infection taking place through the medium of the digestive tract. McCarrison reports twenty-five cases successfully treated by this drug, and in especially favorable instances a disappearance of the struma was noted within seventeen days after the beginning of treatment. The thymol is given in doses of 1.8 gram twice a week, followed by a cathartic in the evening, and on the intervening days it is given in doses of 0.6 gram morning and evening. Its administration may be continued until the goiter has disappeared. In none of the cases thus treated by the writer did a period of more than two months elapse before a favorable effect was evident.

A Rare Histological Finding.

It is very often by mere chance that microscopical structures of great interest and value are discovered. As an instance of this attention is directed to a recent communication by Welch (Bulletin of the New York Lying-In Hospital, March, 1907) in which he describes and illustrates a human Graafian follicle containing two ova. Considering the manner of development of these structures, it is rather surprising that multiple ova are not more frequently found. The description of this process given in Quain's textbook leaves the impression that where there is more than one primordial ovum included in the Graafian follicle fusion results. And most writers state that only one ovum occurs, although a few others deny this without, however, citing concrete instances in which such a condition has been found. Dr. Welch's discovery is of considerable interest from the embryological standpoint.

News of the Week.

Retirement of Dr. Andrew H. Smith—Dr. Andrew H. Smith, for many years one of the foremost practitioners and consultants of this city, has retired from practice and removed his residence to Geneva, N. Y. Dr. Smith began his professional career as an army surgeon and upon his return to civilian life, soon after the close of the Civil War, entered upon practice in this city, where he has filled many positions of prominence in the profession, including the presidency of the New York Academy of Medicine. He was also attending physician to St. Luke's and the Presbyterian hospitals and surgeon to the Manhattan Eye, Ear, and Throat Hospital, and held the position of consultant in a large number of institutions. He has been a frequent contributor to medical literature.

Centennial Anniversary of the College of Physicians and Surgeons.—Over two hundred guests were present at the dinner of the alumni association of the College of Physicians and Surgeons of Columbia University given last week in honor of the hundredth anniversary of the school. Dr. T. M. Cheesman presided and among the speakers were President Nicholas M. Butler, Dean S. W. Lambert, Rev. Dr. Aked, Dr. Darlington, and Mr. Geo. L. Rives. In connection with the anniversary celebration demonstrations and clinics were held in the college building, in the Vanderbilt Clinic, and in the Roosevelt and other hospitals. Addresses were also delivered at the college by President Butler, Prof. John G. Curtis, and Professor W. H. Welch of Johns Hopkins University.

Compliment to Dr. Grenfell.—Mr. Wilfred T. Grenfell, L.R.C.P., M.R.C.S., on May 28 received from the University of Oxford the honorary degree of M.D.; this is said to be the first time in the history of the university that this honorary degree has been conferred. The honor was given in recognition of Dr. Grenfell's self-sacrificing work among the fisherfolk of the Labrador coast. At first he worked on board the mission vessels in the North Sea, but in 1892 he initiated work of a similar kind among the fishermen in Labrador, where, having obtained his certificate as a master mariner, he commanded his own vessel. In Labrador and Newfoundland he has helped in establishing four hospitals, besides various cooperative stores and other institutions for the good of the inhabitants. Recently Dr. Grenfell delivered several lectures in this city descriptive of the life of the people among whom he does his work.

Strauss Milk Booths.—The fifteenth season of the Strauss pasteurized milk booths began on Monday, when eleven new booths were opened in addition to the six that were operated last year. The stations are located as follows: 151 Avenue C, 47 Monroe street, 441 West Thirty-third street, 329 East Fifty-ninth street, 303 East 111th street, 38 Macdougal street, Battery Park, City Hall Park, Tompkins Square, Central Park, Mount Morris Park, Hebrew Educational Alliance, East Broadway and Jefferson street, Recreation Pier, East Third street; Recreation Pier, East Twenty-fourth street; Recreation Pier, East 112th street; Recreation Pier, Barrow street; Recreation pier, West Fiftieth street.

International Red Cross Conference.—At the final session of the International Red Cross Conference in London, Lieutenant-General Bessim Omar Pasha announced that he represented the Mohammedans and owing to the fact that the symbol of the cross opposed every religious belief of his people, he demanded that the organization in future adopt the crescent as a symbol instead of the cross and be called the Red Crescent instead of the Red Cross. The proposition was disposed of by ruling the speaker out of order. In addressing the conference Baron Ozawa, Vice-President of the Red Cross Society of Japan, said the Japanese Ambulance Corps during the Russo-Japanese War had to deal with 622,688 cases, and the number succored in hostile camps and on hostile ships raised the number to far above a million. This was all done at an expenditure of less than $2,500,000. The small cost was due mainly to the strict centralization of the Japanese system. No women nurses were employed. The conference also passed resolutions declaring it within the province of the society to care for and succor prisoners as well as the ill and wounded, and relating to the treatment of soldiers discovered to have tuberculosis.

Charcot's Library.—Dr. Jean Charcot has presented to the Salpêtrière in Paris the entire library of his father, which is considered one of the foremost collections of neurological literature in the world. Dr Charcot has also presented to the same

institution with which the elder Charcot was so long connected, the furniture of the celebrated scientist's study.

To Destroy Anthrax Germs.—A technical chemist of Dewsbury, England, has discovered an electrolytic process by means of which it is possible to sterilize rags, etc., in large quantities, and it is claimed that in this way wool workers may be freed from the risk of contracting anthrax, as the process can be used to kill the anthrax bacilli and spores in the crude material.

Eyeglasses for School Children.—The Board of Education has passed a series of resolutions requesting the Board of Health to make a systematic investigation of the eyesight of the children in the public schools, with a view to the free distribution of eyeglasses to those whose sight is found defective.

Mechanotherapy Appliances for the German Hospital.—The German Hospital has installed in the gymnasium of the dispensary in the Anna Ottendorfer Building of the hospital at Seventy-sixth street and Park avenue, twenty-four pieces of apparatus for the purpose of giving mechanical treatment and medical gymnastics.

Typhoid Fever in Pittsburg.—The occurrence of numerous cases of typhoid fever at several upriver points has alarmed the health authorities of Pittsburg and warnings have been issued to the people to use only boiled water. On June 18, forty-one new cases of the disease were reported in the city, and during the first eighteen days in this month there were 228 cases.

Plague in Trinidad.—Owing to the increase of bubonic plague in Trinidad, Venezuela has suspended traffic with the island.

The New Harlem Hospital.—The new Harlem Hospital at Lenox avenue and 136th street was formally opened on June 15, although it has actually been in operation for some weeks and nearly a hundred patients are at present in its wards. Dr. John W. Brannon, president of the board of trustees of Bellevue and Allied Hospitals, presided, and Comptroller Metz made the principal address. The hospital is a large five-story brick building, accommodating 150 patients. Its cost, including that of the power house and ambulance stables, was $624,000. In the fall the erection of another building on the same plot for a nurses' ward is to be commenced.

American Association of Medical Examiners.—At the meeting of this organization, held in Atlantic City on June 3 and 4, the question as to the amount of the fees that should be allowed by life insurance companies for the proper examination of an applicant was considered and it was the unanimous opinion of the association that life insurance companies should pay a minimum fee of five dollars for each and every examination. A resolution was presented and adopted in which the Association recorded itself as being in favor of a portfolio of Health to be established by the Federal Government, with the Secretary a physician and ranking in authority with the other members of the President's Cabinet. It was decided to hold the next annual meeting of the Association at Chicago, the time to be determined later. The following officers were elected to serve for the ensuing years: *President*, C. H. Harlow, Philadelphia; *Vice-Presidents*, Liston H. Montgomery, Chicago, Frank E. Allard, Boston, B. J. O'Connor, Louisville, Ky., E. O. Kinne, Syracuse, N. Y., T. Millman, Toronto, Canada; *Secretary-Treasurer*, John Guy Monihan, New York.

Association of American Physicians.—The next meeting of this organization will be held in Washington, D. C., May 12 and 13, 1908. The president is Dr. James Tyson of Philadelphia and the secretary remains Dr. Henry Hun, 149 Washington avenue, Albany, N. Y.

Toronto Academy of Medicine.—Under this title the Toronto Pathological Society, the Toronto Clinical Society, the Toronto Medical Society, and the Ontario Library Association have been united in a single organization and the separate constituent societies have been disbanded. The officers of the new Academy are as follows: *President*, Dr. J. F. W. Ross; *Vice-President*, Dr. McPhedran; *Hon. Secretary*, Dr. H. J. Hamilton; *Hon. Treasurer*, Dr. D. J. G. Wishart; *Council*, the above mentioned officers and Drs. Irving H. Cameron, H. A. Reeve, H. A. Bruce, J. T. Fotheringham, A. A. Macdonald, H. P. Anderson, W. P. Caven, E. E. King, John Amyot, F. M. G. Starr, R. D. Rudolf, R. J. Dwyer.

Maine State Homeopathic Society.—The forty-first annual meeting of this organization was held in Augusta on June 11. It was decided to hold the next meeting in Portland, and officers were elected as follows: *President*, Dr. R. S. Graves, Saco; *Vice-Presidents*, Drs. John T. Palmer, Portland, and W. H. Kennison, Madison; *Recording Secretary*, Dr. Luther A. Brown, Portland; *Corresponding Secretary*, Dr. Carrie E. Newton, Brewer; *Treasurer*, Dr. William S. Thompson, Augusta.

New Hampshire State Homeopathic Medical Association.—At the annual meeting of this organization, held in Concord, officers were elected as follows: *President*, Dr. J. E. Willis, Somersworth; *Vice-President*, Dr. C. A. Sturtevant, Manchester; *Treasurer*, Dr. Herman Christophe, Manchester; *Secretary*, Dr. R. V. Sweet, Rochester.

Dr. William Seaman Bainbridge of New York City received the degree of Doctor of Science at the annual commencement of the Western University of Pennsylvania, June 7.

Obituary Notes.—Dr. Lamar Seeley of Portland, Ore., died suddenly on June 14 in St. Luke's Hospital at the age of twenty-six years. Dr. Seeley was a graduate of Williams College and received his medical education at Johns Hopkins University, from which he was graduated in the class of 1906. He had been an interne in St. Luke's Hospital for about six months.

Dr. Samuel S. Wallian of this city died of pneumonia on June 12. He was born in Brookfield, O., in 1835 and spent his early life in Wisconsin. He served through the Civil War and subsequently studied medicine. He had practised in this city for over twenty years.

Dr. John A. Robinson of Elmira, N. Y., died on June 14, ten days after an operation for appendicitis. At the time of his death he was City Coroner of Elmira.

Dr. Cyrenus A. David of Chicago died on June 12 of septicemia due to an infection received in the course of an operation. He was born at Olney, Ill., and was sixty-two years of age.

Dr. Charles Evert Cadwalader of Philadelphia lately a resident of London, England, died suddenly of heart disease in that city on June 12.

Dr. William J. Swinton of Somerville, N. J., died on June 14 at the age of fifty-eight years. He was born at Florida Springs, N. J., and received his early education in France. In 1872 he was graduated from Bellevue Hospital Medical College and

he then completed his medical training in Paris. For many years he was physician for the Central Railroad of New Jersey.

Dr. JOHN J. MORRISSEY of this city died on June 14, following an operation for depressed fracture of the skull. While attempting to board a car last Monday he fell and received the injury. Dr. Morrissey was born in Hartford, Conn., forty-eight years ago, and was graduated from Villanova College and the College of Physicians and Surgeons. He was visiting physician to St. Joseph's, St. Vincent's, and St. Francis' Hospitals, and the Metropolitan Hospital and Dispensary.

Dr. GEORGE EMERSON KING of Kalamazoo, Mich., died suddenly on June 6 of apoplexy. He was born in Erie, Pa., forty-seven years ago, and was graduated from the Western Reserve Medical College at Cleveland in 1882. He began practice in Mattawan, where he resided for fifteen years, and then removed to Kalamazoo.

Dr. J. P. HAMPTON of Meridianville, Ala., died on June 8, after a long illness. Dr. Hampton was eighty-two years of age and had served with distinction in the Civil War as captain in the Forty-third Mississippi Infantry. He was several times representative for Madison county in the State Legislature and served many terms as president of the Madison County Medical Society.

Dr. HENRY C. IDE of McIndoes, Vt., died in Burlington on June 5 at the age of thirty-eight years. He was a graduate of Dartmouth Medical College and Bellevue Hospital. He had practised in McIndoes for about ten years.

Dr. SYLVESTER D. LEWIS, formerly of Amsterdam, N. Y., died on June 16 at the home of his son, Dr. George Griffin Lewis, in Syracuse, at the age of seventy-nine years. Dr. Lewis was a member of the class of 1857 of Union College and received his medical education in the Albany Medical College.

Correspondence.

INDICANURIA.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The article by Dr. Porter on Indicanuria in your issue of June 15 is on a subject to which, I think, too little attention has hitherto been paid. This article, read in connection with Herter's recently published "Bacterial Infections of the Digestive Tract" (New York, The Macmillan Co., 1907), sufficiently indicates the importance of the subject. For a long time I knew of no means of combating the condition other than restriction of the amount of protein in the diet, and it was not until I read the following in Metchnikoff's "The Nature of Man" that it occurred to me to use any other means. This writer says: "Investigations recently made by Bienstock and confirmed by Tissier and Martelly have proved the existence of certain microbes that sour milk, *i.e.* cause the formation of lactic acid, and which are antagonistic to the microbes of putrefaction. The latter multiply only in an alkaline medium. The lactic acid microbes produce large quantities of acid and so hinder the multiplication of the organisms of putrefaction. . . . Such facts explain how it is that lactic acid frequently stops some cases of diarrhea, and why treatment with lactic acid is so useful in maladies associated with putrefaction of the intestinal contents. It makes intelligible, moreover, the medicinal value of fermented milk."

This suggested the thought that possibly the lactic bacteria would measurably control the indicanuria. For some time past I have used them with this object in view, and am now thoroughly satisfied that they accomplish the object sought. The observations have been made both on myself and on patients, and the result has been a notable decrease of the indicanuria in the majority of cases. I have experimented with several different bacteria of the acidifying type—both coccal and rod forms—and have taken and administered the pure cultures direct, but prefer to "dope," say a quart bottle of sweet milk with the culture. If this be kept for twenty-four hours or so at a temperature of 80° to 85° F. it will be ready for use. A little of this (15 to 20 c.c.) added to a bottle of fresh milk will acidify it in like manner. This may be kept up for a week or ten days, when it will be well to start a fresh series by resort to a pure culture.

It is only recently that I learned that Dr. C. A. Herter ten years ago, experimenting with dogs, markedly reduced the amount of indican in the urine by feeding them with cultures of lactic bacteria. Dr. Herter's observations were published in the *British Medical Journal*, December 25, 1897. Here was a discovery made by a physiological chemist that appears to have been passed unnoticed by the majority of clinicians. I have not looked very thoroughly into the literature of indicanuria, and it is possible that some may have made practical clinical use of Herter's observations, or, like myself, have been led in the same direction through the influence of Metchnikoff's writings.

HENRY G. PIFFARD, M.D.

NEW YORK.

OUR LONDON LETTER.

(From Our Special Correspondent.)

GENERAL MEDICAL COUNCIL—GOVERNMENT VACCINATION BILL—MEDICAL SOCIETY; THE ORATION, HEART DISEASE, MOVABLE KIDNEY—MALTA FEVER—DR. WOLLASTON'S RETURN FROM CENTRAL AFRICA.

LONDON, May 31, 1907.

THE General Medical Council met for the summer session on Tuesday, when the president, Principal Macalister, delivered an address, in which he expressed satisfaction at the completion of the negotiations for reciprocity with Nova Scotia. The provincial authorities had shown every desire to meet the requirements of the Council, and Nova Scotian degrees will now be registrable. An incidental consequence is that Canadian medical graduates who have complied with the conditions applicable to the Maritime Provinces will be eligible for commissions in the R. A. M. C. As to the Province of Quebec some further inquiry respecting the conditions of admission to its register is being made through the proper channels.

The International agreement on the unification of Pharmacopœia formulæ will necessitate some alterations to the British Pharmacopœia, but probably not so many as some other countries will have to make. The action of the British Medical Association in becoming complainants in cases that may be brought before the Council has been submitted to the legal advisers, who have recommended that Councillors should withdraw from the Association.

The old dispute about the Apothecaries' Hall of Dublin again came up, and a good deal was said about the returns asked for as to the number of licenses of that body. Several regarded it as a flank attack. The truth is that the Council has no authority to consider whether the Hall should be a qualifying body or not. That has been decided by Parliament, and although I know of no one who would assert that it is a necessary, or even a useful institution, I know many who would say that there are other authorities represented on the Council which they look upon as of about the same value.

There was also a discussion on clinical teaching, in which it was alleged that practitioners are turned out by the licensing bodies full of theoretical knowledge, but sadly deficient in practical resources. No doubt much is to be said on this point, but the discussion at the Council contributed nothing of importance.

The Government Vaccination Bill has been read a second time. It aptly illustrates the way in which the boasted "strongest government" panders to any group of fanatics who make noisy assertions. Sir J. B. Tupe pointed out the many objections to the measure and the utterly illogical character of its provisions. No honest, "conscientious objector" would be materially affected, as he was willing to take the trouble to obtain the exemption provided for, but a great number of people were dragged in his train who had no convictions, but followed the agitators to the danger of the public. There was no justification for endangering the whole people at the request of a small number of persons.

Sir H. Craik, another University member, denounced the bill as a dangerous concession to prejudice and ignorance. The investigations of science should have some weight. He asked how far we were to go in concessions to whim of this or that man might call a conscientious objection. Mr. John Burns, who defended the bill for the government, made rather an apology for it than a defence, and one, to which shows that it is a mere party move to conciliate the faddists, with utter carelessness as to the danger to the

people. He said they had promised a reduction in cost; they had also promised some form of declaration, instead of the magistrate's certificate; they had also promised the postponement of vaccination to a later period. These promises (made to get votes) are obviously the only reasons why the government has brought forward the bill, unless perhaps the hope he expressed that it would go far to end the nuisance of the controversy. It seems a shocking instance of setting the success of party before the good of the country, and the indifference of politicians to the public health.

The reception of the Medical Society of London on Monday evening was attended by some 200 fellows and members of this and sister societies. In the absence of the president, Mr. C. A. Ballance, through illness, which was much regretted, the guests were received by Sir John Tweedy and Sir E. Venning, the first named of whom made sympathetic reference to the loss lately sustained by the Society through the death of Sir Joseph Fayrer, one of its most distinguished past presidents. The oration was delivered by Dr. George A. Gibson of Edinburgh, who took for his subject "The Cause of the Heart Beat," after which there was the conversazione with music. Dr. Gibson has taken a share in recent researches on the subject of his oration, and was therefore prepared to speak with some authority, and was naturally listened to with special interest. He gave an account of the two opposing theories—the muscle and nerve origin, as one may say. The former, Engelmann, Gaskell, and others have upheld with no little ability, and their views were fairly considered, but the evidence in favor of myogenesis was not satisfactory, and at present the conclusion seems to be for neurogenesis. Embryology cannot decide on either side, for neither muscle nor nerve are to be found when the heart begins to beat. So anatomy supports neither view, nerve and muscle being too closely interwoven. Pathology is equally indecisive. Clinical observation, however, the orator pronounced to be distinctly in favor of neurogenesis, the esoteric cause of contraction seeming to him the rhythmic discharge of the nervous elements.

At the previous ordinary meeting of this Society, Dr. Walter Broadbent read a paper on some heart affections without murmurs. He dealt with myocarditis, fatty degeneration, and cloudy swelling. He insisted on the gravity of changes in the condition of the cardiac walls, and said that during acute diseases whenever the heart was weak from any previous cause there was great danger from the supervention of distention of the stomach.

Dr. Hector Mackenzie also communicated to the Society a paper on the mobility of the kidneys based on an examination of nearly 4,000 persons. He seems to have found an abnormal degree of mobility far more frequently than many observers seem to have thought possible. He admits that the kidneys may be abnormally movable without causing symptoms, and indeed that most cases require no treatment. He gave elaborate directions for palpation. When able to feel the greater part of the organ he called the case "palpable" kidney, reserving the term "movable" for cases in which he could feel above the upper border. In 2,801 women he found palpable cases in 16 per cent. and movable in 18.4 per cent. In 1,067 males there were 2.3 per cent. palpable and 1 per cent. movable.

The Commission on Malta fever which was arranged three years ago by the Royal Society at the request of the War Office, has lately completed its labors, and the net result seems to be that the disease will soon be stamped out. The Commission consisted of medical officers of the Army and Navy under the direction of a committee of the Royal Society, and though from time to time we have had statements as to some lines of research with which it was occupied, we have only lately received full reports. The discovery of the *Micrococcus melitensis* in 1887 was a starting point, as it were, for further research, and it was long before the additional discovery was made as to its mode of entrance into the body. When it was shown that goats were liable to the disease, a key was furnished to the mystery, for there are some 20,000 goats in Malta, and they supply the milk consumed on the island. The Commission found that 50 per cent. of these animals were affected by the fever, and that in about 10 per cent. the microbe can be found almost constantly in their milk, although there may be no other symptoms of the fever. The crucial test thus became to eliminate goats' milk from the dietary, and this could be done effectively so far as the soldiers and sailors were concerned. In June, 1906, this was done, and the fever cases thereupon fell to one-tenth of their average number. The enormous gain from a mere financial point of view should satisfy the government—bent as it is on cutting down expenses—that a few thousands spent on scientific research may prove a most profitable investment.

Dr. A. F. R. Wollaston has returned to England after a journey through central Africa, traversing much unknown country. In the region devastated by the sleeping sickness he describes the roads as peopled with the dead and dying, almost every village presenting a revolting spectacle, as it is the custom to drive out the victims of the disease to die. The population of an extensive region is thus dying in thousands in utter destitution. In Uganda, since the disease broke out a few years ago, he estimates that over a quarter of a million of the natives have succumbed to sleeping sickness. In the Manyuema country it would seem that the scourge threatens to completely depopulate vast regions.

OUR VIENNA LETTER.

(From Our Special Correspondent.)

THE BACTERIOLOGY OF WHOOPING COUGH—FATAL HEMORRHAGE FROM THE EAR—HYDROPHOBIA IN FROGS—GASTRIC SYMPTOMS FROM A FOREIGN BODY IN THE NOSE—PLASTIC OPERATIONS FOR INFANTILE PARALYSIS—INFANTILE TETANY.

VIENNA, May, 15, 1907.

ALBRECHT has carried out a series of observations relating to the bacteriology of whooping cough. In 200 cases of pneumonia in pertussis patients and in 70 cases of pertussis he found the *Bacillus Eppendorf* in the sputum. This bacillus does not differ from that of influenza, so that it may possibly be identical with this. It also appears to play a rôle in measles, for it was found in 80 per cent. of children dying from this disease. By injecting rabbits with the bacillus it was found possible to secure a serum which agglutinated the same strain in a dilution of 1-1400 and other strains in a dilution of 1-800. The animals so treated developed a well-marked degeneration of the right ventricle, accompanied by calcific areas in the muscles, and similar changes were found in the liver. After several months rabbits treated with influenza material showed endocarditic vegetations of the mitral valve containing influenza bacilli. This observation is of interest in view of the well-known deleterious effect of influenza on the heart.

Török has recently observed a case of fatal carotid hemorrhage from the ear. In dangerous hemorrhages from the ear the carotid and sigmoid sinus may be involved. Erosion of the carotid may be caused by malignant growths, cholesteatoma, syphilis, scarlatina, and in the greater proportion of cases by tuberculous necrosis of the bones. The patient, who was a man of fifty years, was suffering from advanced tuberculosis on admission. For several years there had been a discharge from the right auditory meatus and the internal ear was seen to be filled with thin, fetid pus. The drum and ossicles were missing and the walls of the internal ear were devoid of covering. The carotid artery was not visible and there was no pronounced pulsation of the pus to be seen, as has often been described. As the patient was too weak and cachectic to stand an operation the ear was irrigated several times a day with boric acid solution. Suddenly a profuse pulsating hemorrhage burst from the ear without any premonitory symptoms, and at the same time blood poured from the nose, the mouth, and even the auditory meatus of the opposite side. The bleeding was controlled by packing both auditory canals and the nose, after the patient had lost about a liter of blood. It was later found that the bleeding on the left side had taken place through an old perforation of the drum after the blood had entered the ear through the Eustachian tube. The patient died suddenly some hours after the hemorrhage. At the autopsy there were found large pulmonary cavities, tuberculosis of the intestine, tuberculous erosion of the bones of the middle ear, and a large defect in the wall of the carotid artery.

The question of whether or not hydrophobia is transmissible to the frog has been investigated by Lote in the University of Klausenberg. This observer inoculated 83 frogs in six series with the brains of rabbits dying of rabies. On the death of the frogs control inoculations were made in order to prove that no other infection had caused the death of the animal. Then rabbits or guinea pigs were inoculated with the brains of the animals and typical rabies was caused. Of the 83 frogs 73 died of rabies. It is plainly shown by these experiments that hydrophobia may be transferred from warm-blooded animals to frogs, from frog to frog, and from the frog again to the warm-blooded animal. The course of the disease is much prolonged in the frog and the virus in its passage through this animal

undergoes a considerable attenuation in virulence.

Dr. Glas presented before the medical society a man suffering from gastric disturbance as the result of the presence of a foreign body in the nose. For more than a year the patient had complained of eructations of foul-smelling gas and the vomiting of fetid material, which symptoms had developed since an attack of pneumonia. The gastric function was not impaired and it was found that the symptoms referred to this organ were caused through swallowing the fetid secretion originating in a suppurative process in the left nasal passage. This had resulted from the presence of an inverted tooth which had broken through into the nasal cavity, had been loosened by a blow on the nose, and had lodged below the lower turbinated bone, where it gave rise to the formation of a rhinolith, accompanied by purulent secretion. On removal of the tooth the gastric symptoms disappeared.

Moscowicz has operated on a boy of seven years who was unable either to walk or to stand in consequence of paralysis of the lower extremities and was obliged to crawl like a four-footed animal. The right lower extremity was completely flaccid, but on the left side the muscles of the leg were normal, except the tibialis anticus, and the muscles of the thigh were all normal. The glutei of both sides were paralyzed. The right leg was converted into a useful member by arthrodesis of the knee joint and the hip joint, together with tendon shortening of the muscles of the foot. The child was still unable to stand, however, as the extensors of the hip joint, the glutei, were lacking. On the left side the gluteus maximus was then replaced by the flexors of the knee joint by transplanting the insertion of these muscles from the tuber ischii to the ileum. The child can now walk with two canes and is able to stand unaided.

Escherich demonstrated in the Society for Internal Medicine and Pediatrics a child with infantile tetany accompanied by excessive mechanical and electrical irritability. For two months it had been suffering from digestive disturbances, vomiting and emaciation. For three days there had been short convulsive seizures, in which there was spasm of the glottis with stridulous breathing. At the same time there was a high degree of mechanical and electrical irritability, so that touching the cheek caused active facial contortions and gentle percussion of a muscle evoked forcible contractions. The statement of Finkelstein that in such cases the elimination of milk from the diet is a certain means for reducing the hyperexcitability did not apply in this case, for, on the contrary, the symptoms were increased in severity by this measure. Nevertheless, in most cases of tetany improvement follows resort to a carbohydrate diet or starvation.

Progress of Medical Science.

New York Medical Journal, June 8, 1907.

Open-Air Treatment of Tuberculous Bone and Joint Disease.—J. Carling claims that statistics of cure show, as between seaside and inland resorts, a preference in favor of the latter. His ideal location is a moderate altitude away from the seashore, and he advances the following reasons: (1) The air is more invigorating; (2) the absence of dampness and fog; (3) more days of sunshine; (4) better natural drainage; (5) a firmer soil for locomotion. The advantages of such an environment over home treatment are: (1) The patient is always surrounded with pure air and a maximum amount of sunshine; (2) his diet, rest, bathing, and exercise are carefully regulated; (3) he is under constant medical supervision; (4) he is educated and disciplined in the care of himself. The daily routine of life is as follows: The children are kept out of doors all day except in very stormy weather, and sleep in rooms and wards with the windows wide open. Those who are unable to walk are wheeled out in beds or invalid chairs, and the presence of fever is no bar to their going out. Not only is pure cold air not injurious to these latter cases, but it is decidedly beneficial in reducing temperature and dispelling nervous symptoms. Those who are able to go about on crutches or braces are allowed walking in moderation, others are drilled in light calisthenics, while all are taught the importance of deep breathing. Protected from the strong winds of winter and warmly wrapped in woolen blankets, patients are given sun baths when practicable, which in this clear atmosphere can be had almost daily. No medicines and no special diet are required except in emergencies.

Impetigo Contagiosa.—N. T. Beers notes the frequent occurrence of this disease, which frequently occurs in an epidemic form with symptoms analogous to those of the common eruptive fevers, most closely resembling, in fact, practically identical with the onset of varicella. When the case comes under observation, it is usually in the stage of scab formation and the full course of the eruption through the successive stages—vesicles, turning dark, and drying up—entirely discrete and with no surrounding induration or redness—is not seen. The pus from the scabs may inoculate other areas. The disease shows little tendency to itch unless the scabs are disturbed. As to differential diagnosis from pustular eczema and scabies, it may be said that eczema shows an areola of inflammation about the lesion; it is inclined to become confluent; itching is often intense; but it is not autoinoculable. Scabies is accompanied always by intense itching, especially at night; lesions are small, in large numbers and multiform, pustules, papules, and vesicles all appearing; it lasts for months; presence of burrows, and a parasite may be demonstrated; there are no constitutional symptoms. Impetigo is not communicable; it commences as pustules; lesions are deep and pustules elevated and rounded; general health is good. The treatment is even simpler: A grain of calomel in broken doses, a saline to complete its action, and then some constitutional tonic to increase the general resistance. Externally, the treatment consists in softening the crusts with olive oil and their removal with warm water and soap. As soon as this is accomplished an ointment consisting of ten grains of ammoniated mercury to the ounce is all that usually is required to complete the cure.

Case of Eyestrain Mistaken for Appendicitis and Cholelithiasis.—E. M. Alger refers to the claim of Gould that abdominal pains and functional disorders of digestion may arise from eyestrain. He refers to the unsatisfactory results frequently following operations for the relief of abdominal symptoms and declares that the whole training of the modern surgeon tends to cultivate operative skill rather than diagnostic ability. He gives the detailed history of the case of a young man of nineteen years in whom the chief symptom was chronic severe abdominal pain of several months' duration; the diagnosis of the first surgeon was appendicitis; of the second, gallstones; and of the third, eyestrain. The pain was completely relieved by the glasses of the first ophthalmologist for a period of nearly three years; recurred when they were lost; was aggravated by the prescription of the second; and finally completely relieved again by the glasses of the third.

Amyotrophic Lateral Sclerosis with Bulbar Onset.—A. Gordon refers to the various types of this nervous affection with reference to mode of onset. The most frequent is that presenting a paretic condition, with some spasticity and amyotrophy with reaction of degeneration. Or one may have a progressive muscular atrophy with the spastic element not marked, but the reflexes exaggerated. In a third form the spasticity appears first and the amyotrophy later. In all the foregoing bulbar symptoms may be a late feature. Finally a few cases have been reported presenting bulbar symptoms as the initial feature. One such case is reported by the author, whose patient was a married woman of fifty years whose trouble began with stiffness of the neck, soon followed by pain in the throat, dysphagia, and difficult speaking, with some trouble in holding up her head. When seen, certain sounds were emitted with difficulty, there was trouble in blowing and whistling and atrophy of the tongue with fibrillar twitchings. The initial symptoms were also progressive. Fifteen months after the onset of the bulbar symptoms muscular weakness and atrophy of the thenar, hypothenar, deltoid, supra and infraspinate muscles began to develop and showed R. D. The disease in this case was decided to be of spinal origin and it was believed that the motor bulbar neurons opened the pathological process.

Journal of the American Medical Association, June 15, 1907.

The Duality of Man.—G. C. Savage discusses the relations of the mind with the body in the light of the neuron theory. He argues that acceptance of this theory excludes the possibility of the nervous system, being in itself a self-acting mechanism of afferent currents directly transforming themselves into efferent ones: "The power that can make or break contact of dendrites or collateral branches, and can even present such contact, needs no physical connection, either by

continuity or contact, between afferent and efferent centers that it may control the physical being." The afferent and efferent currents are not, he thinks, directly transformable one into the other; there must be some power supervising and regulating the change, and if contact is necessary in order that there be any efferent current of neuricity, this power must bring it about. In this way the study of reflex neuroses can be cleared up, the phenomena of hypnotism and suggestion explained. According to this explanation, every function and organ of the body is directly under the control of this higher power, the mind. Hence when germs and toxins cause disease, mental stimulation can reinforce, under proper direction, the weakened bodily resistance. If the attack is too overwhelming, such external means as are suited to the case will have to be invoked. The grain of truth in Eddyism and like delusions is the fact that the mind can influence the body, but with this grain there is a ton of error. The external laboratories, under the guidance of trained minds, are supplying agents as specific, and often more effective than those the internal laboratories of the body, controlled by the mind, can supply in the fight against disease. The physician, nevertheless, should never overlook the fact that man is a dual creature, spirit as well as matter, and that the mind, through the nervous system, itself material, can influence the bodily organs.

Obscure Gastrointestinal Cases.—J. Hoelscher gives case histories of three patients suffering with intermittent gastrointestinal attacks characterized by gaseous distention, hyperacidity, pain or nausea, and vomiting; all were resistant to medical treatment. In one case there was no history of any causal disease, but there were severe pain and jaundice; cholecystenterostomy, however, revealed no gallstones. In the second case the disorder followed typhoid fever, in the third there had been a severe burn and traumatisms and the symptoms justified the diagnosis, confirmed by operation, of healed duodenal ulcer and partial obstruction. In the first two cases there were found gastric dilations and displacement, and adhesions of the stomach and intestines, which were released; in the third case a gastroenterostomy was performed. Improvement resulted in all three after operation. Hoelscher calls attention to the fact that an intestinal lesion may give rise almost exclusively to gastric symptoms, and says that the diagnosis of gastric neuroses and chronic gastric catarrhs will become fewer when surgery is resorted to. It may give prompt and complete relief, though usually the changes that have taken place in the musculature and glands of the stomach are such that it may be a long time before the patient will be altogether normal. The differential diagnosis calls for careful distinction as regards gastric ulcer, chronic cholecystitis, gallstones, and gastroptosis. Proper surgical interference gives better results than long-continued medical treatment. The usual secondary symptoms of faulty gastrointestinal chemistry included under autointoxications should not be overlooked.

Venous Angioma of Skin Showing Beginning Malignancy.—R. R. Campbell discusses the subject of venous angioma in its relation to malignant growths. He reports a case with microscopic examination of the excised tumor, which suggested epithelioma, though the absence of nests and of epithelial formation on the lateral walls or base precluded a malignant growth. He also abstracts several other cases reported by other authors and discusses the origin and varieties of these tumors. In conclusion he expresses the opinion that venous angiomas do not take on malignancy, but that, on account of the constant irritation due to their presence, the overlying epithelium may undergo carcinomatous changes.

Remote Effects of Tonsillar Infection.—P. K. Brown says that the importance of the source of infection for heart disease has been well shown. He has observed recurrent endocarditis, cholera, and muscular rheumatism occurring in certain of his old patients, and he considers that continued slight fever in children is probably a common result of tonsillar disease in San Francisco. A rather peculiar complication of pericarditis, pneumonia, and lung abscess is reported. Nephritis after tonsillitis without rheumatism is, he thinks, a commoner complication than is generally supposed, and has occurred four times in his cases. One of these, complicated by acute mania, is reported, as also one of fatal staphylococcic septicemia and one diagnosed as leukemia occurring in connection with, and presumably as the result of, tonsillar disease. The [illegible] he thinks, clinical and experimental, tends to show that more and more connection is being established between the tonsillar cervical route and lung tuberculosis. Histological studies alone are insufficient, the proportion of tonsillar involvement, as shown by Lartigau's results, in which tubercle bacilli were found in only 2 cases out of 135, and then only in small numbers, while 12 out of 75 inoculation experiments gave positive results. Brown concludes with the statement: "In the study of portals of entry of disease into the human body, the pharyngeal and especially the faucial tonsils have an importance not well enough recognized or understood, but increasingly appreciated in the light of each new clinical or experimental study."

The Lancet, June 1, 1907.

Multilocular Ovarian Cyst Successfully Removed from an Infant Aged Eleven Months.—The case is reported by C. W. McGillivray, into whose hospital service the child was sent with the diagnosis of tuberculous peritonitis calling for surgical intervention. The child was ill-nourished, cyanotic, with rapid pulse, dyspnea, some diarrhea, and marked abdominal distention. Nothing could be made out as to the abdominal contents, as the walls were of drum-like hardness. Some clear yellow fluid was withdrawn from the abdominal cavity and finally it was determined that the whole abdomen from diaphragm to pelvis was filled with a mass containing separate cavities filled with fluid. Under chloroform an incision was made to the left of the middle line just below the umbilicus. A large cyst came into view and was punctured, but only a little fluid escaped. The poor condition of the patient and the fact that a more extensive operation was evidently needed led to a prolongation of the incision upward to nearly the ensiform cartilage. A large double multilocular cyst was found, the two halves being nearly equal in size and attached to each other by loose connective tissue between their fibrous walls. Length, on removal, was nearly eleven inches and thickness four to five inches. In spite of the desperate condition of the child at the close of operation it eventually recovered. The author closes with some remarks on this class of growths in young children. Only one younger patient of this class is on record, as the intraabdominal condition began at the third month of life. Another feature was the retroperitoneal position of the tumor, as shown by the appendix, cecum, and ascending colon lying in front of it and stretched over its surface, and the fact that the posterior layer of the peritoneum had to be torn through in order to enucleate the tumor.

Congenital Piles.—J. V. Milward reports three cases in which a pile-like condition was noted from birth. Patient 1 was a male child, aged eleven weeks. There was a tumor of the size of a large pea, soft in structure and not inflamed, situated at the anterior margin of the anus, its posterior margin being flush with the anal canal. The latter was slightly narrower than normal, and I dilated it with the finger. The mother stated that the little lump had been present since birth and was giving the child pain. It was removed with scissors. Patient 2 was a female, aged four months. The tumor was situated in the same place as in patient 1 and was of about the same size. It was partially destroyed by ulceration and was somewhat indurated for the same reason. No stricture of the anus was present. The growth was snipped off. Patient 3 was a female, aged eleven weeks. The pile was in the same place and was of about the same size as in the other two cases. Its structure was perfectly healthy and consisted of fibrous and adipose tissue. The author regards these small masses as rather of the nature of a malformation than an outgrowth originating in a dilated venous radicle.

Value of the High Frequency Spark as a Local Application.—E. R. Morton refers to the benefits derived from the high frequency spark in a certain case of alopecia areata, and in certain cases also of port wine marks. In the first case the author used a vacuum glass electrode connected to the top of the resonator, rubbing the electrode over the bald patches until a bright erythema was produced, taking three or four minutes for each patch. Results were surprisingly good and after [illegible] six months the patient had a fine head of hair. The effect of the spark is merely that of a local stimulant. In the port wine mark cases the author used a metallic point electrode mounted on an insulated handle and connected with the top of the resonator. The point was held about one inch from the surface so that a hot white spark jumped across the intervening space. This was continued for several minutes until vesication was produced over the entire

surface of the patch. There was no soreness afterwards worth mentioning and in about eight days the old epidermis peeled off, leaving a smooth surface, pink from the remains of inflammatory reaction, but otherwise quite like normal skin. One great advantage in such cases is that the normal texture of the skin is quite unimpaired. There is nothing approaching a scar—thus differing from chemical agents and electrolysis. A further advantage is that it is under the most perfect control and no further reaction takes place than is desired.

Antityphoid Inoculation.—A recent editorial in the *Lancet* (June 1) calls attention to reports by three English army surgeons. This method, introduced by Wright in 1897, was tried on a large scale in India and Egypt with most encouraging results, but after the Boer war it fell into temporary abeyance. In spite of some opposition the method seems to be winning its way. Certainly collective evidence is in its favor. Certain improvements in the preparation of the vaccine have led to a much milder "local reaction." Inoculation is no longer made in the flank and hence there is no pain or stiffness in walking. Inoculation is now made in the arm or pectoral region. The dosage of the vaccine employed has been fixed at one-half c.c., containing 500,000,000 bacteria, and for the second inoculation the quantity is doubled. This has been found to give a maximum protection with a minimum severity of reaction. It has thus far been found impossible to standardize the serum. There are now on record a sufficient number of histories of protective inoculations to make a very strong showing in favor of the vaccine. Inoculation does not, it is true, invariably protect, but it does so to a very large degree. The writer in the *Lancet* considers it in every way as necessary for the protection of the health of the English soldiers in India as is vaccination against smallpox.

British Medical Journal, June 1, 1907.

Two Cases of Multiple Intestinal Obstruction.—The cases are reported by R. Ramsey, whose first patient was an old man of eighty-one, who had had a hernia for many years. Sudden abdominal pains with fecal vomiting suggested strangulation, but operation revealed no condition connected with the hernia sufficient to account for the fecal vomiting, although the hernia was found irreducible and was easily, on opening the sac, returned to the abdominal cavity. A median laparotomy was done and distended small gut presented. This was followed down and led to a loop of ileum fixed tightly behind the cecum, evidently being of the nature of an internal hernia; this loop was almost black in color, but on reduction appeared viable, so the abdomen was closed and the patient put back to bed. Fecal vomiting continued all night, and, as the patient was rapidly sinking, the abdomen was again opened in the morning, eight hours having elapsed since the former operation. Another impacted and strangulated internal hernia was discovered, this time up in the region of the splenic flexure, where the bowel had got caught in a peritoneal pocket; this bowel was also nearly black, but was treated by simply replacing it in the abdomen. Death occurred from pneumonia on the fourth day. The second patient was a boy of seventeen years, with usual symptoms of intestinal obstruction, although the abdomen was not markedly distended and no local tumor could be felt. On abdominal incision, small intestine, somewhat distended, presented and on following this down it was found to go in at the foramen of Winslow; almost three feet of bowel was pulled out through this foramen; at one part there was a slight mark of constriction, but there was nothing which seemed sufficient to account for the symptoms, so a further search was made and a long, inflamed appendix was discovered twisted firmly round a part of the small intestine and evidently completely blocking it. The adhesions were broken through and the appendix removed; the small bowel thus freed was about six inches away from the ileocecal valve, and it was much congested. Result.—He lived about six hours after the operation, and during that time his bowels moved slightly, but the patient failed to rally.

Two New Genera of Nematodes Occasionally Parasitic in Man.—R. T. Leiper refers to a certain parasite, *Ascaris mystax*, which infests our common dogs and cats and probably most carnivora. Its especial feature is the spatulate shape of the head produced by two lateral membranous expansions of the cuticle. The name given above refers especially to the species found in the cat. Other species of the same genus are found in the dog, fox, etc. The author also refers to certain specimens resembling the *A. mystax* found on post-mortem examination of human cadavers. There were certain differences, however, and he believes that the various varieties found are several species belonging to two distinct genera.

Urticaria and Influenza.—J. Reid refers to the case of a girl of eight years, with an inflamed throat and consolidation of the base of the right lung. In addition she presented in front of the neck and on the nucha large boggy urticarial patches. Other similar areas were found on the left shoulder and in the upper third of the right thigh at its inner aspect. On the following day no trace of the foregoing rash was visible, but fresh smaller spots appeared on the right abdomen. The consolidation had disappeared. On the next or third day there was no rash and the throat was but slightly red. The patient was given magnesia and a simple diet. There was some constitutional weakness, possibly rheumatic. The child had not been well since a diphtheritic attack four years previously, in which antitoxin had been given, but no rash then appeared, so far as the author could learn. He regards these localized symptoms as on a par with the ischemic processes found in connection with influenza, especially convulsive cases.

Eggs in the Diet of Infants.—W. J. Midelton regards milk as a very difficult article of diet to handle in case of sick children. He now relies largely on eggs and gives the following proportions for an infant weighing six pounds or more at birth: During the first two days after birth beat up the raw white of a large new laid hen's egg, add to this water to make 8 ounces, also 40 grains of pure cane sugar. Strain through butter muslin. Put 1 ounce of this into the feeding bottle, stand it in hot water at 110° until the food is raised to 98° F. Feed every hour and a half. On the third or fourth day add 5 minims of the yolk of the egg and 5 minims of raw meat juice to each feed. Increase the quantities gradually as the child grows older, and also add codliver oil emulsion to each feed, say 5 minims of a 40 per cent. preparation. He says that he has yet to see an infant unable to digest these ingredients carefully adjusted to the needs of each case.

Berliner klinische Wochenschrift, May 27, 1907.

Clinical Observations of the Index of Refraction of the Blood Serum.—Engel has carried out a series of observations on the coefficient of refraction of the blood serum of a large number of patients suffering from such conditions as nephritis, cardiac disorders, diabetes, mellitus and insipidus, pulmonary tuberculosis, liver diseases, etc. The index of refraction has been shown to be quantitatively commensurate with the albumin content of the serum and therefore to give a fairly correct guide to the degree of hydremia. Engel expresses himself as convinced of the value of the method, which requires only a single drop of blood, can be quickly carried out, and yields results which equal in accuracy those obtained by much more complicated procedures. While it does not obviate the necessity for performing the usual blood examinations, it supplements these in a useful manner and in many cases affords diagnostic and prognostic data of considerable importance. By means of a refractometer it is possible to carry out accurate observations on the proportion of water present in the blood serum, which by other methods is rarely practicable.

Münchener medizinische Wochenschrift, May 14 and 21, 1907.

The Treatment of Delirium Tremens.—Eichelberg presents the statistics of the cases of this sort treated in the Eppendorf Hospital of Hamburg in the past eleven years. These number in all 1,574, of which 1,043, that is about a third, were uncomplicated, whereas 531, or one-third, were attended by more or less serious complications. Of the total number of cases, 2.4 per cent. ended fatally, and, including the cases in which there was also pneumonia, the death rate was 5.5 per cent. The death rate in 173 cases complicated by pneumonia was 33 per cent. In regard to the treatment the author states that it is customary in this institution to withdraw the alcohol at once and to lay great stress on sustaining the heart action by the use of digitalis and other stimulants. Diuresis also is to be encouraged, and in cases complicated by pneumonia both digitalis and alcohol are resorted to.

Manganese Poisoning.—R. von Jaksch describes four cases of a peculiar nervous affection occurring in workmen engaged in the manufacture of permanganate of potassium. The most prominent symptoms are monotonous

scanning speech, uncontrollable weeping or laughing, palsies or contractures of the lower extremities, disorders of gait, retropulsion, psychical degeneration, and increased knee jerks. Babinski's sign, nystagmus, and contractures of the visual fields are not present. The author considers that this affection of the nervous system is caused by the inhalation of dust containing suboxide of manganese, although other factors may possibly play a rôle in its etiology. The author also describes another case in which the patient exhibited a neurosis somewhat resembling the condition just described, but which was apparently the result of autosuggestion. For cases of this sort the author proposes the name of manganophobia.

The Dorsal Foot Reflex.—Lissmann says that insufficient attention has been paid to this reflex, which apparently was discovered independently by Bechterew and Mendel. It is elicited by tapping the dorsum of the foot on its lateral aspect in the neighborhood of the cuboid and third cuneiform bones. It is best to use a percussion hammer and to deliver a blow of moderate intensity. In healthy persons a reflex dorsal flexion of the second to the fifth, or sometimes only of the second and third, toes results, but in organic nerve diseases accompanied by spastic paralysis plantar flexion results. Lissmann tested the reflex in over 900 persons free from nervous disease and found that in every instance the dorsal extension was caused. This was also the case in forty-one tabetic patients, two cases of paralysis agitans, and eight cases of sciatica. The reflex was absent in five cases of spinal infantile paralysis and in general the results corresponded with those of the Babinski reaction. Contrary to the statements made by some authors, the reflex did not appear in any cases in which the Babinski was negative. By examining a large number of infants the author learned that the disappearance of the dorsal foot reflex in young children corresponds with the time of disappearance of the Babinski reflex—that is, about the third or fourth month. This association of the two reflexes seems to indicate that, like the Babinski, it depends on the integrity of the pyramidal tracts and that it therefore deserves recognition as a diagnostic sign.

Döderlein's Method of Skin Sterilization.—Littauer says that in spite of the various methods of sterilizing the skin that have been proposed, it is still impossible to free the parts surrounding the operative field from germs with sufficient thoroughness to insure uncomplicated healing of the incision. Various methods of coating the skin with impervious substances have been proposed, but the most effective is that of Döderlein, because in this the skin is tanned as well as covered with a protective layer. The fluid used is a solution of rubber in benzine, to which formaline has been added, and the resulting membrane is easily soluble in ether, benzine, and chloroform. Döderlein's method of disinfecting the skin is as follows: The evening before the operation the patient is bathed and the operative area is shaved; a 1 per cent. formaline compress is applied to the area in question and left on over night. On removing the compress the skin is brushed over with 1 per cent. formalin-benzine and tincture of iodine is painted on. As soon as this is dry the rubber solution is applied; when the benzine has evaporated the sticky film of rubber is sprinkled with sterilized talcum powder and the excess of this is brushed away with a piece of sterile gauze. The results obtained by the use of this method are excellent and by its means all skin germs are effectually prevented from entering the wound.

Deutsche medizinische Wochenschrift, May 9, 16, and 23, 1907.

Abscess of the Liver Following Influenza.—Karewski says that Langenbach and Korte have called attention to the fact that abscess of the liver sometimes occurs as a sequel of influenza, and he reports a case of his own which was attended by this complication. The patient was a man of twenty-five years, who fourteen days before coming under Karewski's observation had suffered from an attack of influenza. This subsided in the usual way, but the patient failed to regain his strength and on examination of the chest signs were discovered pointing to empyema of the right side. After resecting a portion of the tenth rib and incising the costal pleura, a considerable quantity of sero-purulent fluid escaped and from one angle of the wound thick pus could be seen welling up from below. The pleural cavity was closed by suture and tamponade and the deeper collection of pus, which was found to come from an abscess cavity in the liver, was evacuated. After a protracted convalescence the patient recovered completely. In this case there were no other etiological factors to account for the hepatic abscess and the patient's subsequent freedom from all symptoms makes it seem certain that the suppurative process in the liver was the result of the grip infection.

Acute Myelogenous Leukemia.—Ziegler and Jochmann are of the opinion that in many cases of leukemia there is a relationship between bacterial infection and the origin of acute, and probably also of chronic, forms of the disease. This may not be the result of specific action, but may be induced through damage to such organs as the spleen or bone marrow, as the result of which myelogenous leukemia may develop. They report a case in support of this view, the patient being a boy of fifteen years, who suffered from a staphylococcus sepsis apparently resulting from a throat infection. This led to a hemorrhagic pericarditis, and fourteen days after the onset of the acute infection the blood was suddenly flooded with myelocytes, so that two days after having contained only 18,000 leucocytes to the cubic mm. the blood count revealed 240,000 leucocytes to the cubic mm. Death took place two days later and at autopsy the spleen showed myeloid changes and hyperplasia of the bone marrow.

A Skin Disease in Man Caused by a Parasite of the Dog.—Lewandowsky says that while it has usually been considered that the *Demodex follicularis hominis* is a harmless saprophyte present in the hair follicles of a large proportion of the population, it now appears that in some instances it is able to give rise to pathological changes in the skin. Several instances of peculiar circumscribed areas of facial pigmentation have been described which were apparently due to the presence of large numbers of this parasite. In one instance a peculiar form of blepharitis was caused in which the demodex was present in great number in the follicles of the eyelashes. The author's own case was peculiar in that the organism giving rise to the lesions was of the canine type, *Demodex follicularis canis*. The patient was an Italian laborer suffering from an impetigo-like eruption about the face. On examination of material taken from the lesions the organism above mentioned was readily discovered. Under the application of a mild antiseptic powder the condition quickly improved. The manner in which infection took place could not be ascertained.

The Treatment of Leprosy.—Diesing speaks highly of the use of iodoform injections in leprosy, and says that by their means all the lighter uncomplicated cases and a large proportion of the advanced cases may be cured. The preparation used consists of a mixture of 30 g. of iodoform in 90 c.c. of pure olive oil sterilized for ten minutes on the water bath. Before beginning the treatment the patient's susceptibility to iodoform is tested by giving two injections two days apart of .5 c.c. each of the emulsion. If the development of eczema or fever indicates an idiosyncrasy on the part of the patient it will be necessary to use caution in gradually increasing the dosage to the normal amount of 2 c.c., but otherwise daily injections of this amount may be commenced with at once. These are continued for fifteen or twenty days with occasional intermissions, so that a month is consumed, and then after a rest of two weeks a second course is given. Certain patients do not do well under the injections, and for them the method is contraindicated; such are patients with mental disorders, those showing leukemic changes in the blood, and patients with weak hearts.

The Traumatic Causation and Operative Treatment of Paralysis of the Serratus.—Samter discusses the subject of traumatic paralysis of the serratus magnus and comes to the conclusion that in most cases it is caused in the following way: The long thoracic nerve as it descends vertically over the side of the thorax is in such a position that it can be pinched between the coracoid process and the first rib if the scapula is forcibly pressed against the chest wall. In this way the nerve, particularly in persons in whom the muscle is poorly developed and there is inadequate padding of fat, may be damaged seriously enough to occasion a paralysis of the muscle, and somewhat similar conditions obtain in certain cases of so-called congenital serratus palsy, which probably result from manipulations during labor such as are necessary when an arm has to be brought down. The author was able to treat successfully, by means of a plastic operation, a traumatic serratus palsy occurring in a girl of eleven years, who had fallen against a ladder. After eleven months of unsuccessful electrical and other conservative treatment, the long thoracic nerve was exposed by a vertical axillary incision, but was found electrically inactive. The lower half of the brachial attachment of the pectoralis major was removed with a periosteal flap

from the humerus and transplanted to the angle of the scapula. The functional result of the operation was excellent and the deformity was almost completely eliminated. The author recommends the procedure in all traumatic palsies of the serratus, in congenital defects of the muscle, and in other forms of palsy of this type, unless there is present a rapidly progressive causative nerve lesion.

French and Italian Journals.

Inflammatory Neoplasms of the Pelvic Colon.—P. Cavaillon and Bardin include in inflammatory neoplasms tuberculous neoplasms with and without tubercles, syphilitic neoplasms, and true inflammatory neoplasms, due generally to infection by germs within the intestinal lumen. The tubercular lesions may be in the active stage, with bacilli included in tubercles, or in the cacatricial stage, when the original tissue has been displaced by sclerosed masses. These scleroses may be produced by toxins alone without bacilli themselves being present. The endointestinal and periintestinal inflammations that occur aside from syphilis and tubercle result from the microbes habitually present in the intestine, and ordinarily harmless. They are associated with infection in the intestinal diverticula and inflammatory pericolitis. The diagnosis of inflammatory neoplasms is rarely made until the abdomen has been opened for operation, or at the autopsy. Cancerous growths are small, circumscribed, and produce marked stenosis, while the inflammatory growth is much more diffused, involves a longer section of bowel, and the infiltration of the coats is more marked and of uniform contour. The bowel feels thick and softer, though coarser. The peritoneal reaction about the tumor is marked, the omentum is adherent, and there may be small abscesses in its mass. The walls are very thick and partially close the lumen, while above them the intestine is dilated and the mucous membrane ulcerated. All the coats in simple inflammatory neoplasm present lesions of simple inflammation, but the most marked are in the submucous layer, arising from mucous diverticula and glandular culs-de-sac. There are three types of tuberculosis in the sigmoid flexure: ulcerated tubercles, hypertrophic tuberculosis, with or without specific lesions, and plain inflammatory tuberculosis. In the hypertrophic form there may or may not be tubercles present. The walls are much thickened, especially the submucous layer; there is sclerolipomatous change in the walls, adhesions, and enlarged glands. The characteristic of tuberculosis without tubercles is that of submucous sclerosis with rare giant cells. Inflammatory tuberculosis arises from the defensive reactions of the intestine, and is characterized by cicatrization. Such lesions may result from retrograde changes in tubercular tissues, or from the simple action of the tubercular toxins. Syphilitic neoplasms with inflammatory tumors are most marked in the submucosa, and the sclerotic changes begin about the vessels. The pathologic differences between these types of chronic inflammation are marked. The simple inflammatory growths arise around glandular tubes and diverticula. In syphilis sclerosis is perivascular; in tuberculosis there are localized lesions in the submucosa, or diffused lesions unlocalized. The same symptoms are common to all: occlusion of the pelvic colon, or suppuration in the iliac fossa, alternating diarrhea and constipation, blood and mucus in the stools, sometimes tenesmus and distention of the intestine above the growth. Cachexia may be marked. These tumors are benign in themselves, malignant in their evolution. Treatment is generally operative. Suppuration requires drainage; perforation requires laparotomy; acute occlusion requires an artificial anus. Radical operation is satisfactory in theory, and many cases recover after laparotomy with colectomy. Some recover without operation by retrograde metamorphosis under palliative treatment. Inflammatory tumors require incision when pus collects and medical treatment afterward. Accidents demand ileoresection. Tuberculoma, outside of complications, or cicatricial metamorphosis, requires ablation in three stages.—*Gazette des Hôpitaux*, February 5 and 12, 1907.

Treatment of Ophthalmic Migraine and Ocular Troubles of Dyspeptic Origin.—Albert Robin describes several varieties of ophthalmic migraine. In the most severe the migraine is preceded by a singular aura of lightness and levity some hours after a meal; suddenly vision recedes as if a thick shadow had passed over the patient. A portion of the visual field is obscured and there is hemianopsia, temporal generally, sometimes horizontal. There is painful cardiac palpitation and agonizing intermittence. Brilliant lines appear before the eyes, which form quickly changing geometrical figures. The eye becomes painful and seems pulled into the orbit. There is formication of the opposite side of the body, the limbs weaken, speech is embarrassed, and memory fails. Gastric cramps come on and a violent migraine. In other cases the symptoms are similar but less severe. The treatment of this condition should not be given to the oculist, since the seat of the trouble is in the digestive canal rather than in the eye. In other persons who read or write much dyspepsia brings on muscular and accommodative asthenopia, which is only temporary. There is congestion of the lids, and a feeling of sand in the eye. There may be slow and painful accommodation, sensation of fog before the eyes, or abnormal perception of colors. The author rejects the theory of autointoxication as a cause of these symptoms, and believes them to be reflexes of the vasomotor enervation of the optic nerve, dut to tetanizing of the walls of the vessels supplied by the great sympathetic. These patients should be placed on a strict diet and hygiene. They should stop mental work and take physical exercise, eat plain food, and omit coffee, tea, alcoholics, and tobacco. Bitter tonics and nux vomica should be given before meals, alkalies after eating. The bowels should be kept in order and a daily bath or hot douche enjoined. For the attack large doses of bromide of potassium, washing out the stomach, antipyrin, and massage are the best remedies. For muscular asthenopia rest and prisms with the base in should be used.—*Le Progrès Médical*, February 16, 1907.

Treatment of Cancer of the Cervix.—Joseph Godart says that recurrences in cancer of the cervix occur in the neighboring glands rather early, due to insufficient removal. The glands that are first invaded in this form of cancer are the juxtauterine, sacral, iliac, and hypogastric; next come the lumbar; last, the inguinal and peri-inguinal. The glands are involved in twenty per cent. of all cases. The parametrium is involved in seventy per cent. of the cases, and should always be removed. The tendency is to more thorough removal of the glands and all structures that can possibly be involved. In some cases glands that are enlarged are only the seat of inflammatory lesions. Contraindications to hysterectomy are anemic cachexia in old subjects, albumin in urine, uremia, and edema of the legs. Hydronephrosis and pyonephrosis due to involvement of the ureters and extension to the bladder contraindicate operation. If only the vagina is involved aside from the uterus, operation may be done. Fifty-six per cent. of all cases may be operated on by the abdomen, and only thirteen per cent. by the vagina. The best method for operation is abdominal hysterectomy. A preliminary curetting will remove edema and permit of better antisepsis. This should be done a week before operation. Abdominal operation enables the surgeon to judge better of the involvement above the cervix, the condition of the adnexa, intestine, and bladder. When there is too great involvement to permit of successful removal the incision may be only exploratory. Increased gynecological knowledge among physicians, with an earlier diagnosis, and a belief in the curability of cancer, and greater knowledge on the part of women in general of the importance of medical advice for irregular hemorrhages will improve the results of operation on cancer of the cervix.—*La Policlinique*, January 15, 1907.

Interauricular Insufficiency.—H. Roger describes a syndrome in which there is no sign of cardiac insufficiency discoverable by auscultation, but still the integument of face, hands, and feet are of an intense blue, the lips are swollen and cyanotic, and this cyanosis persists. Examination of heart, lungs, and other organs gives no clue to the cause of the symptom. The condition may go on progressively increasing until death occurs. In such a case observed by the author the autopsy revealed an opening of the nature of a canal between the two auricles. It was discovered by pouring water into one auricle and allowing it to flow toward the other, when it was found to flow into the second auricle, from right to left. In most published cases of auricular insufficiency a canal has been found directed from behind forward, from right to left, and from below upward. The walls are formed by the muscular ring which surrounds the fossa ovalis and the valve of Vieussens. The valve, instead of becoming adherent, remains free. When there is pulmonary stasis the pressure rises in the right auricle, the blood is pressed back behind the valve, opens the orifice, and a communication is produced between the auricle, a current flowing from right to left. The mixing of venous and arterial blood explains the cyanosis. In order that the difficulty may occur the blood pressure must rise in the right auricle, as happens in pulmonary troubles, especially emphysema. The author believes that many apparently normal individuals have a patulous canal, and are thus exposed to these symptoms in the event of pulmonary trouble. In them we may diagnose interauricular insufficiency in the presence of an inexplicable cyanosis.—*La Presse Médicale*, February 6, 1907.

Book Reviews.

La Stérilite chez la Femme. Son Traitement par les Agents Physiques. Par le Dr. E. Hugon, Ancien Chef de Clinique Gynécologique. Paris: Vigot Freres, 1907.

This brochure enumerates the various conditions which are responsible for sterility in woman; it also gives suggestions for the treatment of the same by means of massage, electricity, or hydrotherapy.

Die Roentgenstrahlen im Dienste der Neurologie. Von Dr. Wilhelm Fürnrohr, Nervenarzt in Nurnberg, Früher Assistent der Prof. Oppenheim'schen Nervenpoliklinik in Berlin. Mit einem Vorwort von Prof. Dr. H. Oppenheim. Mit 28 Abbildungen. Berlin: S. Karger, 1906.

The majority of text-books on the Roentgen rays deal so largely in the general technique and general applications of the method that they find but little room for the special details of interest solely to the neurologist, which concern the diagnosis of diseases of the cerebrospinal and nervous systems. This defect has been amply supplied in Dr. Fürnrohr's excellent monograph. He deals with the applications of the *x*-rays in injuries as well as in diseases of the brain, the cord, the nerves, etc., and thus his book is of interest to surgeons as well as to neurologists. It is now over ten years since Roentgen told the world of his wonderful rays, and in these years an enormous amount of work has been done with this new tool of the physician. That much of this work is applied in neurology is shown very clearly in the present volume.

Beginning with some elementary anatomical notes, the author passes on to acute bone atrophy as a subject worth considering in view of the fact that this condition was but recently described (1900) by Ludek, who found that certain bones, as those of the hand, atrophy rapidly in the presence of inflammatory joint affections, etc. The next chapters deal with diseases of the cranium, brain, cord, etc., the spine, the limbs, etc. (as connected with neurological conditions) and such diseases as acromegaly and myxedema. The book shows well how much neurology owes to the *x*-rays. Thus these rays showed that the sella turcica becomes broadened in acromegaly; that in myxedema there is a retarded bone development, etc. There is no doubt that in the future the neurologist will gain much information as to the exact progress of arthropathies, etc., with the aid of the *x*-rays.

Anesthetics and their Administration. A Text-book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.V.O., M.A., M.D. Third edition. London: Macmillan & Co., 1907.

Dr. Hewitt's name is probably more closely connected with the science of modern anesthetics than that of any other man. The third edition of his book contains all that has been done during the last six years in this branch, the new chapters taking up ethyl chloride, the addition of many fresh and important clinical facts regarding surgical shock, and a careful résumé of the important question of the relation between general anesthesia and "acid intoxication." Dr. Hewitt's work is in a sense a demand for a more general recognition of the value of the anesthetist. The book contains practically everything of value on the subject which would be of service to the student or the practitioner. The American reader will miss, however, some of the forms of apparatus which are widely used in this country, but otherwise the work is very complete and constitutes an excellent manual on what is daily becoming a more important specialty.

Studies in Urological Surgery. The Johns Hopkins Hospital Reports. Volume XIII. Baltimore: The Johns Hopkins Press, 1906.

These studies are edited by Professor Hugh Young of Johns Hopkins, with the collaboration of his associates at the University and the Hospital. Some of the articles are reprinted from the journals in which they appeared originally, and there are in all twenty-one papers in the volume. It is only at such an institution as Johns Hopkins Hospital, where all the equipment, all the trained assistance, and all the material support needed are available, that such magnificent original work can be produced. Some of the papers are in truth classics of their kind, and while it is impossible to give the entire list, we must mention the papers on stricture by Hugh Young and John J. Geraghty, and on chronic prostatitis by Young, Geraghty, and A. R. Stevens. There is also the very thorough study entitled "The Seven-Glass Test" by Young, which opens the volume. These three articles are remarkable for the exhaustiveness, completeness, and thoroughness with which they cover their themes. The minute and painstaking research on prostatitis, with a tabulation of 358 cases, is especially worthy of notice as a most important contribution to this rather obscure subject. A detailed description of the genitourinary department of the Johns Hopkins Hospital is given in an appendix to the volume, and makes interesting reading for those who would like to know the conditions under which such excellent work as this can be done.

Nervenkrankheit und Lektüre; Nervenleiden und Erziehung; die ersten Zeichen der Nervosität des Kindesalters. Drei Vorträge von Prof. Dr. H. Oppenheim. Zweite Auflage. Berlin: Verlag von S. Karger, 1907.

These are three lectures delivered at various times and constitute excellent sermons on the relation of a number of influences during childhood on the production of nervous states. He shows that the latter may be fully controlled by proper educational means. In the third lecture it is shown that the child manifests evidences of neurasthenic states at a very early age which should be immediately recognized. Particular instruction in these symptoms should be given to those in charge of children, the knowledge of which should serve as warnings, so that proper medical authority and advice may be consulted in time to accomplish immediate good. Although it may be impossible to correct an hereditary or congenital neuropathic constitution, much may be done to reduce the chances of a further development of these latent symptoms by the application of proper educational measures.

Nierenchirurgie, Ein Handbuch für Praktiker. Von Prof. Dr. C. Garre und Dr. O. Ehrhardt. Berlin: S. Karger, 1907.

This excellent German manual is intended to furnish the general practitioner with a complete résumé of the subject of renal surgery. The writers have drawn largely from their own experience in gathering the material for the work, which is thus given a more or less personal character. Only those facts are included which have shown to be true by actual test. The illustrations are new and well selected and considerably better than those met with in most German medical books. The text is clear and concise and the book constitutes a valuable manual on the subject. A good English translation would undoubtedly meet with a favorable reception.

Medical Diagnosis. A Manual of Clinical Methods for Practitioners and Students. Fifth Edition. Greatly Enlarged and Revised to Date. By J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S.E., Assistant Physician, Royal Infirmary of Edinburgh, and W. J. Ritchie, M.D., F.R.C.P.E., F.R.S.E., Clinical Assistant Pathologist Royal Infirmary of Edinburgh. With 200 Illustrations and eight full-page Plates. New York: Imperial Publishing Company, 1907.

The well-known manual of diagnosis by Brown and Ritchie appears in a new, thoroughly revised edition, adding to the already comprehensive material of the former issues the latest advances in its rather wide field. The revision has really been done with much care and with excellent judgment, and we know of no single volume that can give the practitioner and the student a more compact, yet sufficiently complete body of facts and figures, covering every important diagnostic method. The book combines the diagnostic methods used at the bedside and in the physician's office with the methods employed in the laboratory, and covers every phase of the subject of physical diagnosis, chemical, microscopical, and bacteriological examinations. Naturally, it does not go into the minutest details on some of the topics, but it is more than sufficient for all practical purposes, especially for the physician who does his own laboratory work. We might mention as an example of its up-to-dateness that Wright's method of opsonic index is quite fully described, the technique being given with sufficient detail to enable one to understand the process quite clearly. We find nothing said, however, of the spirochete in syphilis.

Régimes Pathologiques et Régime Parfait. Par Dr. F. Cayla, Ancien Chef de Clinique à la Faculté de Bordeaux. Paris: Vigot Frères, 1907.

Cayla's manual differs from other works on diet, in that it consists largely of menus for the various meals of patients with different diseases. In addition, under the heading "the perfect diet," there are given dietetic directions for convalescents and for people who are exposed to, or predisposed to, diseases of the gastrointestinal tract, etc. In the concluding chapters are given the chief facts of interest concerning the various classes of food products. But little attention is paid to ultrascientific methods, measuring calories, and the like, and the book is primarily designed for busy physicians

Society Reports.

AMERICAN PEDIATRIC SOCIETY.

Nineteenth Annual Meeting, Held in Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Special Report to the MEDICAL RECORD.)

PRESIDENT B. K. RACHFORD, M.D., OF CINCINNATI.

(*Continued from page* 874.)

Wednesday, May 8—Second Day.

Pseudomasturbation in Infancy.—Dr. B. K. RACHFORD of Cincinnati read this, the President's address. The detailed cases upon which it was founded included the speaker's own cases and a number reported to him by members of the Society in response to letters addressed to them. In the discussion of the disease the writer considered age the most important etiological factor, and nearly all of the cases occurred in female children. The anatomical and physiological condition of the organs of generation of the infant were considered in detail. The external genital organs were well developed in physiological function from birth, although the internal organs were not. For this reason there could be a syndrome complex closely resembling the sexual feeling. True masturbation occurred after the age of ten. True masturbation occurred oftener in males; pseudomasturbation oftener in females. Later it could be classed among the habit neuroses. Environment was of the greatest importance in keeping up the habit. Heredity played a large part in establishing the predisposition, and gouty inheritance might be one of the predisposing causes. Acid condition of the urine had been found to be a frequent cause, as was also constipation. Of fifty-two cases presented, twenty-five were cured, and in only two was treatment of no avail. The writer was convinced that pseudomasturbation occurring in children under two would in time get well under almost any form of treatment; the tendency was to spontaneous recovery. There was no connection between pseudomasturbation in infancy and true masturbation in later life, though the former might tend to develop the latter. There was no connection between pseudomasturbation and epilepsy, and the writer had never seen these two neuroses coexist.

Dr. JACOBI of New York did not agree with the essayist that masturbation in infancy and childhood was not the same as the masturbation of adult life; he believed it should be classified with masturbation of more mature life. It showed itself by the same excitement—interrupted respiration, redness of the face, staring eyes, large immobile pupils, perspiration, and convulsive twitchings, as in the adult, and he looked upon it as the same condition.

Dr. L. EMMETT HOLT of New York referred to the frequency of the habit in mentally defective children, and considered it the rule with them rather than the exception. He thought the mental defect the cause rather than the result in these cases. He had not seen any case where the mental defect was traceable to the habit. He did not look with favor upon the appliances for mechanical restraint in these cases, nor upon the methods of stripping back the preputial hood. His cases had been nearly all in females.

Dr. HENRY KOPLIK of New York did not believe that true masturbation could exist in the infant because it presupposed intention and a resulting nervous explosion. He had found, as the other speakers had, that the great majority of cases were in females. He considered that the neurotic tendency was the chief factor.

Dr. C. G. KERLEY of New York was in accord with the views expressed in the paper, except that he thought that in patients over four years of age the prognosis was not so favorable. The cases were often discouraging, and treatment had to be carried out for a long time. He exhibited an appliance for mechanical restraint that he had found useful.

Dr. MAYNARD LADD of Boston showed a device for mechanical restraint similar to that employed by Dr. Kerley, consisting of a long section with two cross bars, which kept the thighs about one and a half inches apart, while allowing free movement of the legs.

Kernig's Sign in Infancy—A Study of Two Thousand Cases.—Dr. JOHN LOVETT MORSE of Boston presented this paper, in which he concludes that Kernig's sign is almost never found in infancy, except in meningitis; that its presence in an acute disease justifies, so far as one sign can, the diagnosis of meningitis; that it occurs with equal frequency in all stages of the disease and has no connection with the degree of intracranial pressure. It has no value in diagnosticating between cerebrospinal and tuberculous forms of meningitis.

Dr. HENRY KOPLIK of New York agreed with Dr. Morse that Kernig's sign as a diagnostic element in forms of meningitis in infants under two years of age is of very little clinical value. He said the sign should not be confused with a condition of myotonic contraction.

Bacteriology of Meningitis.—Dr. F. S. CHURCHILL of Chicago read this paper. Only the known bacterial cases were reviewed. Six cases showed meningococcus; one case pneumococcus; one case pneumococcus in the spinal fluid; one case primary tubercle bacilli; one Klebs-Loeffler bacillus; one case syphilitic; four undetermined cocci; four no organisms in the spinal fluid. The meninges, like other parts of the body, might be attacked by a variety of organisms; 80 per cent. of the trouble due to meningococcus. Next to the meningococcus, pneumococcus was the most frequent cause. Mode of access to the meninges through the throat and nose. Diagnosis between the different types could not be made from the clinical picture, but only from spinal puncture. Mixed infections were infrequent. The organism could be found in the nose and throat of healthy individuals living in close proximity to patients ill with meningitis, and these patients should be isolated. The meningococcic cases should always be quarantined, and probably the pneumococcic ones.

Grip Meningitis.—Dr. SAMUEL S. ADAMS of Washington reported this case, the child when first seen being supposed to have an attack of indigestion, had a temperature of 106°, pulse 140, and the writer made the diagnosis of grip, which was confirmed by several eminent consultants. Complained of headache and of being tired. Blood examination showed nothing of importance. An otologist excluded any disease of the middle ear. Then Kernig's sign developed; symptoms of meningitis; lumbar puncture performed; two ounces of fluid withdrawn, which showed the presence of influenza bacillus. This was the first case reported by an American in which the diagnosis had been confirmed by finding the organism in the fluid of lumbar puncture.

Dr. HENRY KOPLIK of New York said he had before mentioned a case similar to this of Dr. Adams, and had since had another case.

Dr. L. E. LAFETRA of New York reported a case of tuberculous meningitis with a terminal infection of pneumococcus; also a case in which at autopsy the influenza bacillus was recovered in the pus.

Dr. L. LOVETT MORSE of Boston disagreed with Dr. Churchill as to the necessity of isolating meningitis cases; he did not believe the danger of contagion was very great.

Dr. HAMILL of Boston reported a case in which the tubercle bacillus was isolated from the spinal fluid, with recovery of the patient. He agreed with Dr. Churchill as to the necessity of isolating these cases.

Dr. JACOBI of New York agreed with Dr. Morse that it was not practicable to isolate these cases.

Congenital Stenosis of the Duodenum.—Dr. H. L. K. SHAW and Dr. LEON BALDAUF of Albany presented this case of congenital stenosis of the duodenum, exhibiting photographs of the condition and the specimen. Child born after normal labor; twelve hours after birth passed meconium; placed at breast and vomited small amount of greenish fluid some time later. During next two days

vomited greenish fluid a number of times; seemed hungry and cried as if in severe pain; nursing discontinued, and barley water and whey substituted; meconium and some brownish fluid passed. Operative procedure postponed in the hope that the condition might be spastic. Ten days after birth had lost 2¼ pounds. Died thirteenth day after birth. There was stenosis of the bowel below the opening of the bile duct.

Thursday, May 9—Third Day.

The Caloric Value of Modified Milk in Its Relation to Infant Feeding.—Dr. Maynard Ladd of Boston read this paper, which consisted of a series of cases studied by the writer, in which the rate of growth in relation to the number of calories taken had been estimated. The series comprised twenty cases, and tables were shown exhibiting the weight development. Great variation was noted between the calories taken and the gain in weight, and the writer concluded that the calories in the food of the infant in the first year of life could not be furnished by fats and proteids vicariously; that a given number of calories did not necessarily cause the same rate of growth, even when of the same age and development; that the caloric value of the food is not the most important consideration in determining the quality of the infant's food. Neither the number of calories, nor the energy quotient, could be determined accurately.

Dr. L. Lovett Morse of Boston considered the American method of feeding better than the German, but thought the good points should be taken from both. He estimated the food in calories from time to time chiefly to make sure in cases of difficult feeding that he did not get the total amount too low.

Dr. Henry Koplik of New York called attention to the amount of waste in the gut, which he said was absolutely undeterminable. He thought that the percentage method was not the only way of feeding a baby successfully; in buttermilk feeding, even though the percentage food contained more calories, the waste in the gut in liberating the food was such that the baby might do better on buttermilk.

Dr. Freeman of New York deprecated the tendency to feed the babies on proteids of less than 1 per cent., and thought that if attention were paid to the matter of caloric values better standards would be obtained.

Dr. L. E. LaFetra of New York emphasized the points made by Dr. Morse and Dr. Freeman, and thought it would be enlightening if we could determine the lower limits of caloric value to be supplied by the proteids; the upper limits could be determined by the digestive capacity of the infant.

Dr. Thomas Morgan Rotch of Boston protested against the habit of speaking of any method as an ideal method. Cases should not be treated with any one method alone. What should be insisted upon was that the method used should be exact.

A Case of Myxedema.—Dr. Geo. N. Acker of Washington presented this case, which was a child healthy until eighteen months of age, when he presented it to the society in Raleigh in 1903; it was then a typical case of myxedema. It had been upon thyroid gland treatment since, and was now a well developed child and in good condition; gained seven inches during the first year; height now forty-one inches.

The Symptoms of Status Lymphaticus in Infants and Young Children.—Dr. John Howland of New York had observed over twenty-five cases during the last year. No gland weighing less than 10 gm. was considered pathological; the average weight of the gland during the first two years being 6 gm. To be on the safe side he had included none weighing less than 15 gm. All the tissues of the body were hyperplastic, including tonsils and adenoids. The changes consisted of a hyperplasia of tissue normally present. Symptoms were sudden death at beginning of anesthesia, administration of antitoxin, or the child might die suddenly in bed; in another group, the characteristic symptoms were, with or without some indisposition the child becomes suddenly ill; rapid, gasping respiration, with cyanosis; attacks of convulsions; temperature in majority very high, 104° to 107°. The dyspnea not an obstructive dyspnea, but toxic in character. These cases were usually called acute congestive bronchopneumonia. A rarer form were those cases associated with purpura.

Dr. Blackader of Montreal had had a very painful experience with one of these obscure cases, in which death had been attributed to change of nurses; autopsy showed a greatly enlarged thymus, 18 or 20 grams.

Dr. Thomas Morgan Rotch of Boston said this was a subject the knowledge of which should be more widespread, as the cases were often not recognized.

Dr. S. M. Hamill of Boston was glad to hear the writer take the view that these cases were of toxic origin. There was great similarity between the condition and the infections—in the character of the dyspnea, its irregular nature, and in the cyanosis and convulsive seizures.

Dr. Howland, in closing, said he had not observed a case that had recovered, except the one in which the thymus acted as a foreign body, obstructing respiration.

A Study of the Early Conditions of Osteomyelitis in Young Children by the Roentgen Ray.—Dr. Thomas Morgan Rotch of Boston had been making a study of this condition by means of the *x*-ray, for he had concluded that delay in diagnosis, as in appendicitis, might mean death, or deformity that could not be remedied. To accomplish this early diagnosis the *x*-ray was of inestimable value and in a number of cases it could only be diagnosed by that means. The *x*-ray should be used at once with the earliest appearance of the symptoms. Photographs illustrating the writer's remarks were shown and he enunciated the importance of remembering that cases of osteomyelitis were not so rare and that in most cases early operation was what would save the limb from deformity and in many cases save the child's life.

Dr. Samuel Adams of Washington thought that in most cases the physician was more capable of making a correct diagnosis in these cases than the surgeon and deprecated the habit of turning the cases over to the surgeon until every means of clinical diagnosis, including the *x*-ray, had been utilized.

Dr. F. S. Churchill of Chicago agreed with Dr. Adams as to the attitude of the physician towards the surgeon in these cases, and reported a case occurring in a girl of eight years, involving both tibia, both radia and the forehead, following in the wake of a severe typhoid. Typhoid bacilli were recovered from the pus at operation.

Dr. L. E. La Fetra of New York emphasized the fact that these cases are not infrequent; he had seen ten in the last five years. Early treatment in these cases would save the limb.

Dr. Rotch thought the expert opinion of both surgeon and laboratory man was of the greatest importance, and he had a very strong faith in the surgeon. It was only by a combination of all these opinions that the best results could be obtained.

A Case of Chylothorax.—Dr. C. G. Jennings of Cincinnati reported this case, an infant, nine years of age, presented with dyspnea. An acute catarrhal affection some weeks before and following that persistent fever and symptoms that pointed to pneumonia. There were physical signs of pleural exudate and it was thought to be a case of empyema. Aspiration revealed instead of pus, chyle; first aspiration, 12 ounces. Chest aspired thirteen times and peritoneal cavity once. The child presented practically no symptoms when the fluid was not present. Tuberculin used without reaction. The fluid had all the chemical qualities of chyle and the microscopic picture was that of chyle.

The Need of Greater Accuracy in Prescribing Starch in Infant Feeding.—Dr. Maynard Ladd of Boston read this paper, which was designed to bring out one point, the

great indefiniteness of physicians in the use of the cereals. The paper presented a plea for more accurate methods of prescribing starches in percentages as with fats and proteids. In the barley water mixtures there was great variation in the amount of starch contained, and the inaccuracy due to this was responsible for many of the cases in which the child was not supposed to be able to digest starches at all. Formulas varied from 0.64 to 6 per cent. Using the minimum or maximum solutions as diluents the amount of starch varied from 0.51 to 4.8 per cent. The rational thing to do was to give the minimum starch solution in the early months and gradually increase with the age

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-second Annual Meeting, Held at Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

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DR. CLEMENT CLEVELAND OF NEW YORK, PRESIDENT, IN THE CHAIR.

Wednesday, May 8—Second Day.

Ovarian Pregnancy.—Dr. J. CLARENCE WEBSTER of Chicago presented a specimen of ovarian pregnancy. The case was almost identical with the one he reported three years ago, though more interesting, in that the embryo was in position in this specimen. One could see the amniotic cavity with the embryo in position. The thickness of the ovarian tissue averaged about half an inch, except the placental area, where it was thicker. There were several hemorrhages in the ovarian tissue, especially in the position of the placenta.

Unique Specimen.—Dr. WEBSTER presented another specimen, which he obtained two years ago while on a vacation in New Brunswick from Drs. White and Ferguson. The patient from whom the specimen was removed was a man thirty-three years of age, who was admitted to the hospital with symptoms of acute peritonitis. He had had for many years an irreducible scrotal hernia, and it was supposed there was strangulation. The man had been kicked by a horse. An incision was made in the left inguinal region; no hernia was found, but a structure which looked like an adult uterus, tubes, and ovaries. The uterus was removed, and what appeared to be a cervix. It was adherent around the inguinal ring; the abdomen was rapidly opened, the patient being practically moribund by that time. The incision was closed, and nothing more was done. Patient died. No autopsy was made. The specimen was given to Dr. Webster, and he had carefully worked it up. On first presentation it seemed like the adult female genitalia, but careful dissection and microscopical study disclosed uterus and tubes, and what appeared to be ovaries were testicles, but occupying exactly the same position as the ovaries in the female. The mucosa resembled that found in the adult female. Microscopical examination showed the glands were complex. He emphasized particularly the adult uterus. The tubes had the characteristics of those of an adult female, except the fimbriæ were not so complex. There were fewer fimbriæ, but the relationship of the testicle was exactly the same. On one side there was more marked ovarian or testicular fimbria. On examination of the broad ligaments he found on one side there was a cyst. Both round ligaments were present, but on the side on which the cyst existed the round ligament was flattened out and thin. On careful dissection of the broad ligaments there was a marked tube, about four millimeters in diameter, slightly convoluted, extending from the upper inner portion of the broad ligament towards the cervix. It was quite firm, and had the consistence of a pipe-stem. He pointed out the Wolffian duct, and the vas deferens, also the cervix and prostate. The patient was the father of twin children.

Dr. E. W. CUSHING of Boston narrated a case of a man operated on for hernia, in which a uterus was found in the hernia.

Dr. THOMAS S. CULLEN of Baltimore said that some years ago in Baltimore there was found at autopsy in a child a complete set of both female and male pelvic organs.

The Care of the Wound and the After-Treatment of Laparotomies.—There was a symposium on this subject.

The Method of Closing the Wound.—Dr. SETH C. GORDON of Portland, Maine, read a paper on this subject. He spoke of the time required for perfect union of abdominal wounds, and also pointed out the necessity of using such sutures as can be retained at least two weeks without absorption. He emphasized the use of suture material which is not absorbable, and which can be removed at the end of two weeks, as well as the use of suture material that was least liable to infection.

The Comparative Advantages of Catgut and Silver Wire Sutures for Closing the Fascia after abdominal Incisions.—Dr. HUNTER ROBB of Cleveland, Ohio, said the ideal suture material should be smooth, pliable, but not brittle, not too costly, easy to obtain on short notice, and, above all, readily rendered completely sterile. Catgut would be an almost ideal material, but when we sterilize it to a degree short of rendering it brittle, and consequently useless, some few of the inner strands may not be absolutely aseptic; and, in fact, not a few cases of suppuration, and even death, have been directly traceable to the use of catgut ligatures. The cumol method probably gave the best results, but for the past few years he had had excellent results with the ordinary and chromicized catgut as prepared by Van Horn of New York, especially when the smaller sizes were used. When, however, the larger sizes of chromicized catgut were employed, the sutures were not always absorbed, but frequently gradually worked their way to the surface of the wound, and were then discharged. They were not always sterile. Bacteriological tests made in his service had shown that the knots and end of catgut sutures, even when the wound had healed by first intention, teemed with bacteria, and he felt sure that chromicized catgut was responsible for many of the skin infections encountered. In one case of phlebitis following an amputation of the cervix, in which chromicized catgut was used, he was inclined to attribute this complication to the suture material. He now preferred to use for the skin and peritoneum small sizes of sterilized catgut, but for the fascia he believed that silver wire offered advantages over the larger sizes of plain or chromicized catgut. These results had been deduced from recent experience, and largely also from an analysis of two series of 100 cases each, in which silver wire and chromicized catgut respectively were used in bringing together the deep fascia. This analysis showed that the relative incidence of infection in the deep fascia occurring after the use of catgut and silver wire respectively was as two to one. Moreover, it was noted that when suppuration occurred it was always larger in amount and extent in the catgut cases than in the infections met with after the use of silver wire. The main objection against the use of silver wire for bringing the fascia together was that one left in the wound a substance that might annoy the patient by sticking into the surrounding tissues. This trouble, however, could be readily averted if the suture was properly applied and the ends were turned over with a pair of thin-jawed hemostatic forceps, so that they form a ball-like end to the suture. This annoyance had to be remedied in only four out of four hundred of the silver wire sutures. Removal under cocaine was always easy and painless. So far as the occurrence of hernia was concerned, *a priori* this accident should be less likely to occur after the use of silver wire, as this material undoubtedly approximated the tissues for a greater length of time, and in his experience had given rise to suppuration less often. Hernia was not

noted in a single case in either series, but the separation of the fascia and muscle often did not take place within the first few weeks after operation, and yet sometimes if these patients were examined some months or a year afterwards a smaller or larger protrusion would sometimes be apparent. He had not infrequently noted such an occurrence in patients who had been operated upon by other men, and he had no doubt that others had met with the same thing in some of his cases. Consequently, so far as hernia was concerned, he did not believe that we should judge of the relative value of the suture material except in cases examined at an interval of six months or a year after operation.

Dr. LEROY BROUN of New York said it was his custom, in closing a wound, to bring together the fascial edges with chromicized catgut. He did not rely on this entirely, but introduced, at the same time, some safety sutures of silkworm gut at about an inch and a half apart, and he saw that these were kept in for at least two weeks to guard against the opening of the wound by coughing, a sudden jar, or sneezing.

The Use of Laxatives in the After-Treatment of Laparotomy.—Dr. HENRY T. BYFORD of Chicago said that some laparotomies were of such a simple nature that the functions of the abdominal viscera were not materially disturbed thereby, and need not be disturbed afterwards by medicine. Exploratory peritoneal section, and the removal of nonadherent ovaries, were apt to be of this nature. But the majority of laparotomies represented a different problem. When there had been considerable trauma during the operation, with consequent soreness and inability to endure the pains, he applied an icebag to the abdomen rather than give opiates. The icebag and an enema containing thirty grains of chloral would usually alleviate the pain and nervousness, and sometimes the nausea, without inhibiting peristalsis. If his only object were to save life he should not bother the patient with the laxatives unless abraded or injured tissues had been left to form adhesions; but he confessed, at the risk of being considered meddlesome, that he gave laxatives in all but the simplest cases, because in those who did not really need them the bowels were more quickly relieved of the gas, and the patient then felt much better than when not so treated. Patients who had undergone a previous laparotomy generally remarked, without being asked, that they were having a much more comfortable convalescence than after the previous one in which they had either taken no laxatives, or had taken opiates for the pains.

Care of Stomach and Bowels; Position and Rest in Bed.—Dr. LAPTHORN SMITH of Montreal did not allow anything whatever to go into the stomach of a patient during the first twenty-four hours. The bowels were moved by enema on the third day and every day after, unless they moved naturally. If there was vomiting, calomel was used generally with bicarbonate of soda. Position depended on the severity of the case. In hemorrhagic cases the foot of the bed was raised, or, in septic cases, especially after appendicitis, the head was raised. Rest in bed for three weeks was the safest so as to improve digestion and nutrition. Twenty-one days after operation the patient was allowed to get up and to begin gentle exercise, so that by twenty-eight days she could walk about freely.

Eserine Salicylate as a Prophylactic Against Atony of the Bowels.—Dr. HIRAM N. VINEBERG of New York referred to the use of this agent, saying it had a beneficial effect when given to a patient before coming out of anesthesia. It was given in doses of one-fortieth of a grain. It was the custom to give 1-4 or 1-8 of a grain of morphine, with 1-40 of a grain of salicylate of eserine. He thought there was less distention of the abdomen after the use of eserine in this manner.

The Incision and After-Treatment.—Dr. W. GILL WYLIE of New York said the location of the incision varied with the internal condition. The method of closure varied according to the site of the incision. Method also varied with the condition of the bowels due to preliminary preparation.

The After-Care of the Patient.—Dr. HERMAN J. BOLDT of New York said that mobility of the patient was begun as early as was consistent with the patient's general condition. The greater number of patients might be out of bed with advantage to them within three days. A large number, even those upon extensive and technically difficult operations had been done, might be out of bed and placed in a comfortable chair within from twenty-four to thirty-six hours after the operation. A properly adjusted plaster bandage, adhesive, was essential for the safety of the wound. Neither the stomach nor the bowels required any special consideration unless there was some particular indication for it.

The After-Care of the Patient.—Dr. J. MONTGOMERY BALDY of Philadelphia said that rest in bed, good hygiene, diet and nursing were the principal factors in the end results. Moderate early getting up after operations was all right for patients in good general condition, but it was bad for others. There was nothing to recommend getting up in twenty-four or forty-eight hours. There was nothing to be gained, but much to be lost. That prolonged stay in bed increased the frequency of embolism and thrombosis was not true. He would admit that a surgical case might be gotten out of bed and home in a week or ten days, but he denied that this was best for the patient, or that this meant that convalescence had been more rapid. The aim should not be to get patients home in the quickest possible time, but to give them the best amount of stored-up health and energy with which to successfully meet the future. One who had gotten out of bed with health fully restored was surely more competent to meet the necessities of everyday resistance than one who had been quickly put upon his feet with little regard to his general condition.

The Prophylaxis of Venereal Disease from the Standpoint of the Gynecologist.—Dr. CLEMENT CLEVELAND of New York took this as the subject for his Presidential address. He said the position of the gynecologist regarding venereal disease was one of greater enlightenment than that of his brother of the general profession, because of his greater opportunity for observing it. His responsibility was, therefore, proportionately greater. From gynecology had come all the present-day knowledge of the effects of gonorrhea in women, and the inspiration for all that was known of its lasting effects upon men. The responsibility of enlightening the public did not rest with the medical profession alone. It was not a medical or sanitary problem merely, as the causes were dependent upon social conditions beyond control of the physician. By constant study and agitation the best methods for reaching the people would be evolved. All medical schools should pay the greatest attention to instruction in veneral diseases and their consequences, and some were doing so. The student and physician could not be too often reminded of the responsibility that rested upon them, not only in the treatment of these diseases, but as regards prognosis, and sanction of marriage. Many thousands of young men with a gonorrhea uncured married, and with the sanction of their physicians, who had not been as careful as they should have been in giving approval. For himself, he was positively convinced that the gynecologist should not play over the surface of the subject, but should get right down to the foundation of the matter and display it in all its ugliness. In this way only could there be any hope of making influence felt and expect to reach any moral advancement. To overcome indifference and arouse an urgent public sentiment in favor of the movement, there was no more powerful argument than the fact that the greatest sufferers from these diseases were innocent women and children. Constant preaching of this one fact alone would gain more supporters for the cause than all others combined. In closing, Dr. Cleveland thought it would be well to have a

standing committee to report each year, to arrange for papers in symposium, to invite prominent men to read papers before the society, or in other ways to make prominent the vital interest that was felt. By so doing gynecologists would acquit themselves of any charge of inactivity, and at the same time have the satisfaction of feeling that they were doing their share in helping on the good work.

Work of Henry Garrigues Appreciated.—Dr. Brooks H. Wells of New York delivered an oration on Dr. Garrigues in appreciation of his work in introducing asepsis into obstetric practice in America.

(To be continued.)

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Third Annual Meeting, Held at Washington, D. C., May 6, 7, and 8, 1907.

Special Report to the Medical Record.

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PATHOLOGICAL AND BACTERIOLOGICAL SECTION.

Dr. F. F. Westbrook of Minneapolis, Chairman.

Split Products of the Tubercle Bacillus and Their Effects Upon Animals.—Dr. Victor C. Vaughan and Sybil May Wheeler of Ann Arbor presented this communication. They split up the tubercle cell into two portions—the cell poison and the cell residue. The culture medium had been concentrated and then precipitated with five times its volume of absolute alcohol and this precipitate had been broken up into two portions—the precipitate poison and the precipitate residue; and the portion of the culture medium left after the removal of the alcoholic precipitate they had designated as the final filtrate. In considering the effect of the cellular substance on animals it should be borne in mind that the cellular substance with which they were then dealing was that of a tubercle bacillus that was virulent to rabbits and guinea pigs, and that it had been thoroughly extracted with alcohol and ether. There remained, as it were, only the proteid skeleton of the bacillus. They had injected into the abdominal cavities of twenty-four guinea pigs single doses, varying in amount from 5 to 200 mg. of the cellular substance and from these experiments they made the following statements: (1) In no case was death caused directly by the injection; animals that received from 100 to 200 mg. remained apparently well four months after the injection. (2) It gave in guinea pigs no immunity to a subsequent inoculation with a virulent bacillus. (3) It did, for a short time at least, sensitize guinea pigs to the tuberculosis bacillus, an interesting and a hopeful point. The effect of the cell poison on animals was shown to be a poisonous one to the respiratory center. It developed three stages of peripheral irritation, partial paralysis, and terminal convulsions. When given in sufficient quantities it killed within an hour both healthy and tubercular animals. There was no evidence that it elaborated any antitoxin and it was harmful, with nothing to recommend it. What was true of the cell poison was equally true of the precipitate poison, and the final filtrate. The effects of the cell residue on animals were practically nil. This was the non-poisonous group obtained by splitting up the cellular substance with alkali in absolute alcohol. In this method there was one ray of hope of finding among the split products a body that might possibly be of service in the treatment of incipient and localized tuberculosis. One of the most interesting studies regarding the split products of the tubercle bacillus was that of the effect of the precipitate residue on animals. On healthy animals it had no recognizable ill effects in either single or repeated doses, large or small. Experiment showed that the precipitate residue had some specific effect upon tuberculous animals. The precipitate sensitized guinea pigs to the tubercle bacillus just as the cell residue did. Evidently their so-called residues were much alike and it was more than probable that they contained the same active constituent. Of one thing they were satisfied, and that was that no preparation from the tubercle bacillus should be used in the treatment of tuberculosis until the poisonous group of the tuberculous proteid and other proteids in the culture medium were removed. During the past two years one of them used solutions of the cell residue in the tuberculosis in man and the following statements seemed justified: (1) It was of no value in advanced cases of pulmonary tuberculosis. (2) It might prove harmful even in initial cases if the dose be too large or if small doses be too frequently repeated. (3) When properly used in initial or in localized tuberculosis its action was apparently prompt and specific. (4) When given to an individual with pulmonary tuberculosis its effect upon the sputum should be watched and should guide further treatment. He wished it to be clearly understood that in well-established cases of pulmonary tuberculosis no benefit from this treatment could be expected. He believed that in initial cases this preparation was preferable to any form of tuberculin.

Further Notes on the Technique of the Tuberculo-Opsonic Test.—Drs. Hugh M. Kinghorn, David C. Twichell and Norman M. Carter presented this communication from the Saranac Laboratory, of which Dr. E. L. Trudeau was Director. After calling attention to the technique reported at last year's meeting (see Medical Record, Vol. 70, No. 5, August 4, 1906, page 190), they said they wished to describe the technique as they now used it, hoping that it might help other investigators in this particular line of work. The following conclusions were offered: (1) The tuberculo-opsonic test was probably one of but fair accuracy. While several control tests of one serum might be almost the same, one or more of the tests was very apt to be considerably too high or too low, and they, therefore, allowed for a "probable cure" of from 15 to 20 per cent. (2) In their own judgment, based on a large number of counts, they thought that at least 100 polymorphonuclear leucocytes should be counted, and that any less number than this might not give an accurate estimation. (3) Under favorable conditions, the time required to make five opsonic tests was about one and a half hours, not estimating the time necessary to count these.

Homologous Bacteria as a Vaccine in Tuberculosis.—Dr. Albert H. Allen of Saranac Lake presented this paper, which was read by Dr. Lawrason Brown of Saranac Lake. This was a preliminary report. The object of this investigation was to obtain from sputum a standardized vaccine for tuberculosis. The product was called tubercle vaccine since it resembled closely an emulsion of a tubercle. In brief, these were the following steps: (1) Fresh sputum was carefully washed through six normal salt solutions. (2) The sputum was then thoroughly homogenized with an ordinary egg beater for ten to fifteen minutes. (3) It was then attempted to separate the tubercle bacilli from the pus cells. The least unsatisfactory method was to collect the foam after homogenizing. This foam seemed to be freer of cells and at the same time richer in tubercle bacilli. Foam was quickly liquefied by placing it under an exhaust pump. (4) Emulsion from (3) was concentrated by centrifugalization. (5) This emulsion was then standardized by a modification of A. E. Wright's method. (6) The emulsion was then sterilized by heating on two successive days for two hours at 60° C., and 0.25 per cent. lysol was added for preservation. (7) In order to preserve the toxins and ferments present from heat, a portion of the emulsion before sterilization was passed through a Berkefield filter. It would seem hard to standardize this filtrate, which might be an important adjuvant to the vaccine. This filtrate was either to be added to the vaccine or injected separately at the same time. To test the sterilization, on

March 16 one healthy guinea pig was injected with 1 c.c. of the 175 million emulsion that had been heated two hours at 60° C. one day. Another healthy guinea pig (half grown) received 0.5 c.c. of this emulsion, heated thus on two successive days. After six weeks the autopsies showed in the first guinea pig tubercle lesions, in the second guinea pig none. The injection of unaltered tubercle bacilli in considerable numbers into tuberculous animals produced ulcers at the site of injection. To test this point with tubercle vaccine, two supposedly tuberculous guinea pigs were inoculated. No ulcers resulted, but autopsies at the end of six weeks showed no lesions except caseous glands near the site of injection in the guinea pig receiving the vaccine heated only once. The influence of opsonification on the immunizing power of bacteria was still an unsettled question. To see if the tubercle bacilli in tubercle vaccine were opsonified, tubercle vaccines, sterilized and unsterilized, were added to unwashed leucocytes, appropriate controls having been made; no phagocytosis resulted; after adding serum, phagocytosis did occur. Only two such tests had been made so far. They proposed to study the action of the vaccine by various experiments on animals. Dr. Trudeau had suggested that since one of its main advantages lay in its being homologous, animal tests would not be entirely fair. He further suggested that the homologous feature could be approximated by infecting the animals to be treated with the unsterilized vaccine to be used.

Dr. Milton J. Rosenau of Washington asked whether tuberculin was present in one or all of the split products that Dr. Vaughan had used.

Dr. William H. Park of New York said that he recently had a personal letter from Dr. Wright regarding his pessimistic attitude on the subject of the occasional inaccuracies; he believed that there might be some error in the technique. All seemed to get wild counts. He used the glycerin-agar for the tubercle bacilli; the development seemed shorter. He asked Dr. Vaughan whether or not the animals receiving these large doses were afterwards immune.

Dr. E. R. Baldwin of Saranac Lake believed that the use of the poisonous part of the tubercle bacilli was unjustified; they knew that in hypersusceptibility the poisonous part of the tubercle bacilli could be removed. As a matter of clinical observation and of experimental work, they knew that animals inoculated with non-virulent bacilli, or their products, might overcome susceptibility to these products in the course of time, provided they were not overdosed in the beginning. It did not appeal to him that, after excluding the toxic part of the tubercle bacillus, it could be used as a possible therapeutic agent.

Dr. G. B. Webb of Colorado Springs recently took twelve healthy students in Colorado and made some observations. They were sent to Pike's Peak, a distance of about twelve miles, and only one failed to get there; ten came out normally.

Dr. Rufus I. Cole asked Dr. Kinghorn if the addition of formalin had any effect upon the phagocytosis.

Dr. Victor C. Vaughn of Ann Arbor, in answer to Dr. Rosenau's query, said that if he would tell what was meant by the word "tuberculin," he might be able to answer the question. He could not answer Dr. Park's question, for he had not made enough experiments to warrant a statement. So far as his experience went, he had never been able to produce anaphyloxia or hypersusceptibility with the poisonous part of a proteid.

Dr. Hugh M. Kinghorn of Saranac Lake said that formalin in a 1-1250 proportion did not influence phagocytosis.

Dr. Mayzck P. Ravenel of Philadelphia and Dr. Nathaniel B. Potter of New York discussed the paper.

The Pleural Pressure after Death from Tuberculosis. A Preliminary Study.—Dr. W. B. Stanton of Philadelphia read this paper. He said that the existence of minus or negative intrathoracic pressure was first noted by Carson in 1819, and the subject had since been further studied by Donders, Hutchinson, Heynsius, Perle, and others, and the existence of a negative intrapleural pressure might be considered as proven. This negative pressure was due to the fact that the lungs were constantly distended, and the elastic fibers of the lungs were constantly striving to regain a condition of non-tension. Hence, the amount of intrapleural pressure under normal conditions would show the amount of elastic tension of the lung. This tension of the lung and its tendency to become smaller was well shown by the collapse of the lungs when the chest was opened, either during life or after death. It was because of this condition of a negative intrapleural pressure that a pneumothorax occurred when the lung ruptured or the chest was perforated from without. The observations he reported were made upon patients dying at the Henry Phipps Institute as a part of a study of the pleura and its behavior in tuberculosis. The method employed consisted in the insertion of a hollow needle which was connected with a mercury manometer into each of the first five interspaces. This was done before the body had been touched by the pathologist. All examinations were made within twelve hours after death and one or two while the body was yet warm. When the pressure was negative the needle was pushed still further into the chest to find, if possible, the pressure conditions within the lungs. The punctures were made anteriorly along the anterior axillary margin. The skin was pulled as far as possible to one side and the puncture made through the tense tissues. The return of these tissues to a natural position acted as a valve to prevent ingress of air after the needle was removed. From these 23 cases certain preliminary deductions were justifiable: (1) In cases dying of tuberculosis, pleural adhesions of greater or less extent were practically constant over the upper lobe. The lower lobes were free in about one-half the cases. (2) The intrapleural pressure might vary in the different interspaces of the same chest. This variation was most often due to pleural adhesions which obliterated the pleural cavity at the point of tapping; it was less often due to lung conditions. (3) The intrapleural pressure varied widely in different subjects, from minus 24 mm. to plus 10 mm. (4) The intrapleural pressure might be negative or minus, while the pulmonary pressure was positive or plus. (5) The minus intrapleural pressure found in tuberculous subjects were much increased when compared with text-book standards. (6) Zero pressures were found in one-half the cases in the first two interspaces.

Dr. Lawrence F. Flick of Philadelphia said this was a subject that had been too much ignored in the past. The study of the pleura in those dying of tuberculosis had opened his eyes; they found that there was perhaps less healthy tissue left after death in the pleura than in any organ or tissue of the body. In other words, when a case of tuberculosis had reached its normal termination in death, the pleura was shown to have borne the brunt of battle to a greater degree than any tissue in the body. He believed the top of the pleura was the primary seat of the disease, and Calmet also believed and proved that the parietal layer of the pleura, in animals he had injected, showed the primary focus.

Dr. Lawrason Brown of Saranac Lake asked Dr. Stanton if he noticed in cases of pneumothorax any displacement of the heart. In one of his cases the pressure was so great that the heart was displaced to the right of the sternum.

Dr. Stanton said that he had made a large number of such observations, in which there was a displacement to the right in left pneumothorax cases, and to the left in right pneumothorax cases, and this was quite constant.

Dr. Leonard Weber of New York said that the top of the pleura could not well be the primary focus of tuber-

culosis, and in all the post mortems that he had witnessed, or had himself made, he was convinced that the infection of the pleura was secondary in a large proportion of the cases. He did not mean to deny that primary tuberculosis of the pleura might not occur.

Disseminated Focal Necroses Due to Tubercle Bacilli (Acute Miliary Tuberculosis without Tubercle Formation).—Dr. A. S. WARTHIN of Ann Arbor presented this communication.

The Frequency of Occurrence of Tubercles in the Liver in the Absence of Tuberculous Lesions Elsewhere in the Body.—Dr. A. S. WARTHIN of Ann Arbor presented this communication.

Dr. S. MARX WHITE of Minneapolis and Dr. ALFRED MEYER of New York discussed these papers.

The Leucocytes in Various Complications of Pulmonary Tuberculosis.—Dr. FRANK A. CRAIG of Philadelphia read this paper. His study was based upon the examination of the blood in forty-five cases of pulmonary tuberculosis in the Henry Phipps Institute during the past year. In summing up the findings one was forced to the conclusion that the relation of the leucocyte count to the complication could only be considered in a very general way. The average findings in the uncomplicated cases of the groups showed a tendency to a decrease in the lymphocytes and a corresponding increase in the polymorphonuclears in the more advanced cases, with a decrease in the color-index, an increase in the number of red corpuscles and an increase in the number of leucocytes. These findings, he said, should not be taken too strictly, as individual cases in any group might resemble the findings of any other group. This variation from the average type, however, did not bear any definite relation to the progress of the case. The various complications, therefore, could be said to have no effect upon the blood in producing characteristic pictures, although the decrease in lymphocytes and the increase in polymorphonuclears were associated with many of the complications.

Occult Blood Findings in Tuberculous Ulceration of the Intestines.—Dr. H. R. M. LANDIS of Philadelphia read this paper. He said that statistics as to the relative frequency of intestinal ulceration in pulmonary tuberculosis varied, but he believed that a conservative estimate would place it not lower than 60 per cent. The one symptom upon which it was based was diarrhea. Among the thirty-three autopsied cases which he reported, four had loose bowel movements, from six to nine stools daily, for several weeks before death, and yet at autopsy no evidence was shown of intestinal ulceration. On the other hand, no less than thirteen, showing ulceration at autopsy, had but one or three movements daily. From his study he was able to confirm Louis' observation, that where the diarrhea antedated death but a short time the ulcers were small in size and few in number. Also that the longer the diarrhea lasted, and the more frequent its occurrence, the greater was the ulceration. Abdominal pain was rarely present. Thirteen of the thirty-three cases were examined for tubercle bacilli, and found in every instance; two of these cases showed no ulceration at autopsy. The present study represented the examination of 222 stools in 109 patients. A great part of this work was not checked up by autopsy findings, and while he gave the results of the entire series the conclusions were based only on the cases coming to autopsy, numbering 33. Taking the entire series, but one examination was made in 75 cases; of these 10 were positive and 65 were negative. In 12 two examinations each were made; of these a positive reaction was obtained in 6, negative in 7. In 22 the stools were examined three or more times. These cases, which included the six without ulceration, gave 8 positive and 14 negative results. Considering the 33 autopsied cases alone one, which gave a positive test, was omitted because of hemorrhage and a history of the presence of blood after defecation for some months prior to admission to the hospital. Of the remaining 32 cases, 26 had ulcers and 6 were free from ulceration. The six cases without ulceration were repeatedly examined, and always with a negative result. Twelve of the remaining 26 cases showed the presence of occult blood at least once, and in four instances from two to four times each. In 7 the tests were positive at the first examination; in 12 the feces were examined from one to three times with negative results. The greatest number of negative tests showing ulcers was six. While the intensity of the color reaction was an indication of the severity of the hemorrhage, it afforded no clue as to the amount of ulceration present. The case with six negative tests had a large number of ulcers. The results as indicated by these autopsied cases showed that in every instance in which occult blood was found ulcers were present in the intestines.

Dr. LAWRENCE F. FLICK of Philadelphia said that it had been demonstrated that the tubercle bacillus could be eliminated by the bowels without an open lesion in the kidney. Some of the work done by Dr. Walsh of Philadelphia left no doubt about this. Now, if it was true that the tubercle bacilli could be eliminated by the kidneys without an open lesion, by analogy it might be reasoned that the same thing could occur by the bowels; if it was possible to have an excretion of the tubercle bacilli by one organ, he believed this was possible by another.

Dr. ALFRED MEYER of New York questioned the value of evidence presented from the study of one case. The possibility of the individual swallowing tubercle bacilli in the sputum should be considered.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENERAL MEDICINE.

Stated Meeting, Held March 19, 1907.

DR. WARREN COLEMAN IN THE CHAIR.

Demonstration of Method of Weighing Patients in Bed.—Dr. CHARLES P. BULL made this demonstration.

Pyrexia in Tuberculosis. What It Tells Us and How It May Be Controlled.—Dr. HENRY P. LOOMIS read this paper. (See page 1019.)

Aerotherapy in Cold Weather, with Particular Reference to Tuberculous Diseases, and Demonstration of a New Model Window-Tent.—Dr. S. A. KNOPF read this paper. He said that the reason consumptive patients did better in winter than in summer was because cold air contained more oxygen to the cubic inch than warm air. The volume of air was reduced one five-hundredth part for each degree of reduction in temperature. Even if the temperature was only at freezing point the body took in one-seventh more oxygen than on a summer's day when the thermometer was at ninety degrees. This greater absorption of oxygen meant an increase in the number of red blood corpuscles. Dr. Lawrason Brown, of the Adirondack Cottage Sanatorium, had just written him regarding the endurance of outdoor life by consumptive patients, that 60 to 75 per cent. of all their patients slept outdoors and more would do so had they the opportunity. More slept out in the summer than in the winter. No difference was made as to the degree of cold. The patients had slept out when it was 20 and 30 degrees below zero. Dr. Herbert M. King, of the Loomis Sanatorium, where patients were received in all stages of the disease, said that 50 per cent. slept out this winter and 100 per cent. of incipient cases slept out. All those who slept on the verandas managed to be outdoors twenty-two hours out of twenty-four. The profession had at last learned to appreciate the value of cold air, not only in tuberculosis, but in pneumonia and certain nervous affections. The rest or "Liege" cure was best carried out in winter on a veranda with southern exposure, where the body could have the sun and the head remain in the shade. The patient de-

rived no benefit from the cold air if he was chilled, and hence should be warmly clad and give special attention to keeping the feet warm. The "Liege" cure should be alternated every hour or two by short walks and breathing exercises with or without movements of the arms. Even the febrile patient should not lie for hours on his back with shallow breathing if he wished to avoid hypostatic pulmonary congestion. He should change his position frequently and take a few deep inspirations every half hour or so. During drives or sleighrides the patient should be comfortably warm, and should refrain from conversation, so as to breathe as far as possible through the nose. The walking exercise should begin on graded walks of varying inclinations, and should never be long enough to overture the patient. The selection of patients for walking or mild sports, the duration and kind of exercise permissible, should be guided by the temperature, the rectal temperature when feasible. All those who had examined the value of respiratory exercises with unprejudiced mind had agreed to their beneficent local and general effect. The seemingly slight local harm or temporary pain was amply compensated by general improvement, owing to the increased supply of oxygen, the greater facility of getting rid of tenacious mucus, and the consequent diminution of the dyspneic condition. An important effect often overlooked was that these exercises counteracted loss of coördination of thoracic muscles. He added to each inspiration and corresponding expiration a second expiratory effort for the purpose of expelling as much of the supplemental air as possible. This meant an additional amount of a thousand cubic inches of fresh, pure air entering the system for every six respiratory movements. As to the class of patients that could be permitted to walk, take breathing exercises, and pursue light winter sports, one could not lay down absolute rules, yet one might say in a general way the incipient patient might walk and take breathing exercises when he was afebrile, when he was gaining in weight or holding his own in a general way, and if too markedly dyspneic he might try breathing exercises, but should not walk. Highly febrile acute pleuritic or very recent hemoptic cases should not take any breathing exercises at all. Skating, tobogganing, and skeeing were permissible in only a few selected incipient cases. A chronic temperature of 99.5° was indication for rest in the reclining chair in the open air, and a temperature of 100.5 called for the recumbent position. A temperature of 101° or more meant rest in bed in a well ventilated room, but such patients should gradually become accustomed to sleeping outdoors. The most important feature of aerotherapy for the tuberculous was sleeping outdoors. The requisites for this were specially built verandas communicating with bedrooms, or lean-tos, with heated dressing rooms, as were to be had in sanatoriums. In private homes the veranda should be so protected that the patient was not exposed to the wind. The sleeping shack was only desirable when it had a compartment that could be heated. A lean-to was a structure costing about $18.30, and would accommodate sixteen patients, making the cost per patient only a little more than $1.14. The lean-tos were grouped around a central administration building, and a sanatorium on this plan with a capacity for 150 patients under municipal, county, or State control and designed for early cases among the poor would cost about $80,000, exclusive of land, or about $533 per patient, much less than the present cost in sanatoriums. For those compelled to remain in the city one form of window tent was best suited for outdoor sleeping. Dr. Knopf presented a new model of a window tent which he described in detail. The advantages of this last model over former ones were that it was far simpler and cheaper in construction, offered greater facility for cleaning and disinfecting, and had a method of attachment which permitted of its removal from the wind when not in use. Drop infection was limited to a minimum and the canvas could easily be removed and the steel frame washed. With this tent there was no possibility of a draft, but the patient should be warmly clad when sleeping in the window tent. Warm night gowns and coverings were not enough. Heavy weight linen-mesh union suits seemed to him best, though wool might be preferable. To prevent cold from coming through the mattress from below several layers of newspapers laid over the springs, or a layer of linoleum, were useful. Besides this there should be a plentiful supply of blankets. Where there was a shortage in this direction several layers of newspaper sewed between two layers of blanket were of service. The covering should not be so heavy as to weigh down the body. Lightly woven blankets seemed to be better protection than loosely woven ones. The feet should be kept warm by means of hot sandbags or hot water bottles. In extremely cold weather the head should be protected by a woolen cap, shawl, or helmet. If the tip of the nose became too cold it might be protected by a piece of absorbent cotton fastened with a strip of adhesive plaster along the crest of the nose, taking care not to occlude the nostrils. If the bright light early in the morning kept the patient awake some light weight but dark colored material could be put over the eyes. Patients should always dress and undress, for a sojourn in the cold air, in a warm room. The window tent could be used for a rest cure during the day if necessary, a reclining chair being put before the window instead of the bed. There were limitations to outdoor resting and sleeping. One unaccustomed to outdoor life or outdoor sleeping, or even sleeping with the windows open, should begin with an hour before and an hour or two after the principal midday meal. Little by little the time outdoors should be increased. Outdoor sleeping should be begun with a few hours at a time. If a patient became chilled after taking all precaution the process of hardening must go on more slowly. In his own experience he had never noticed that a chronic catarrhal condition of the upper air passages had been brought about or if present had been increased through pure, cold air; but, on the contrary, had always found the condition to be benefited by judicious sleeping outdoors. He was, however, convinced that an acute coryza or acute grippe in its early stages was better treated in a moderately warm, but well ventilated room. The same might be said of an acute pleurisy or a severe hemoptysis. Unless a patient far advanced with tuberculosis wished it or felt better for it one should not insist that he sleep outdoors. When it was evident that a patient had no chance of recovery, sleeping outdoors against his inclinations was utterly useless, unscientific, and inhumane.

Dr. W. P. Northrup said he was always interested in every device which gave a sick individual the benefit of cold, fresh air. He asked Dr. Knopf what he meant by fresh air? Dr. Northrup maintained that patients were greatly benefited by cold, fresh air. They did better during the winter than the summer months. He was skeptical regarding what had been said of oxygen. The value to patients was in the *cold* fresh air. He asked Dr. Knopf if only the head and neck were exposed.

Dr. Knopf replied that one-half the body was exposed.

Dr. Northrup then maintained that if it was a question of head and neck in the tent and the rest of the body in the room, or the head and neck in the room and the rest of the body in the tent, he would prefer the trunk and legs in the tent and the head and neck in the room. He maintained that the body breathed as much as the lungs; and the question of cold fresh air was as important for the skin of the body as it was for the lungs. He referred to the experiment made with a kitten. When the kitten's head was placed in a rubber pouch, with body outside, it breathed without harm; but when the kitten's body was in the pouch and the head outside, it graduall began to stow heat and suffered from heat stowing.

Dr. Theodore C. Janeway said that they were indebted to Dr. Knopf for what he had done in the field of thera-

peutics. He was impressed with what had been done last fall in Boston in the Outdoor Department of the Massachusetts General Hospital in caring for the tuberculous patients in their homes. Dr. Pratt and Dr. Cabot ran large classes of tuberculosis, and the cases were treated on the roofs, and in the back yards. Many patients had been refused admission to Rutland because they were considered to be too far advanced. In spite of that the percentage of arrested cases in the clinic he thought would compare favorably with the statistics of the sanatoria. The whole matter rested in the conscientiously carrying out of sanatorium methods and treatment with rest, care in the open air, breathing and exercise such as Dr. Knopf had told them of. In New York City it was difficult to utilize the roofs; therefore, the device presented by Dr. Knopf was of special value. Two or three years ago Dr. King told very strikingly about the patients who slept out at liberty in the lean-to. Forty patients were out of doors in the annex. Influenza struck Liberty and most of the tuberculous patients in Liberty contracted influenza. In the sanatorium there were only nine cases, and seven of these occurred amongst the servants who were not under sanitary régime. The other two patients were very ill patients in the Infirmary. Among the forty patients in the lean-to not a case occurred.

Dr. Keyes said that from an experience in his own family he believed that acute coryza could occur from fresh cold air admitted through the window. To prevent the cold air getting down over the neck and shoulders he told of a trick he had of taking two pillows, arranging them in a V-form, and then having the covers tucked around the neck; this would keep the possible draughts from chilling one. Patients did better in cold than in warm air. The beneficial effects he believed were due to the stimulation of the nervous system which resulted in very marked and rapid changes in the blood distribution; also coincidently there was a vasomotor stimulation.

Dr. Henry G. Piffard presented photographs taken in Germany, and also some taken last summer in New Jersey, where patients spent several hours each day perfectly nude and in the open with beneficial results.

Dr. Henry W. Frauenthal said that patients in the higher altitudes developed their chest measurement and with it there was an increased ability to take up oxygen. With regard to the breathing exercises, he had found that by their use patients with lateral curvature improved, and now a number of his nurses had given up nursing and taken up teaching breathing exercises.

Dr. Henry P. Loomis said that there was one thing that Dr. Knopf had not spoken of, the possibility of doing away with the fad which was so apparent in the medical profession of sleeping out of doors; he meant out of doors in New York City. In suitable climates it would be different. One could not incorporate in the cities the methods employed in the country; if tried it would be dangerous. This device of Dr. Knopf's would enable the patient to sleep in the room and do away with the idea of sleeping out of doors. At Bellevue this had been tried by the staff, patients, and nurses, and Dr. Loomis had made visits at night and had found that the nurses, when night came on, had their tents perfectly tight. They could not stand the cold. Dr. Loomis hoped that the time would come when the pendulum would swing the other way.

Dr. George Mannheimer said that it made a difference whether the patient had fever or not, and that the patients should have their temperature taken every three hours. Those patients that awakened in the morning with general malaise, etc., had nightly fever. There was a self-retaining thermometer for use in the rectum which sh[ow]s the nightly temperatures in these cases. He also called attention to the possible use of old trolley cars or horse cars, which would be excellent, and could be had almost for the asking from street car companies. He did not think that massage of the intercostal spaces was of much value. The device of Dr. Knopf's was the best thing yet accomplished.

Dr. Warren Coleman recalled the observations made by Darwin about the skin temperature. Observations were made in Patagonia, where the individuals wore no clothing or covering of the skin, and all were diminished in stature. The conclusion was reached that because of the amount of energy required to keep alive and keep warm, they could not grow.

Dr. Knopf said that they could not treat patients without clothes. Patients must be kept warm, especially the lower extremities. They might breathe cold air, but the body should be warm, and the feet particularly. The open-air treatment of the fever was the best. He emphasized the fact, and strongly, that massage had developed the thoracic muscles and helped in the chest expansion and in the general improvement of the cases.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.*

Idaho State Board of Medical Examiners.

October 2, 1900.

SURGERY.

1. Spondylitis deformans: (a) How is it characterized? (b) Symptoms and pathology?
2. Bilateral dislocation of lower jaw: Give symptoms, causes, and treatment. Is the capsular ligament usually ruptured?
3. Fracture through surgical neck, and head of humerus. Give diagnosis, treatment, exciting, and predisposing causes.
4. (a) From what source of blood supply is extradural hemorrhage due? Subdural? (b) What are the symptoms of general brain compression from hemorrhage? Give special symptoms.
5. Castration: (a) What are the indications for the removal of the testicles? (b) Describe the method of castration in aseptic and septic cases.
6. Strangulated Hernia: (a) What three conditions constitute a strangulated hernia? (b) Where is the seat of most marked pathologic changes? and why? (c) Give the local and general symptoms.
7. Describe the operation you would employ for ectropion.
8. Tracheotomy: (a) State methods employed in this operation. What is the after-treatment? (b) Which is the more dangerous and difficult, tracheotomy or laryngotomy, and why?
9. Suppurative otitis media: (a) In a mixed infection what bacteria are usually present? (b) What is the treatment indicated?
10. Cholecystotomy: (a) Give technique, position of patient, line of selection for incision; (b) how are stones from the duct removed? (c) What are the complications to be ascertained and removed? (d) What is the definition of "Ideal" cholecystotomy?

OBSTETRICS.

1. Give differential diagnoses of pregnancy.
2. On what signs is multiple pregnancy diagnosed?
3. Give treatment of pernicious vomiting of pregnancy.
4. Give five things to be observed by a pregnant woman.
5. How do you treat threatened abortion?
6. How secure asepsis in confinements as to external maternal parts? How maintain asepsis during labor? after labor? Why is a routine postpartum douche a bad practice? Mention the indications for a postpartum douche.

***It is proposed in this department to publish from time to time the examination papers of the various State Boards, in order that a candidate may become familiar with the character of the examination and so in some measure free himself in advance from the nervousness and dread which the unknown inspires. In furtherance of the same object answers to some of the questions will be published in order to show the candidate what the examiners expect of him. Not all the questions of all the papers will be so treated, for the answers to many, especially in the anatomical papers, are obvious or can be found in the index of any text-book on the subject; the answers to other questions, especially in the surgical papers, must sometimes be omitted because of the space they would demand. The candidate for a medical license will not find in these answers a short and easy road to success in the examination, for he is not likely to meet the same questions in the papers placed before him by the examiners. The object of publishing the questions and answers is only, as noted above, to acquaint the candidate with the general character of these examinations and to inspire him with confidence in the result of his trial.**

7. Describe treatment for puerperal eclampsia.
8. Give treatment for placenta previa.
9. Define dystocia, hydrocephalus, funis phlebitis, caput succedaneum, ectopic gestation, hyperemesis, polyhydramnios, sapremia, gastrohysterotomy.
10. Forceps. (a) Indications for use; (b) conditions necessary for use; (c) describe preparation of patient; (d) use of anesthetic; (e) describe application of forceps and extraction of fetus.

PRACTICE.

1. Describe three varieties of intestinal obstruction, and give the treatment in each case.
2. Give the etiology, symptoms, and treatment of exophthalmic goiter.
3. Give the etiology, symptoms, and treatment of hay fever.
4. Make a differential diagnosis between ulcer and carcinoma of the stomach.
5. Give the etiology and treatment of chloasma.
6. Give etiology, symptoms, and treatment of cystitis.
7. Describe the symptoms and treatment of laryngismus stridulus.
8. Give the symptoms and treatment of aortic regurgitation.
9. Give the symptoms and treatment of spotted fever (tick fever) of the Rocky Mountains.
10. Describe the dietetic treatment of diabetes mellitus.

GYNECOLOGY.

1. Name five primary causes of menorrhagia. Detail the treatment of the form due to subinvolution.
2. Name the varieties of dysmenorrhea. Give the treatment of mechanical dysmenorrhea.
3. Outline the treatment of gonorrheal endometritis.
4. Give the etiology and treatment of acute oöphoritis
5. Make a differential diagnosis between fecal impaction and an inflamed ovary.
6. Give etiology, symptoms, and treatment of pelvic cellulitis.
7. Name the uses of the uterine sound. Enumerate contraindications and dangers attending its use.
8. Give etiology, symptoms, and treatment of vulvovaginal cyst.
9. Name five genital fistulæ.
10. Describe symptoms and treatment of uterine carcinoma.

ANATOMY.

1. Bones. Name five foramina and give structures passing through them.
2. Muscles. Give origin and insertion of ten muscles.
3. Nerves. Give the distribution of the cranial nerves
4. Circulation. Give the blood supply of ten structures of the body.
5. Special. (a) Name three fissures of the brain. (b) What are the chordæ tendineæ? (c) Pineal body? (d) Describe the course of the vas deferens. (e) Locate corpus callosum.

HISTOLOGY.

1. Name the three primary blastogenic layers.
2. Name the structures derived from each.
3. Describe the minute structure of the kidney.
4. Give variety of glands with example of each.
5. Define leucocyte, osteoblast, stroma, dentine, periosteum, circumvallate papillæ, Peyer's patches, discus proligerus, zona pellucida, corpus luteum.

DIAGNOSIS.

1. What is meant by the term pathognomonic? Give four examples.
2. Give methods of handling sputum to determine, microscopically, if (a) tuberculosis exists; (b) pneumonia.
3. What would be the findings in an examination of the blood in pernicious anemia.
4. Differentiate the mitral lesions of the heart.
5. Differentiate the diseases of which dropsy is a symptom.
6. In what diseases are the following conditions found: (a) Clubbing of the fingers; (b) loss of patellar reflex; (c) Cheyne-Stokes respiration; (d) wrist-drop; (e) pain in the knee; (f) barrel-shaped chest; (g) Koplik's spots; (h) pain in testicle and glans penis; (i) Argyll-Robertson pupil; (j) strawberry tongue.
7. On what signs would you base a diagnosis of large left-sided pleural effusion without resorting to puncture?
8. Give the differential diagnosis between mastoiditis and acute inflammation of the middle ear.
9. Give diagnosis of acute cystitis in a female.
10. Differentiate intestinal colic from other lesions which might be mistaken for it.

HYGIENE.

1. Name some diseases, one attack of which ordinarily renders the subject immune from subsequent attacks.
2. Name and describe the principal chemical elements of food, giving the use of each class.
3. Indicate the proper diet in a case of diabetes mellitus, obesity, typhoid fever, tuberculosis.
4. What relation have certain insects to the cause and spread of disease?
5. Give some directions for the sanitary care of a small city.
6. What is the difference between an infectious and contagious disease? Name two of each class.
7. Give some directions for the disposal of sewage and other waste matter from farm houses, and the proper protection of drinking water.
8. What is the influence of climate and altitude on health?
9. Name some diseases which may be to a large extent prevented by proper hygienic care.
10. What is the effect of alcohol upon the nerve centers, upon the circulation?

PHYSIOLOGY.

1. Describe the change that takes place in the eye in changing from far to near vision.
2. Describe the patellar reflex and state upon what its integrity depends.
3. Locate the moter centers of the brain.
4. What is the lymphatic system and what is its office?
5. Of what is the pancreatic juice composed and what part does it play in digestion?
6. How is inspiration accomplished?
7. Describe minutely the formation, elimination and passage of urine.
8. Give time and order of eruption of both temporary and permanent teeth. Tabulate, if you wish.
9. Name the different portions of the alimentary canal in order from mouth to anus.
10. What are the functions of the skin?

CHEMISTRY AND TOXICOLOGY.

1. What are (a) carbohydrates? (b) proteids?
2. What is the difference between a physical and a chemical change? To which does the emulsification of fats belong?
3. Define organic and inorganic chemistry.
4. Starch ($C_6H_{10}O_5$), grape sugar ($C_6H_{12}O_6$), alcohol (C_2H_6O). Show the chemical reaction and equivalents in the change of starch to grape sugar and of grape sugar to alcohol.
5. Give in detail two reliable tests for sugar in the urine.
6. Give chemical test for pus in the urine.
7. Give antidote for each of the following: (a) corrosive sublimate, (b) arsenicum, (c) silver nitrate, (d) iodine, (e) phosphorus.
8. Give a reliable test for arsenic in contents of stomach.
9. In what class of poisons would you consider the stomach pump contraindicated?
10. What would you consider the maximum safe adult dose hypodermically of (a) atropine, (b) morphine, (c) strychnine, (d) apomorphia, (e) nitroglycerine?

PATHOLOGY.

1. Micrococcus lanceolatus: (a) Describe process of staining. (b) What is its significance, and in what inflammatory conditions is it often observed?
2. Describe the pathological changes that take place in the liver from the effects of chronic interstitial hepatitis.
3. What are the alterations or changes that take place in a muscle while undergoing progressive muscular atrophy?
4. Carcinoma of stomach: (a) Is it usually primary, or secondary to carcinoma elsewhere? (b) Where is it usually situated, and give most common type.
5. Tuberculous enteritis: (a) What particular parts are usually involved? (b) Describe the degenerative changes. (c) In which direction to the axis of the gut does ulceration extend most rapidly?
6. Write the characters of the Bacillus anthracis, ray fungus, Bacillus typhosus.
7. (a) What is a thrombus? (b) What is thrombosis? (c) Describe the three changes that may take place in a thrombus.
8. What is your method of making a postmortem examination?
9. What is understood by the terms pathological physiology, pathological morphology, special pathology?
10. The etiology of tumors (a) What influence has age *especially* as to the connective-tissue type? (b) Sex, if a significant factor, denotes a predisposition to what?

(c) Heredity, and local predisposing factors. (d) What proportion of malignant tumors in males compared to females?

MATERIA MEDICA AND THERAPEUTICS.

1. Under what conditions would you prescribe, (a) ergot; (b) bromide of potassium; (c) iodine; (d) hyoscyamus?
2. Treat a case of apoplexy.
3. Name five sedatives and give indications for the use of each.
4. Give complete treatment for a case of dysentery.
5. Name four methods of introducing medicine into the system and give relative dose by each method.
6. Give classification, properties, dose, physiological action, and therapeutic use of Fowler's solution.
7. Same of belladonna.
8. Give treatment for vomiting of cerebral origin; (b) acute gastritis.
9. What are the therapeutic uses of iron?
10. Give official terms, the part used, and the active principles of deadly nightshade, henbane, foxglove, monkshood, dogbutton.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

IDAHO STATE BOARD OF MEDICAL EXAMINERS.

October 2, 1906.

SURGERY.

1. "*Spondylitis deformans* is the name given to a disease which affects the vertebral column, and is the same, or of the same nature, as that termed 'chronic rheumatic arthritis' when affecting other parts. As a consequence of absorption of the articular cartilages and of the intervertebral discs, and the development of osteophytic prominences from the edges of the vertebral bodies, and ossification of the ligaments, especially the anterior common ligament, the spine becomes bent and rigid, and a very characteristic deformity is the result.

"Kyphosis is produced, and as the disease frequently affects the whole or major part of the column, there is one long antero-posterior curve, the patient has a constant stoop, his stature is diminished, there is complete rigidity of his spine, and his movements are awkward and constrained. In lesser grades of the disease the cervicodorsal or the lumbodorsal regions may be alone affected, and the signs are less pronounced. With advance of the disease the spinal muscles waste, and the curvature becomes more prominent, the head is poked forward, the shoulders appear unusually round, and the patient is obliged to support himself with a stick." (Treves' *Manual of Surgery.*)

2. As a rule the capsular ligament is not ruptured.

4. (a) *Extra-dural hemorrhage* is generally from the middle meningeal artery or one of its branches, or the superior longitudinal, lateral, or occipital sinus; occasionally it is from the internal carotid artery.

Sub-durol hemorrhage is generally from the middle meningeal artery or one of its branches, small veins, capillaries, or one of the sinuses.

(b) "If after an injury to the head a patient be found absolutely unconscious, it being imposible to arouse him or to make him answer questions, with fixed dilated pupils, slow, deep, stertorous breathing with flapping of the cheeks during expiration, slow, full, labored pulse, retention of urine and involuntary passage of feces, and paralysis, general or of one side of the body only, these symptoms are caused by *compression of the brain.* . . . If the symptoms have come on gradually and at short intervals after the accident (an interval during which the patient may have been quite conscious, or showing more or less evidence of brain concussion), or if while under observation it be noted that the signs of compression are increasing, the coma becoming more deep and the paralysis more extensive, it clearly indicates *intracranial hemorrhage.* When there has been an interval of consciousness between the injury and the oncoming of the symptoms of concussion, showing that the brain has not been seriously shaken or contused; and, further, if the paralysis is or was at first unilateral, we may diagnose that the hemorrhage has taken place betweeen the bone and the dura mater from rupture of a meningeal artery or wound of a sinus; while under the other conditions we have evidence of more severe direct injury to the brain, making it probable that the blood clot is situated on or in the brain." (Gould's *Surgical Diagnosis.*)

5. The indications for castration are:—malposition of the testicle, tuberculous disease, old standing hematocele, cancer, or other tumors, and chronic enlargement of the prostate gland.

6. (a) The three conditions which constitute a strangulated hernia are: 1. A constriction so tight that reduction is impossible; 2. Interference with the circulation, which may possibly lead to gangrene; 3 If intestine is present, gas and feces are unable to pass.

(b) The most marked pathological changes are found inside the sac—on account of pressure and the interference with the circulation.

8. (b) Tracheotomy is the more dangerous and difficult operation as a rule, it takes longer, and requires more assistance. But laryngotomy cannot be performed on a patient under thirteen years of age owing to the smallness of the crico-thyroid membrane; it is also more difficult to insert a laryngotomy tube than a tracheotomy tube.

9. (a) The *Staphylococcus pyogenes aureus* and *albus*, *Streptococcus pyogenes;* sometimes the tubercle bacillus, bacillus of influenza, Friedlander's bacillus, Fraenkel's pneumococcus.

10. (d) *Ideal cholecystotomy* is an operation which includes opening the gall-bladder, removing the calculi, and suturing the incision.

OBSTETRICS.

2. Multiple pregnancy may be diagnosed by the following signs: (1) The abdomen may be irregular in shape and may show a sulcus indicating the space between the two fetal sacs; (2) persistent and increased tension of the uterine walls; (3) two fetal heart sounds may be heard; (4) multiplicity of small parts; (5) two fetal heads or backs may be palpated; (6) diminished fetal mobility Sometimes it is difficult to diagnose the condition before the birth of one child.

4. (1) The diet should be easily digestible and nutritious; (2) the clothing should be warm, and free from constrictions; (3) gentle and moderate exercise should be indulged in, if possible in the open air; (4) the bowels and bladder should be kept properly regulated; (5) sexual intercourse should cease.

5. Absolute rest in bed, with head lowered, and in a darkened room; opium or chloral should be administered; the diet should be liquid; the bowels and bladder should be attended to; if the hemorrhage is excessive the pelvis may be elevated; but ergot and tampons are contraindicated.

9. *Dystocia* means difficult or obstructed labor.

Hydrocephalus is a condition in which there is marked enlargement of the head ducts to serous effusion within the cranium.

Funis is the umbilical cord.

Phlebitis is an inflammation of the veins, generally septic.

Caput succedaneum is an edematous swelling developed on the presenting part of the fetus during birth.

Ectopic gestation is a pregnancy in which the fetus is elsewhere than in the uterine cavity.

Hyperemesis is an extreme and exaggerated condition of nausea and vomiting.

Polyhydramnios is an increased amount of liquor amnii.

Sapremia is a septic condition due to the entrance into the blood of the products of putrefactive bacteria.

Gastrohysterotomy is another name for cesarean section, or the delivery of a fetus through an incision in the walls of the abdomen and the uterus.

10. (a) *Indications for the use of forceps* are: "1. *Forces at fault:* Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. 2. *Passages at fault:* Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. 3. *Passenger at fault:* A. Dystocia due to (*a*) occipito-posterior, (*b*) mento-anterior face, (*c*) breech arrested in cavity. B. Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). 4. *Accidental complications:* Hemorrhage; prolapsus funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both." (From Jewett's *Practice of Obstetrics.*

(b) *Conditions necessary for the use of forceps* are: (1) The rectum and bladder must be empty; (2) the os uteri must be fully dilated; (3) the membranes must be ruptured; (4) the pelvis must be of sufficient size.

PRACTICE.

4. *Ulcer of stomach* is generally caused by injury or bacteria, is most apt to occur between the ages of twenty and forty-five; after eating there is pain localized in the stomach, vomiting occurs soon after eating, hematemesis is common, there is localized tenderness over the stomach, and examination of the gastric contents shows an excess of free HCl.

Cancer of stomach does not usually occur before forty years of age, is more common in males, the pain is local-

ized and constant, vomiting is copious and occurs sometime after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; there is progressive emaciation; severe anemia and cachexia are also present.

5. The *etiology* of chloasma is unknown. The pigmentation may be due to the chemical action of the rays of the sun upon the constituents of the blood; another theory is that it is due to extravasated blood undergoing changes; there is also a relation between chloasma uterinum and the uterus, as is shown by the fact that the chloasma usually disappears either after parturition, the cure of the uterine disorder, or the attainment of the menopause.

The *treatment* is unsatisfactory. If possible remove the cause. Glacial acetic acid, or bichloride of mercury in one or two per cent. solution may remove the spots, but they are apt to return. Pure carbolic acid applied with a swab has been recommended. The part may be washed with alcohol, and a mercurial plaster applied. (From Jackson's *Diseases of the Skin.*)

7. The *symptoms* of laryngismus stridulus are: The child holds his breath, the face becomes congested and cyanotic, the glottis is closed, inspiration is suddenly arrested, and ends in a shrill crowing sound; there may be spasms or convulsions; the attack is sudden, and may be repeated; there is no fever, coryza, nor cough.

Treatment: Cold water should be dashed on the face and chest; ammonia may be applied to the nostrils; an emetic may be administered, bromides or chloral should be given; attention must be paid to the diet and general hygiene of the child.

8. The *symptoms* of aortic regurgitation are: Palpitation on slight exertion; dyspnea, headache; dizziness with faintness, most marked on rising quickly; precordial pain; the apex-beat is displaced downward and to the left; the heart is hypertrophied; there is a diastolic murmur over the aortic area; pulsation is observed in the carotids; the pulse has the water-hammer characteristic.

9. *Symptoms* of tick fever of the Rocky Mountains: "There is a period of incubation of about a week. The patient complains of nausea, general malaise, and a chill; this latter is followed by a fever which reaches its highest point about the tenth day, is characterized by evening rise and morning remissions, lasts about two weeks, and may be followed by subnormal temperature. In severe cases the morning remissions may be absent, and the fever remains high (from 104° to 106° F.). There are general pain and soreness, particularly during the first week, coated tongue with red edges, sordes, constipation, nausea which persists in severe cases, scanty urine with albumin and casts, and epistaxis. The liver and spleen may be enlarged. The pulse is high, and out of all proportion to the fever; the respiration is also increased. An examination of the blood shows (1) the parasite, (2) a decrease in the percentage of hemoglobin, (3) a decrease in the number of the red blood cells, (4) a slight leucocytosis, chiefly of the large mononuclears. Bronchitis is present during the second week; and in severe cases lobar pneumonia supervenes, with a grave prognosis.

"*The eruption* appears usually on the third day, first on the wrists and ankles, then on arms, legs, forehead, back, chest, and, last and least, on the abdomen. It is never very abundant on the abdomen, but the other portions of the body, in some cases, are literally covered by the eruption.

"At first the spots are of a bright red color, macular at all times, from a pin point to a split pea in size. At first they disappear readily on pressure and return quickly; but if the case is a severe one they soon become darker and in some cases are almost purple. From about the sixth to the tenth day of the disease they fail to disappear on pressure and are distinctly petechial in character. In favorable cases, about the fourteenth day, they begin to lose their petechial character and disappear slowly on pressure. In some cases the eruption consists of small, brownish spots, giving a turkey-egg appearance.

"As the fever declines the eruption begins to fade; but a slight return of fever or a free perspiration will cause it to show distinctly."

"Treatment is unsatisfactory. Quinine in large doses has been tried with some success, but must be given persistently. The treatment is otherwise symptomatic and includes cardiac stimulants, Dovers' powder for the pains and soreness, tepid baths for the fever, and plenty of water to flush out the kidneys. The site of the tick-bite should be cauterized with 95 per cent. carbolic acid." (From *Reference Handbook of the Medical Sciences.*)

10. *The dietetic treatment of diabetes mellitus*: "All sugars should be rejected The same is true of starches. Bread is the most difficult of foods to deal with. The purer gluten flours may be used, but they are difficult to obtain. Aleuronat or almond flour may be substituted. Most meats and fish are permissible, and the greens and relishes may be taken freely. Farinaceous foods and potatoes or other vegetables rich in carbohydrates must be avoided. Eggs, butter, cheese, and milk are allowed. Saccharin may be used in place of sugar for sweetening.

"*The chief articles prohibited* are liver, wheat bread, corn flour, rice, sago, arrow-root, barley, oatmeal, tapioca, macaroni, puddings, beet root, sweet vegetables, potatoes, carrots, peas, beans, parsnips, turnips, all sweet fruits, apples, pears, plums, grapes, oranges, apricots, peaches, gooseberries, dates, watermelon, sweet wines, cordials, porter, lager beer, cider, mustard, honey, sweets, ices, jams, treacle." (Gould and Pyle's *Cyclopedia of Medicine and Surgery.*)

GYNECOLOGY.

1. Five primary causes of menorrhagia: Tumors, uterine displacements, endometritis, tubal and ovarian diseases, and subinvolution.

2. The varieties of dysmenorrhea are: Congestive, neuralgic, obstructive, ovarian, and membranous.

3. Dilatation of the cervix; curettage; the uterine cavity is then to be flushed out with some antiseptic solution, and then swabbed with iodine or carbolic acid to prevent reinfection; the patient must remain in bed for from seven to ten days after the operation.

5. In fecal impaction there will be a history of constipation; a vaginal examination will also demonstrate the presence of this condition; active purgation will clear up any doubt on the subject.

7. The *uses* of the uterine sound are: (1) To demonstrate the mobility of the uterus; (2) to show the size of the uterus; (3) the presence of intrauterine growths; (4) deviations in the cervical canal; and (5) as an aid in the diagnosis of uterine displacements.

Contraindications: (1) The least suspicion of even the possibility of pregnancy; (2) menstruation; (3) acute endometritis; (4) malignant disease of the uterus or vagina; (5) acute pelvic inflammation.

Dangers: (1) Abortion; (2) sepsis; (3) peritonitis; (4) hemorrhage; (5) perforation of the uterus.

9. (1) Vesicovaginal; (2) rectovaginal; (3) vesicouterine; (4) urethrovaginal; (5) vesicouterovaginal.

10. *Symptoms* of uterine carcinoma: Irregular hemorrhages, pain, and offensive discharge; advancing years; microscopic examination of intrauterine scrapings will clinch the diagnosis.

Treatment: Complete abdominal hysterectomy, unless contraindicated by the debilitated condition of the patient.

ANATOMY.

1. (1) *Foramen magnum*: The medulla and its membranes, vertebral arteries, spinal accessory nerves, anterior and posterior spinal arteries, and the occipitoaxial ligament.

(2) *Jugular foramen*: Inferior petrosal sinus, lateral sinus, meningeal branches of occipital and ascending pharyngeal arteries; glossopharyngeal, pneumogastric, and spinal accessory nerves.

(3) *Inferior dental foramen*: Inferior dental vessels and nerve.

(4) *Foramen rotundum*: Superior maxillary division of fifth cranial nerve.

(5) *Foramen ovale*: Inferior maxillary division of fifth cranial nerve.

5. (a) Fissure of Rolando; fissure of Sylvius; parietooccipital fissure.

(b) The *chordæ tendineæ* are tendinous cords attached above to the segments of the tricuspid and mitral valves, and below to the musculi papillares of the ventricles of the heart.

(c) The *pineal body* is a small conical body situated in the brain, between the anterior corpora quadrigemina and immediately behind the posterior commissure.

(d) The *vas deferens* begins at the lower part of the globus minor of the testis and proceeds along the posterior border of the testis and inner side of the epididymis, along the back part of the spermatic cord, through the external abdominal ring, inguinal canal, and the internal abdominal ring. It then curves round the outer side of the epigastric artery, crosses the external iliac vessels, and goes to the side and base of the bladder, passing to the inner side of the ureter. It lies between the base of the bladder and the rectum.

(e) *Corpus callosum* is situated at the anterior part of the base of the great longitudinal fissure of the cerebrum, and connects the two hemispheres together.

DIAGNOSIS.

1. *Pathognomonic* is a term applied to signs and symptoms which are specially characteristic of a disease, and the presence of which makes its diagnosis absolute.

Examples: (1) Escape of cerebrospinal fluid in fractures of the base of the skull; (2) Koplik's spots in measles; (3) hearing the fetal heart sound in pregnancy; (4) water-hammer or Corrigan's pulse in aortic regurgitation.

3. In *pernicious anemia* the blood would show: (1) A diminution in the number of red corpuscles; (2) a relative increase in the amount of hemoglobin; (3) poikilocytosis; (4) the presence of nucleated red cells; (5) variation in the size of the red cells; (6) the leucocytes *may be* diminished.

6. (a) *Clubbing of the fingers* is found in pulmonary phthisis, emphysema, pulmonary osteoarthropathy, valvular cardiac disease (sometimes).

(b) *Loss of patellar reflex*, in locomotor ataxia, anterior poliomyelitis, peripheral neuritis.

(c) *Cheyne-Stokes respiration*, in apoplexy, uremia, cerebral tumors, tuberculous meningitis.

(d) *Wrist drop*, in lead, or arsenic, or alcohol poisoning, multiple neuritis, pressure from crutches, etc.

(e) *Pain in the knee*, in hip joint disease, obturator hernia.

(f) *Barrel-shaped chest*, in emphysema, chronic bronchitis, bronchial asthma.

(g) *Koplik's spots*, in measles.

(h) *Pain in testicle and glans penis*, in renal calculus.

(i) *Argyll-Robertson pupil*, in locomotor ataxia, cerebral syphilis, progressive paralysis of the insane.

(j) *Strawberry tongue*, in scarlet fever.

HYGIENE.

1. As a rule one attack of the following diseases conveys immunity: Whooping cough, rotheln, scarlet fever, typhoid, typhus, smallpox, varioloid, chickenpox, yellow fever, mumps.

4. Malaria and yellow fever are transmitted by the mosquito; bubonic plague may be conveyed by fleas, flies, and bugs; typhoid may be conveyed by flies; tick fever (or spotted fever) is carried by the tick; sleeping sickness is generally transmitted by a biting fly.

9. Typhoid, tuberculosis, smallpox, cholera, yellow fever, ophthalmia neonatorum.

PHYSIOLOGY.

1. In accommodating the eye for near vision the ciliary muscle contracts, the suspensory ligament relaxes, and the lens bulges and becomes more convex.

2. The patellar reflex consists of a contraction of the extensor muscles of the leg and a movement of the foot forward when the ligamentum patella is struck; the quadriceps extensor must first be slightly stretched by putting one knee over the other. Its integrity depends upon a healthy condition of the entire reflex arc, consisting of tendon, afferent or sensory nerve, posterior roots, and anterior horn of the spinal cord, the efferent or motor nerve, and the muscle itself.

10. The functions of the skin are: Protection, sense of touch, excretion, regulation of body temperature, absorption, and respiration.

CHEMISTRY AND TOXICOLOGY.

1. (a) *Carbohydrates* were formerly defined as substances of unknown constitution, composed of carbon, hydrogen, and oxygen; the last two being in the proportion to form water

(b) *Protcids* are substances of very complex composition and of unknown constitution, and are necessary to the phenomena of life. The molecule contains carbon, hydrogen, oxygen, nitrogen, sulphur, and sometimes phosphorus, iron, or some other element.

2. In a *physical* change the composition of the substance is not altered. In a *chemical* change the composition of the substance is altered. The emulsification of fats is a physical change.

3. *Organic* chemistry is the chemistry of substances which contain carbon. *Inorganic* chemistry is the chemistry of substances which do not contain carbon.

4. (1) $C_6H_{10}O_5+H_2O=C_6H_{12}O_6$.
(2) $C_6H_{12}O_6=2CO_2+2C_2H_6O$.

5. The urine should first be tested for albumin. If this be present, it should be removed by heating the urine to near the boiling point, and filtering from the coagulum.

(1.) *Fehling's test:* Place in a test-tube a few c.c. of the liquid prepared as stated below, and boil; no reddish tinge should be observable, even after five minutes' repose. Add the liquid under examination gradually, and boil after each addition. In the presence of sugar a yellow or red precipitate is formed. In the presence of *traces* of glucose, only a small amount of precipitate is produced, which adheres to the glass, and is best seen when the blue liquid is poured out.

[The reagent must be kept in two solutions, which are to be mixed immediately before use. Solution I consists of 34.653 gms. of crystallized $CuSO_4$, dissolved in water to 500 c.c.; and Solution II of 130 gms. of Rochelle salt dissolved to 500 c.c. in NaHO solution of sp. gr. 1.12. When required for use equal volumes of the two solutions are mixed, and the mixture diluted with four volumes of water.]

(2.) *Boettger's test:* Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test-tubes. To one test-tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color. (From Witthaus' *Essentials of Chemistry.*)

6. Chemical test for *pus* in the urine: Acidify the urine with acetic acid, then filter it, and treat the filter with a few drops of freshly prepared tincture of guaiacum; a deep blue color denotes the presence of pus.

7. The antidote for (a) corrosive sublimate is white of egg, in not too great a quantity; for (b) arsenicum is freshly prepared ferric hydroxide; for (3) silver nitrate is salt and water and white of egg; for (4) iodine is starch solution and emetics; for (5) phosphorus is old French oil of turpentine.

8. *Test for arsenic*: Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

9. The stomach pump is contraindicated when *corrosives* have been taken.

PATHOLOGY.

1. The *Micrococcus lanceolatus* is better known as the *Diplococcus lanceolatus*, or the pneumococcus of Fraenkel and Weichelbaum.

(a) *Process of staining*: Spread a cover glass with a smear containing the bacteria, dry it, then fix it in a flame. It can then be stained for from five to ten minutes in Ehrlich's solution; it is then to be washed in water and afterwards immersed in Gram's solution for two or three minutes. It is then washed in 95 per cent. alcohol. While in the Gram's solution the specimen is very dark brown, but it becomes violet or blue again on application of the alcohol.

(b) It is found in lobar pneumonia; it has also been found occasionally in cerebrospinal meningitis, pleurisy, peritonitis, pericarditis, acute abscesses, otitis media, and other conditions.

3. The alterations or changes that take place in a muscle while undergoing progressive muscular atrophy are as follows: "The muscles become pale and rather flabby. Microscopically the fibers show various forms of degeneration. Fragmentation in a longitudinal or in a transverse direction, coagulation necrosis, and occasionally fatty degeneration of the fibers may be seen. Sometimes the fibers seem to grow smaller by a simple atrophic process. Coincidently reactive proliferation is seen in the connective tissue between fibers, and doubtless this to some extent causes further muscular degeneration. The muscle cells themselves may proliferate quite extensively." (Stengel's *Pathology.*)

4. *Carcinoma of the stomach* (a) is usually primary. (b) It is usually situated at or near the pylorus, and the most common type is the cylindrical celled adenocarcinoma.

5. According to Osler, "The affection begins in the solitary and agminated glands or on the surface of or within the mucosa. The caseation and necrosis lead to ulceration, which may be very extensive and involve the greater portion of the mucosa of the large and small bowels. In the ileum the Peyer's patches are chiefly involved, and the ulcers may be ovoid, but in the jejunum and colon they are usually round or transverse to the long axis."

7. (a) A *thrombus* is a plug or clot in a blood-vessel remaining at the site of its formation.

(b) *Thrombosis* is the coagulation of the blood within the vessels or heart during life. The changes that may

take place in a thrombus are: Organization, calcification, softening, infection, and putrefaction.

9. *Pathological physiology* is that branch of science which deals with the study of disturbances of function.

Pathological morphology is that branch of science which deals with the study of the structural changes in disease.

Special pathology deals with pathological processes in individual or special diseases, or organs or parts.

10. *Tumors*: (a) Connective tissue tumors are most common in early life when the connective tissues grow most vigorously.

(b) Sex has little bearing on the etiology of tumors, except in the case of cancer, which is more common in females.

(c) *Heredity* is considered by some to be an etiological factor; but the more probable view is that the *predisposition* to tumors and the *weakened resistance of the tissues* are hereditary.

Local predisposing factors are slight. Places where various different embryological structures meet are the most liable to malignant tumors.

(d) Malignant tumors are more common in females than in males.

MATERIA MEDICA AND THERAPEUTICS.

5. By mouth, by hypodermic injection, by rectum, and by inhalation. If the dose by mouth is one grain, the hypodermic dose would be about one-half a grain, and the dose by rectum about one and a half grains.

10.—

	Official Name.	Part Used	Active Principle
Deadly nightshade.	Atropa Belladonna.	Leaves and root	Atropine and Belladonnine
Henbane	Hyoscyamus Niger	Leaves and flowering tops	Hyoscyamine and Hyoscine
Foxglove	Digitalis Purpurea	Leaves	Digitalin, Digitalein, Digitin, Digitonin and Digitoxin.
Monkshood	Aconitum Napellus	Root	Aconitine
Dogbutton	Strychnos vomica.	nux See is.	Strychnine and Brucine.

BULLETIN OF APPROACHING EXAMINATIONS.†

State.	Name and Address of Secretary.	Place and Date of Next Examination.	
Alabama*	W. H. Sanders, Montgomery.	Mootgomery	July 1–6
Arizona*	Ancil Martin, Phoenix	Phoenix	July 1
Arkansas*	F. T. Murphy, Brinkley	Little Rock	July 0
California	Chas. L. Tisdale, 1879 Sutter Street, San Francisco	San Francisco	August 6
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 9
Delaware	J. H. Wilson, Dover	Dover	Dec. 10
Dis. of Col'bia	W.C.Woodward, Washington.	Washington	July 11
Florida*	J. D Fernandez, Jacksonville.	Jacksonville	Nov. 20
Georgia	E. R. Anthony, Griffin	Atlanta	October 8
Idaho	J. L. Conant, Jr., Genesee	Boise	October 1
Illinois	J. A. Egan, Springfield	Chicago	
Indiana	W. T. Gott, 120 State House, Indianapolis	Indianapolis	October 22
Iowa	LouisA Thomas, Des Moines.	Des Moines	Sept. —
Kansas	T. E. Raines, Concordia	Topeka	October 8
Kentucky*	J. N. McCormack, Bowling Green	Louisville	October 22
Louisiana	F.A. La Rue, 211 Camp Street, New Orleans	New Orleans	October 15
Maine	Wm. J. Maybury, Saco	Augusta	July 9
Maryland	J. McP Scott, Hagerstown	Baltimore	
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 9
Michigan	B. D. Harrison, 295 Whitney Building, Detroit	Lansing	October 8
Minnesota	W. S. Fullerton, St. Paul.	St. Paul	October 1
Mississippi	J. F. Hunter, Jackson	Jackson	October 8
Missouri	J.A.B.Adcock, Warrensb'g	Mexico	July 9
Montana*	Wm. C. Riddell, Helena	Helena	October 1
Nebraska	Geo. H. Brash, Beatrice	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	August 5
N. Hamps're*	Henry C. Morrison, State Library, Concord	Concord	July 9
New Jersey	J. W. Bennett, Long Branch.	Trenton	October 22
New Mexico	B. D. Black, Las Vegas	Santa Fe	December 2
New York	C.F.Wheelock,Unv of State of New York, Albany	New York, Albany, Syracuse, Buffalo.	June 25
N. Carolina*	G. T. Sikes, Grissom		
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks	July 2
Ohio	Geo. H Matson, Columbus	Columbus	Dec 10
Oklahoma*	J. W. Baker, Enid	Guthrie	
Oregon	B E. Miller, Portland	Portland	
Pennsylvania	N. C. Schaeffer, Horrisburg.	Philadelphia, Pittsburg.	June 25
Rhode Island	G T. Swarts, Providence	Providence	July 4
S. Carolina	W. M. Lester, Columbia	Columbia	June 9 26
S. Dakota	H. E. McNutt, Aberdeen	Sioux Falls	July 10
Tennessee*	T. J. Happel, Trenton	Memphis, Nashville, Knoxville	May, 1908
Texas	T. T. Jackson, San Antonio.	Austin	June 25
Utah*	R. W. Fisher, Salt Lake City	Salt Lake City.	July 7
Vermont	W. Scott Nay. Underhill	Burlington	July 9
Virginia	R. S. Martin, Stuart	Lynchburg	
Washington*	C. W. Sharples, Seattle	Seattle	July 2
W Virginia*	H. A. Barbee, Point Pleasant.	Charleston	July 9
Wisconsin	J. V. Steveos, Jefferson	Madison	July 9
Wyoming	S. B. Miller, Laramie	Cheyenne	

* No reciprocity recognized by these States.

† Applicants should in every case write to the secretary for latest details regarding the examination in any particular State

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious disease reported to the Sanitary Bureau, Health Department, New York City, for the week ending June 15, 1907:

	Week of June 8		Week of June 15	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	393	175	318	166
Diphtheria	306	37	393	48
Measles	681	21	777	26
Scarlet Fever	543	24	541	28
Smallpox	5	1	2	1
Varicella	105	—	100	—
Typhoid Fever	55	7	39	9
Whooping Cough	51	12	22	12
Cerebrospinal Meningitis	23	16	20	10
Malarial Fever				
Totals	2102	293	2212	300

Empyema.—By connecting a Politzer bag with the drainage tube in cases of empyema the discharge of pus is greatly facilitated. The bag is compressed and its tip inserted into the end of the drainage tube, a short section of rubber tubing intervening if necessary. The bag in expanding exerts constant aspiration in the abscess cavity, and the discharge is all collected in the bag, which is emptied at regular intervals.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 14, 1907:

SMALLPOX—UNITED STATES

		Cases.	Deaths.
Illinois, Chicago	June 1–8	7	..
Indiana, Evansville	June 6	1	..
Kansas, Kansas City	June 1–8	6	..
Kentucky, Covington	June 1–8	2	..
Henderson	May 1–31	1	..
Louisville	May 31–June 6	5	..
Iowa, Ida County	May 1–31	3	..
Michigan, Saginaw	May 25–June 1	4	..
New York, New York	June 1–8	5	1
North Carolina, 22 counties	April 1–30	213	..
Charlotte	June 1–8	1	..
Ohio, Cincinnati	May 31–June 7	1	..
Columbus	May 1–31	18	..
Texas, Galveston	May 24–June 1	4	1 From S. S. *Hannover*
Washington, Spokane	May 25–June 1	0	..

SMALLPOX—FOREIGN.

China, Hankau	April 20–27	3	.
Shanghai	April 20–27	1	14
Tientsin	April 20–27		Present
France, Paris	May 11–18	13	1
Germany, General	May 11–18	17	..
Mannheim	May 11–18	..	1
Great Britain, Southampton	May 18–25	1	.
India, Bombay	May 7–14	..	3
Italy, General	May 16–23	19	..
Torre Annunziata	May 10–20	2	..
Turin	May 12–19	4	.
Japan, Nagoya	May 15	.	Epidemic
Madeira, Funchal	May 12–26	25	3
Mexico, Aguas Calientes	May 25–June 1		20
Russia, Moscow	April 20–May 4	17	4
Odessa	May 11–18	4	1
Spain, Valencia	May 19–26	4	..
Turkey, Bassorah	May 4–11	5	..

YELLOW FEVER

Brazil, Manaos	May 4–11		1
Cuba, Habana	June 6	1 From Santa Clara Province	
San Nicholas	June 7	2	.. 1
Guatemala, Guatlan	May 20	..	Present
Zacapa	May 20	..	Present
West Indies, Trinidad, Port of Spain	May 11–18	2	1

CHOLERA

India, Bombay	May 11–14		1
Rangoon	April 27–May 4	.	9

PLAGUE

Africa, Cape Colony, King William's Town	April 22–May 4	3	2
Germany, Groden	June 3	1 on S.S. *Wartenfels* from Buenos Aires	
India, Bombay	May 7–14	.	188
Rangoon	April 27–May 4	.	58
Japan, Osaka	May 15	5	..
Yokahama	May 30	.	Present
Turkey, Dschidah	May 6–11	13	12
Island of Bahrein	May 22	.	Epidemic
West Indies, Trinidad	June 11	2	2

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Original Articles.

MASSAGE OF THE PROSTATE AND STRIPPING THE SEMINAL VESICLES.*

By FERD. C. VALENTINE, M.D.,

AND

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NEW YORK.

The usefulness of massage of the prostate and stripping the seminal vesicles is daily in evidence, when these organs are involved in acute, subacute, or chronic urethritis. Indeed, the urethra is not safe from autoreinfection while its adnexa harbor noxious bacteria. Massage of the prostate has a place also early in prostatic hypertrophy. This naturally embraces no claim for complete *restitutio ad integrum*, but experience shows many a case in which judicious massage, with other treatment, has saved the risks of a cutting operation.

Massage of the prostate and stripping the vesicles are not negligible in the first evidences of abscess of these organs. True, it is unsurgical to attempt to empty pus from the adnexa through the urethra, yet there are enough successful cases in every practitioner's experience to justify the procedure, when the patient's condition makes operation hazardous, or when he refuses to take the risks thereof. Naturally when rupture of an abscess into the tissues is imminent, none but operative intervention may be considered.

The value of prostatic massage and stripping the vesicles in aberrations of the sexual function is still *sub judice*. Yet the practice forms a useful adjuvant to other treatment in these cases.

The present paper does not embrace recital of the indications for massage and stripping, further than the above mere suggestions. The exclusive object in view at present is a study of methods used in the procedures indicated by the title.

Standard writers assume that every practitioner is familiar with the technique under consideration. The consequence has been the evolution of several methods, most of which are unnecessarily difficult and painful, to a degree dangerous, and more or less ineffective. These results have led many practitioners to discard altogether digital treatment of these adnexa to their patients' disadvantage.

The various methods alluded to will be sketched to illustrate the value of the procedure which personal practice has shown to be most recommendable.

In *the knee-elbow position* the patient rests upon the operating table, his chest placed upon his crossed arms, his pelvis supported by his thighs, the knees resting upon the lower margin of the table. This position promptly causes hyperemia of the facial and cerebral vessels and painful throbbing thereof, difficulty of breathing, due to compression of the chest contents from pressure of the abdominal viscera on the diaphragm, and gravitation of the prostate and seminal vesicles following the abdominal and other pelvic contents, thus so increasing their distance from the anus as often to place them beyond the reach of the finger in the rectum. This latter fact gives the patient unnecessary pain from the operator's efforts to push the perineum upward, in endeavoring to express the contents of the prostate and vesicles.

It is self-evident that the knee-elbow position increases the surgeon's work and diminishes its efficacy. The augmentation of effort would not be objectionable, were its effectiveness increased or the patient's comfort enhanced thereby. The prostate and vesicles gravitate away from the finger's tip and the abdominal walls, becoming pendulous, offer a distinct impediment to that counter-pressure which is essential in fixation of the organs.

It is small wonder, then, that patients who have been examined, or for whom treatment has been attempted in this position, are apprehensive when brought for consultation involving examination of the major adnexa. The inefficiency of work in the knee-elbow position is well demonstrated when the patient's physician reports his inability to express any of the contents of the organs mentioned, and when, the patient being conveniently placed, a copious extrusion is easily and relatively painlessly obtained.

In *the Sims position* the patient is placed on his right side, with his buttocks at the edge of the table. It certainly is not nearly so uncomfortable for the patient as the position before described. In it, however, the surgeon's work is rendered difficult, as he is obliged to use his left fist to make counterpressure upon the prevesical region, to force the prostate and seminal vesicles towards the finger in the rectum seeking them. Moreover, the thighs being drawn up upon the abdomen, serve as a hindrance to free action of the left arm that partly encircles the patient's body.

The *erect flexed position* is the one most in use. The patient stands before the operator, bends over the back of a chair, or over a table, or rests his hands upon his knees. To approximate the prostate and vesicles to the finger pushing up in the rectum, the operator must pull the pelvic contents towards it with his left hand. Some works recommend that the operator, to give greater force to his right index finger, rest his right foot upon the rung of a chair and let the knee give the elbow increased propulsive power.

Aside from the unnecessary difficulty that this position puts upon the operator, it is a strain upon the patient which does anything but contribute to the muscular relaxation which must be invited to aid in the work. Moreover, there is always a danger

*Read before the Manhattan Clinical Society, March 15, 1907.

that the patient will faint and pitch forward or sidewise upon the floor. This occurred in the experience of a colleague who was endeavoring to demonstrate to us the superiority of this position over the one we advocate. The patient lost consciousness and in falling thrust his face through the window of an instrument cabinet before he reached the floor. Numerous large scars on the patient's head and face loudly protest against this method of examining and treating the prostate and seminal vesicles.

The *gynecological position* is in all regards the normal one for the class of work now under consideration. Its steps may be concisely laid down as follows:

1. *Preparation of the operator.* The physician should be prepared for this class of work, as for any other genitourinary procedure. The principal points to be kept in view are that a patient without urethral discharge or other manifestations of disease may harbor gonococci in the prostate or seminal vesicles or both. Moreover, in some cases the prostate or the posterior urethra and the detrusors have acquired an extraordinary projectile power. In that event the merest touch of the prostatic region through the rectum may send forth to quite a distance drops or even small streams of prostatic juice. If the operator's garments are not protected they may become soiled with this sort of "ejaculation." It may, and probably will, not be convenient to change garments at once, while the soiled ones are sent to be cleaned. The possibility of infection from such a source is not remote, when keeping in mind that most of us unconsciously pass our hands over our garments and with equal recklessness wipe our eyes with our fingers. The manifest indication herefrom is that no genitourinary work should be performed unless when properly dressed in a gown. The choice of the gown is purely one of personal taste. Even at the risk of exposure to facetiæ we confess preference for what is known in the clothing trade as "market coats." The white material is sufficiently dense to protect the ordinary garments in the frequent hand washings extensive genitourinary work entails, and the form is such as to make a change easy whenever one garment becomes soiled.

As desirable as it is to keep one's clothing covered, so imperative is it also to have the hands and forearms bare to the elbows. Pus, blood, or infected secretions soiling any part of the exposed skin may be at once washed off, which would not be feasible if the arms were covered by sleeves. The arms can be conveniently bared for our work if the shirt sleeves are especially made for the purpose. Their ordinary slit is extended to 2 1-2 inches beyond the olecranon; the cuff should not be over 2 1-2 inches wide. To keep the sleeve out of the way of the day's work, the cuff is opened and *not* turned upon itself, as is usually done when rolling up the sleeve. On the contrary, its anterior margin is kept downward as the cuff is laid in its normal position, as close to the shoulder as possible. The shirt sleeve projecting beneath is then smoothly folded twice or three times, according to its length, around the cuff, as it lies upon the arm. The undershirt sleeve is then so folded around the cuff and turned over the shirt sleeve that the lower part (cuff) of the undershirt is reversed upon the entire mass. The operator who devotes fifteen seconds to deliberately preparing each arm as above suggested will not be encumbered with his shirt sleeves throughout the day. When the work is finished, merely reversing the undershirt's cuff will allow the entire sleeve to drop to its place, without any crumpling of the starched cuff.

An important advantage of the careful preparation suggested is that, with arms bare and garments covered, the operator has no hesitancy in closely approaching his work. The thoroughness thereof is consequently greater than if he were risking infection, as before detailed.

2. *Protecting the hands.* The operator accustomed by long practice to the use of very thin rubber gauntlets will be adequately protected thereby. Of course, they must be in perfect condition and properly sterilized. The sense of touch will not be impeded if the operator uses a very tight glove, while it will be if he endeavors working with a glove that is too large for his hand. Whether a glove or the finger varnish (to be described) is used, the nails of the genitourinary specialist should always be kept so closely filed as to entirely obliterate the subungual space. Moreover, the skin about the nail beds should always be kept free from rough projections or irregularities (agnail, or hangnail) which may tear the glove or render finger varnishing sufficiently ineffective, to add to the patient's discomfort.

Those not accustomed to the use of gloves can perfectly protect the examining finger by dipping it into the finger varnish alluded to above. This consists of: Copal, 2.0; Venetian turpentine, 4.0; sulphuric ether, 100.0; collodion, 100.0; acetone, 8.0.

This varnish dries almost instantly into a perfect sheath for the finger, and in nowise obtunds its tactile sense. It does not break when the finger is bent or manipulated in any manner. After the work in view is finished, the finger varnish can be scrubbed off with a brush with soap and hot water. Any small flakes that may remain adherent to the skin can be readily rubbed off with a towel moistened with alcohol.

3. *Preparation of the table.* Common cleanliness commands that a fresh towel be placed upon the pillow to receive the patient's head and another upon the lower edge of the body of the table, where his buttocks are to rest. It is a crude but effective lesson in caution to place these clean towels as above suggested, in the patient's presence.

4. *Preparation of the patient.* It is wise to appoint a time for examination of the prostate and vesicles or for their treatment, shortly after the rectum has been evacuated. The presence of fecal masses primarily increases the inevitable unsavoriness of the procedure and further disturbs precision of work by the finger impinging upon them. It is true that such masses, if present, usually keep moving above and behind the finger's tip, still their presence is annoying enough to cause one to hasten his work.

The unesthetic character of the procedure need not be enhanced by an occasional patient's lack of cleanliness. One may find such disregard of cleanliness in particles of dried excrement adherent to the anal hairs, even among men whose garments portray the most fastidious care. It is charitable to say to such a patient that the hard fecal bits, if carried into the rectum, would injure it and to refer him to the toilet room, where he may cleanse himself with soap and hot water. The senior writer, confessedly less cautious than his associate, gave an unclean patient a handful of gauze squares to use in the suggested cleansing. His lesson came in a plumber's bill for $15, charged to remove the gauze with which the patient clogged the water closet.

Another, a smaller matter, in which the patient is not at fault, may assist to render the work unpleasant. It is a fecal soiling of the undergarments by patients with hemorrhoids. The obtrusiveness thereof is remediable in a manner that will be mentioned when discussing disposal of the patient's garments on the table.

5. *The patient's garments.* The patient's comfort demands removal of his coat and vest; these may be substituted, if he feels chilly on the table, by covering his chest and abdomen with an examining sheet or a light blanket. His trousers and drawers are dropped midway to his knees and he is requested to sit upon the clean towel placed to receive his bare buttocks. While he lies down the footboard of the table is raised to support his legs. The trousers and drawers are drawn down to the patient's ankles and a towel placed upon the thus exposed fundament of the drawers, so that no soiling thereof be perceptible and to protect the operator's elbow from contact therewith.

6. *The patient's posture.* The head should rest upon the towel covering the pillow, whose lower margin supports the patient's neck. The shoulders, however, must rest flat upon the table; the whole body so placed that the spine is in perfect line with the mesial line of the table.

The knees are well bent and allowed to hang apart as widely as they will fall. The left foot is rested on its outer margin, and the heel of the right foot is placed in the hollow of the left.

Both hands are closed into fists and stood upright on the table, beneath the buttocks. The fists are so held that the circles made by the thumbs and index fingers receive the tuberosities of the ischia of the corresponding sides.

This posture not only makes the perineum nonresistant, but by the upward bend given the pelvis relaxes the abdominal walls.

7. *The operator's position* may be at either side of the table if he is ambidextrous, as he should be. As the majority, however, can do more effective work with the right hand, it will be well to stand at the right of the patient, facing him. The exact place for the physician to stand is so that his chest is diagonally transversed by the patient's bent right leg.

8. *Preparations for penetrating the anus.* Before inserting the finger, it will be well to separate the anal hairs to avoid the unnecessary pain that would be produced by dragging them into the anus. The left fingers then raise the penis and scrotum, to save their being soiled with the lubricant used on the right index finger.

9. *The lubricant* must be sufficiently coherent that much of it will be carried into the rectum by the finger and not swept off as the anus is penetrated. Glycerin is too hygroscopic for this purpose and in some cases acts as quite an irritant to the rectal mucosa. Olive oil is very much thinned by the temperature of the rectum and thus loses much of its efficiency as a lubricant. Gomenol, 33 per cent., serves both as a lubricant and local anesthetic in hypersensitive cases. Gouley's lubricant, however, serves admirably in the majority of patients. If properly prepared, it has all the characteristics required.

10. *Lubricating the finger.* Whatever lubricant is employed, as large a quantity as possible is taken on the finger and the excess deposited upon the anus.

11. *Inserting the finger.* The prepared index finger is thrust through the mass of lubricant that has been placed upon the anus and pushed into the rectum without gyratory motions, following the curve of the sacrum, and slightly to the patient's right side. It will be observed that if the finger traversing the rectum is pressed against the posterior aspect thereof, the discomfort of the procedure will be materially reduced. When the finger is inserted as deeply as possible, the left hand releases the penis and scrotum, allowing them to hang towards or rest upon the right hand.

As the index finger progresses upward into the rectum the tips of the other right fingers are closed upon the palm, while the thumb is extended to reach as high as possible alongside the left side of the patient's scrotum. The right wrist is held as straight as possible, and the elbow brought as close to the table as is necessary to maintain this position.

12. *Counter-pressure.* The prostate and seminal vesicles being movable organs, it is necessary to fix them and while doing so to press them as far as possible toward the finger in the rectum. This fixation and pressure are attained by the left fingers. These are curved and their tips held ready to push down upon the prevesical region. The patient is then ordered to take a very deep breath and just as he has finished the following expiration, the finger tips are sunk into the relaxed lower abdominal walls, about an inch above the insertion of the recti into the pubis. The palm rests over and barely touches the pubic hairs. The finger tips are firmly pressed into the pelvis, as if to force its contents out through the perineum. At first efforts of this kind some patients develop quite a rigidity of the recti and other abdominal muscles. After a few treatments, however, they learn to so completely relax as to satisfactorily cooperate with the surgeon.

13. *Locating the prostate and vesicles.* The operator continually occupied in this class of work and he who has recently refreshed his studies of anatomical relations, will recognize the apex of the prostate the instant his finger tip has traversed the rectal covering of the *pars nuda urethræ.* The finger then passes successively around each outer margin of the organ to its base and then down between the lobes to outline the interlobular cleft, when it exists.

The finger will then pass up from one outer side of the prostate's base to search for the seminal vesicle of that side, repeating the procedure for the opposite side. In health, these organs can be felt only with great difficulty, and then only as soft strings.

In disease the vesicles may be considerably enlarged and yet not be palpable, when a very much enlarged prostate rises as an obstacle below them. It must be kept in mind also that the ampullæ of the vasa deferentia lie close to the seminal vesicles and in fact join them to form the common ejaculatory ducts. In consequence, inflammatory swelling of the ampulla of a vas, which exceptionally occurs, may convey to the examining finger all the appearances of a vesiculitis.

14. *Order of stripping and massage.* It is generally accepted that the vesicles should be stripped and the prostate massaged in the order mentioned. This proves erroneous in practice. When the prostate requires massage it holds material which it is unable to unload without mechanical aid. It then is likely by pressure to occlude the common ejaculatory duct; consequently it should first be emptied as much as possible, to allow free transit through the ducts of such contents of the vesicles as can be

stripped therefrom. It is therefore wise to massage the prostate, before stripping the vesicles.

15. *Technique of prostatic massage.* The apex of the prostate should be the first point of attack. The finger is partly bent and slightly withdrawn with each downward stroke. The strokes at first are performed very gently and their force gradually increased until the point massaged is felt to grow softer under the compressing finger. The same process is repeated for each lobe, extending the manipulations higher and higher until the base of the organ is reached, whenever this is possible. Ordinarily extrusion of prostatic juice from the meatus will begin before the finger has attained the middle of either lobe.

16. *Stripping the vesicles.* After the prostate has been sufficiently massaged, stripping the vesicles is performed in the same manner, except that lateral strokes are added to those from above downward. These lateral strippings must be performed on each side from without to the median line, on account of the angle which each vesicle forms upon itself. Without these lateral strippings only the lower part of the vesicles could be relieved.

17. *The force to be employed* in massage and stripping is incapable of general description. Experience and judgment can be our only guides. It is safe to let each patient's sensations govern the work. If the finger's contact with certain points in the prostate and vesicles give more pain than when other parts are treated, the sensitive ones should be more lightly pressed upon. Under cautious digitization the sensitiveness of these points will soon disappear. As in all similar procedures, gentleness does not exclude thoroughness. Indeed, special caution should be exercised, lest excessive zeal and energy convert subacute or chronic prostatitis, or vesiculitis, into acute inflammation of these organs.

18. *The number of strokes* to be employed in massage and stripping is governed by the local effect. When a region stroked upon is felt to yield its hardness, even to a slight degree, attention may be given to other parts of the organ, in the succession mentioned before.

19. *Duration of each stroke.* According to the region massaged or stripped, one to two seconds are devoted to each stroke.

20. *Length of séances.* The success attained and the patient's tolerance are the guides for the length of each séance in the beginning. Later, when the patient is well on the road to recovery, his tolerance to stripping and massage may exceed the operator's physical endurance.

21. *Intervals between séances.* In exceptionally acute cases the treatments may demand daily, very gentle repetition. As the acuity subsides, the intervals will advantageously be extended to every two or three days, and in chronic cases, every four or five days is the period that will be required.

22. *Immediate results.* When the prostate or vesicles are found to yield to digitization, it is due to extrusion of their contents into the posterior urethra. When there has been no recent coitus or seminal emission, the quantity of these contents may be so large that the merest contact will produce a copious overflow. Even without such an excess, the detrusors may be so active as to violently force the expressed juice through the urethra and out of the meatus. This is more likely to occur when posterior urethritis coexists. In other cases, especially while acute prostatitis or vesiculitis renders the organs tense, no visible juice can be immediately expressed from the adnexa in the first or second séance. This also happens in mild chronic prostatitis or vesiculitis.

In every case it is well to let the patient lie on the table for a few minutes after treatment, for the reason to be mentioned later. Juice will then generally ooze or drip from the meatus, having been retained by reflex spasm of the compressor, evoked by digitization. In some cases no external evidence of success is manifest before the patient's first urination after treatment. The urine, which may have been clear before, will then be turbid and contain coarse flakes, filaments, and shreds, in accord with the condition of the adnexa and the amount of juice expressed therefrom. Some patients never present the contents of the prostate or seminal vesicles except in urine as above conveyed.

23. *Massage on a sound.* When the posterior urethra is not especially sensitive, and when the condition to be overcome causes the prostate to project more into the bladder than into the rectum, it will be well to perform massage, while as large a sound as can comfortably be inserted is held against the lobe that is being treated. Effective as this aid to treatment is, its use cannot be recommended to any except those who have gained considerable experience in genitourinary instrumentation.

24. *Danger of syncope.* Some patients, who have never fainted before, may lose consciousness if allowed to arise from the table immediately after massage or stripping. It is therefore a wise rule not to allow a patient even to raise his head until the pulse has regained its regularity and vigor, and the pupils react promptly to light. No matter how staunchly the patient may assert his perfect well-being, this precaution should always be observed.

25. *Spasm of the compressor.* Whatever be the after-treatment indicated, the patient should empty the urine that has accumulated in the bladder while he has been on the table. In so doing he washes away any of the expressed juice that may remain in the urethra, or may have regurgitated into the bladder. If irrigation or instillation with silver nitrate is to follow the massage, its efficacy would be much reduced if not entirely inhibited by the thick precipitates that will be produced with the residual expressed juice. It must be remembered, however, that in most patients reflex spasm of the compressor has been induced by the digitization. This spasm rarely ceases in less than five minutes after treatment. This condition is productive of considerable unnecessary alarm, especially when a desire to urinate is present. The desire is apt to be very marked in neurasthenics whose kidneys at times excrete an immense amount of urine, especially under the excitement of being treated. When assured, however, that it will be impossible for them to urinate until after the time mentioned, their fears will diminish and upon the expiration of the given time they will void their bladder contents satisfactorily.

26. *After-treatment.* The conditions for which massage or stripping or both are required must govern whether there shall be any treatment at all thereafter, or whether irrigations or instillations with silver nitrate, protargol, or any other of the silver salts, or potassium permanganate shall be employed. The indications for each belong in separate chapters on diseases of the prostate and seminal vesicles and not in a paper like this, devoted exclusively to the technique of massage and stripping.

27. *Over-treatment.* As in all affections of the organs under consideration, much harm can be done by over-treatment. Singularly enough the patients in this regard are most at fault. Past experience having shown them that the general depression, lassitude, etc., that accompanied their condition was promptly relieved by the massage or stripping then required, they are wont to attribute for a more or less extended period after discharge from treatment all the unpleasant manifestations that may be due to business cares, family annoyances, indigestion, constipation, etc., to engorgement of the urethral adnexa. Then they importune their physician for massage or stripping. To these importunities the experienced operator will not yield when no such treatment is needed.

The complete indications and contraindications for massage and stripping, and the collateral medication required therein, are subjects for separate consideration.

No pretense at instructing or imparting anything new to the urological specialist is embraced in this paper, except perhaps to remind him that the office of specialist is largely educational. Progressive general practitioners study the writings of specialists. If the patients of but one of these colleagues derive benefit herefrom, the authors' hopes will be realized.

A NEW METHOD OF IDENTIFICATION SUPERSEDING DACTYLOSCOPY.

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I HAVE made numerous investigations regarding dactyloscopy and its employment for purposes of identification, but it has always appeared to me that it suffers from drawbacks which are due partly to the ready changeability of the epidermis of the fingers and partly to the difficulty encountered and large amount of experience necessary in correctly reading dactylograms.

It is possible for the epidermis of the fingers to be changed in various ways—pathologically because the hands, and especially the fingers, are subject to injuries which, upon healing, leave scar tissue; and artificially because a person whose finger imprints have been taken may readily obliterate the dactyloscopic picture by means of acids or other reagents, thus rendering reidentification impossible.

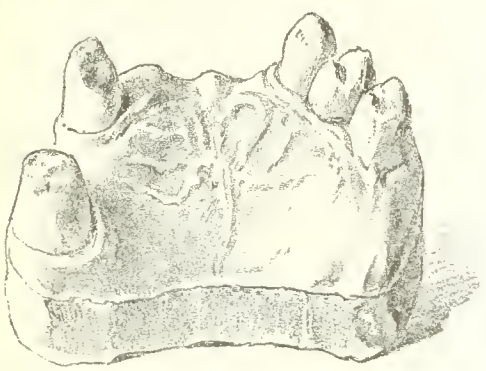

FIG. 1.

It may also happen that a criminal, availing himself of a previous experience with dactyloscopy, in his future operations renders the imprint deceptive by wearing gloves.

In order to evolve a method which might overcome these drawbacks, I have for several years examined the impressions made by human jaws. I have collceted several hundreds of such impressions, principally of the upper jaw; and whenever I make

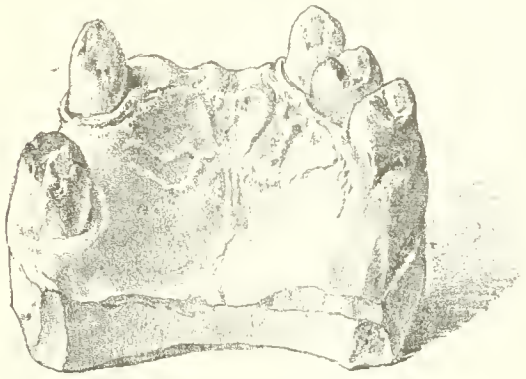

FIG. 2.

comparative examinations of these it becomes more and more evident to me how distinctive and characteristic is the impression made by the upper jaw of each and every individual. Not two impressions among thousands are alike in regard to the number, length, and breadth of the teeth, and the curvature and radius of the maxillary arch. The height, breadth, and depth of the upper jaw present equally many striking and readily recognized differences.

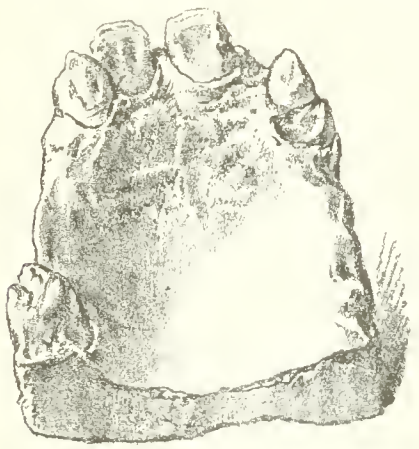

FIG. 3.

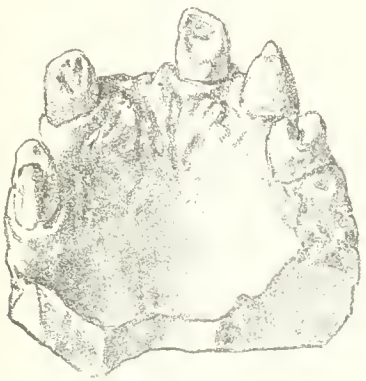

FIG. 4.

To these distinguishing features may be added also the possible gaps in a row of teeth, with their innumerable variations. The formation of the palatine membrane, which shows plainly on each impression, likewise constitutes a feature which is distinctive in each individual, never being alike in any two

cases, and remaining unchanged all through life. The circumstance that each individual jaw impression presents so many characteristics insures that, even though one or more lines may be obliterated or rendered unrecognizable during life, either by the

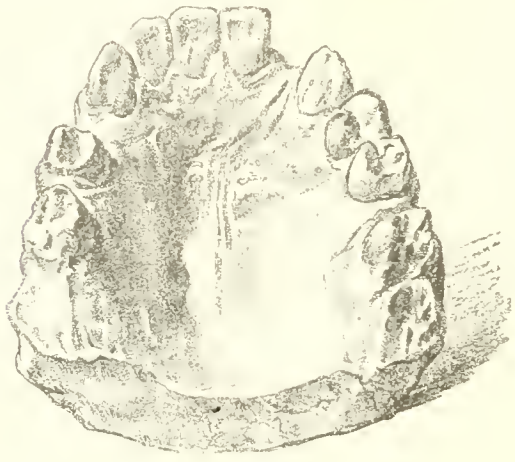

Fig. 5.

action of time or through pathological changes, there will always remain a sufficient number of ineffaceable characteristics to render absolute identification possible.

I have in my possession impressions taken from the jaws of the same persons at intervals of about

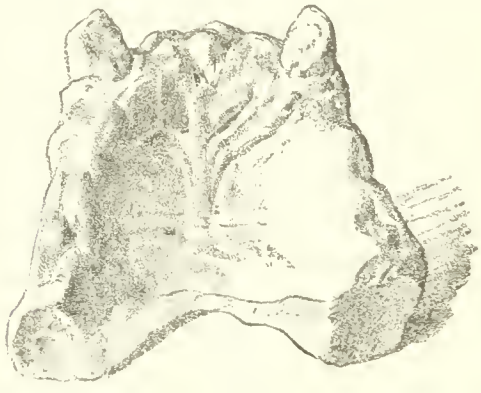

Fig. 6

ten years (see Figs. 1 and 2) and they present absolutely no divergences. The following illustrations show different jaw impressions as they appear at daily observations. What enormous differences in general aspect, form, and size! And this fact I

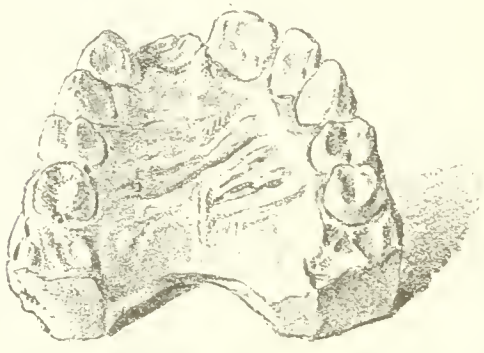

Fig. 7

have demonstrated repeatedly, day in and day out. Never yet have I seen two impressions which were even approximately alike.

To take the impression is a very simple matter. Every physician can attend to it, and every layman can readily learn the manipulation. By taking a plaster cast of such an impression, inscribing it with the necessary data, and keeping it on record, one obtains an incomparable identification mark of a human being.

Fig. 8.

If the system were introduced so that people who follow dangerous callings should put by an impression of the upper jaw, it would undoubtedly be feasible, even in the skeleton, to establish the identity of a person who had met death by drowning, or by falling from a height, or by a mine accident, etc. While I was engaged upon this study I received from a colleague the information that a Paris dentist had succeeded in identifying the corpse of a female patient by means of a jaw impression which he had kept, although her body was almost entirely burned to coal.

DIAGNOSIS AND TREATMENT OF GASTRIC ULCER.*

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THERE are many inherent difficulties and perplexities to contend with in the treatment of gastric ulcer. They are so numerous, indeed, as often to enshroud the physician in a maze of doubt and uncertainty as to what is the proper course to pursue. The anatomy and physiology of the stomach are of such a character as to make this true. We cannot change the one nor materially modify the other, hence we have no specific for the disease and in the very nature of things cannot have. However, within recent years our knowledge of how to meet these morbid conditions has given us a more comprehensive idea of the best means of placing the stomach in such a condition as to bring about a reparative process. The time is not yet far removed when the physician looked upon the treatment of gastric ulcer as falling wholly within his sphere of action, but in an iconoclastic age like the present, when old ideas are rudely cast aside and new ones put in their places, we must now look at this subject from an entirely different and broader viewpoint. With the rapid advances of modern surgery and the certain conviction that physiological rest is to be obtained as soon as possible, and as far as possible, the clinician must now concede the fact that the surgeon is at times to take his place.

Just when a peptic ulcer should pass from the hands of the one to the other is a matter about which there may be room for an honest difference

*Read at a meeting of the Northern Tri-State Medical Association of Ohio, Indiana, and Michigan, at Elkhart, Indiana, January 8, 1907.

of opinion. When a perforation has occurred, or marked dilatation has taken place as a result of stenosis, or the motility of the stomach is markedly interfered with as the result of adhesions, or possibly, though exceedingly rarely, in certain cases of severe and persistent hemorrhage, then of course there would not be a dissenting voice as to what was the wise thing to do. As physicians, I fear, we are too prone to treat the ulcer too much and the patient too little; that we lose sight of the important fact that an individual who is anemic, whose nutrition is much below par, as a consequence of lack of good and properly cooked food, or of the inordinate consumption of alcoholic beverages, or who lives in damp, illy ventilated quarters, is in poor condition to respond to direct treatment of the ulcer, no matter how canonically done, nor how thoroughly his environments may be changed, for ulcer of the stomach does not differ essentially from ulcer in any other part of the body. These cases should be viewed in the concrete, not in the abstract; should be individualized, not classified, and if this important fact is borne in mind I think the percentage of recoveries of acute gastric ulcer will be materially augmented. It is in the acute form of the disease that the internest must expect to record his greatest success, because when an ulcer has become chronic the muscularis invaded, with edges more or less indurated, medicine, even if supplemented with as near rest as the stomach can be given, will prove of but little avail.

In a series of 493 cases reported by van Leube 74 per cent were cured by medical means, 21 per cent. were improved, 24 per cent. died, and 2 6-10 per cent. were unimproved. Of the 21 per cent. that were reported as improved the results showed that the pain and discomfort returned as soon as they resumed work and their ordinary diet. The question arises, What are we to do with this 26 per cent. of cases? Shall we allow them to drift along in this uncertain and unsatisfactory condition, or shall we turn them over to the surgeon? The Mayos report an operative mortality of about 2 per cent., so that of the 26 per cent. only 2 per cent. will die from the operation, while the remainder will either be entirely cured or so much improved as to make a return to their former pursuits quite probable.

To my mind our duty toward this latter class of cases is a very plain one, and while a mortality rate of 2 per cent., or indeed even more, is a very small one, still with wider experience and more improved technique the knife may yet show a larger percentage of cures than at present. Then, too, the tendency for chronic ulcer to become carcinomatous must not be lost sight of, for the earlier the cure the less liable is this to occur. Unless my memory is treacherous, the Mayos have demonstrated that the starting point of carcinoma is usually an ulcer. Mouillin claims that this is true in probably 90 per cent. of cases. The early diagnosis of ulcus, then, is of the utmost importance, because the more early the diagnosis is made the more certain will be a permanent cure by medical means. This is not always an easy matter, if indeed not at times impossible, because postmortem findings give positive evidence of a healed ulcer that during life gave no indication of its presence. When there is pain on pressure over the stomach, constantly localized, augmented after a full meal, with lumbar pain and vomiting, the vomitus tinged with blood, no matter how little, or melena, hyperacidity with deficient motor function, the diagnosis is easy, but an ulcer may be present and not a single one of these symptoms manifest. There are those of wide clinical experience who claim that hypersecretion in a stomach not containing food is strongly indicative of an ulcer. If to this you add the deficient motility already spoken of, you have almost positive evidence of gastric ulcer, this deficiency being shown by the stomach not being empty seven hours after a heavy meal (Schmidt). Occult hemorrhage, in a meat-free diet, is another valuable aid to diagnosis, but unfortunately it is sometimes not available, unless all the stools are saved and examined during the time the patient is under observation. Again, the ulcus will not bleed continuously and the stools may be examined during intervals of cessation. Occult hemorrhage is much more frequent in carcinoma than in ulcer; except during the early period it is always present in carcinoma, and only in 51.4 per cent. of the ulcers, according to Rutimeyer of Basel. The hemaglobin in ulcer is reduced to about 80 per cent., although it may be much less in those cases in which the nutrition is low, and in whom there is more or less bleeding. Saloman's test, which was originally proposed and primarily used as a diagnosis for carcinoma, may prove to be of inestimable value as an aid in the early recognition, if not the earliest symptom, of gastric ulcer, as it is a strong indicator of a defect in the mucous membrane of the stomach. This test consists of the demonstration of albuminous bodies in the rinsing water after washing out the empty stomach. Gastric ulcer may be mistaken for renal or biliary colic as well as inflammation of the appendix. With the former a careful microscopical examination of the urine for blood, lime crystals, etc., to say nothing of nausea, vomiting, and constipation, will make a diagnosis reasonably sure. With the two latter we have tenderness, disturbances of the stomach, much pain, more or less fever, and usually a history of former attacks. I am in thorough accord with the statement of Hemmeter, made at a recent meeting of the American Medical Association, when he said there was no symptom of gallstone colic that might not be present in gastric ulcer. A diagnosis of ulcus ventricula by the *x*-ray after the deposit of bismuth subnitrate in the ulcer is extremely difficult and would be of little practical value except in the hands of an expert. A differential diagnosis between peptic and duodenal ulcer is not always possible nor indeed necessary, for the treatment of one is essentially the treatment of the other. A positive diagnosis having been made, the best means of treatment at once becomes a subject of grave consideration. The results obtained will depend entirely upon the thoroughness with which the treatment is carried out, and the length of time in which it is persisted in, as well as the subsequent mode of living of the individual. These are all important factors in determining the permanency of the cure. The patient should be put to bed at once and kept there for at least ten days, and much longer in not a few cases. This alone, according to van Leube, will often stop the pain, which in very many cases is such a prominent symptom, and so intense at times as to require morphine subcutaneously to relieve it. Just how rest in bed will stop the pain of gastric ulcer is not easy to explain. Agéron considers that the absence of food pressure on the larger curve of the stomach, and particularly the antrum pyloricum, is one factor and possibly the first one. The recumbent position also does away in a large measure with the pulling and pressing influence of other organs, such as the liver, spleen, and intestines, and possibly the kidneys, as these organs possess in cer-

tain individuals a wonderful degree of motility. But no matter how accomplished, the fact remains that rest in bed has a beneficial influence on ulcer of the stomach, therefore everyone must be put to bed and kept there from ten days to three weeks. If there is a tendency to hemorrhage, as indicated by hematemesis or melena, the patient must not be allowed to assume the upright position, nor, indeed, any position that requires exertion. If there is vomiting, particularly if it is accompanied by particles of food, the stomach should be washed out by means of a tube with a weak alkaline solution, until the water comes away perfectly clear. No food should be allowed for five days, except in rare instances. Thirst may be allayed by rinsing out the mouth with cold water or pellets of ice may be held in the mouth. The hyperchlorhydria, which is such a well-nigh constant accompaniment of ulcus ventriculi, and which not only prevents its healing, but possibly causes an extension of the ulcer, should be arrested by the administration of such alkalies as sodium bicarbonate and subnitrate of bismuth. Kussmaul recommends that the bismuth be given at first daily and then every other day in doses of ten to twenty grains in 200 c.c. of water through a stomach tube. The stomach is first washed out, and then the patient is placed on the side in which the ulcer is suspected in order that the bismuth may settle in the bottom of the ulcer, and the tube is closed by a clamp. When sufficient time has elapsed for the bismuth to settle, the water is allowed to run out, and the tube is removed. This method has a serious drawback in the constant retching to which the patient will be subjected by the presence of the tube, particularly in those in which there is a tendency to hemorrhage. Half-teaspoonful doses of subnitrate of bismuth suspended in water may be given daily, or twice daily with practically, I think, as good results. The bismuth settles in the ulcer and thus protects it from the irritating influence of the gastric juice and any food that may be administered, and is also an antacid and antiseptic. Nitrate of silver is another remedy of much potency according to the statement of clinicians of wide experience, and yet it is difficult to say just how it acts, because only a small amount of the salt can be used. It is most efficacious in those cases in which pain is a prominent symptom. It probably acts either as an antacid or as an antiseptic or both. It may be given in tablespoonful doses of a 1-10 of 1 per cent. solution. It is particularly valuable during the period of convalescence, or in the mild or ambulatory forms. Schmidt and van Leube lay much stress upon the administration of Carlsbad salt in the morning on an empty stomach. Composed as it is largely of alkalies, it probably acts as an antacid as well as a cathartic. Other remedies of greater or less potency are used, but time will not permit me to discuss them in this paper. The best method of treating the hemorrhage of gastric ulcer is sometimes difficult to decide. Local application of ice to the epigastrium in the form of an ice bag or Leiter's coil is often beneficial and is to be used, and pellets of ice may be swallowed if they do not cause vomiting when melted. Just how local applications, either cold or hot, to the epigastrium can influence the blood supply to an internal organ with which the blood-vessels of the skin have no direct connection is difficult to understand. Indeed, I have always been skeptical as to their influencing it at all, and yet such men as Schmidt and van Leube not only use them, but speak well of their results; van Leube alternates them without intermission, while Schmidt so far modifies this process as to make hourly intermissions. The Priessnitz alone are used at night. Schmidt maintains that the physiological action of the blood-vessels is better preserved by hourly intervals. In those cases in which the patient is weak and anemic, and strenuous objections are raised to the use of cold, equal parts of water and alcohol may be used instead. This line of treatment is available not only for the bleeding but in those cases also which give evidences of the presence of some inflammatory condition. The use of such drugs as opium, acetate of lead, ergot, and adrenalin in the treatment of gastric hemorrhage is of questionable utility. What influence they can have on the severed end of a blood-vessel is not clear to my mind, nor can I see how they can in any way hasten clot formation. Too much reliance then must not be placed on these remedies in the treatment of the severe forms of bleeding. It is in this class of cases that the services of a surgeon may be demanded, and yet I have seen the most alarming hemorrhages cease without operation and the patient finally recover. As I have said elsewhere, the one great object to be attained in the treatment of all forms of ulcus ventriculi is rest. Theoretically, the only way to accomplish this is to put nothing into the stomach. Cases will arise, however, from time to time, in which the nutrition of the individual will be at such low ebb that the rectal feeding will not be sufficient. Say what we will, and theorize as much as we like, the patient must receive a requisite number of calories each day to maintain a fair degree of nutrition, or we cannot hope for good results, if indeed the patient does not reach the danger point. In cases of this kind it will be well to risk a small amount of food by the stomach after the original five days' fasting. Years ago Da Costa recommended, if my memory is not at fault, a tentative amount of icecream, which if no bad results follow may be supplemented by other food. However, our principal reliance must be on rectal feeding. I hardly need more than mention the fact, that before giving the nutrient clysma the bowel should be well washed out with warm soap suds, so that the material injected may be the better absorbed. Just what shall be used as a nutrient enema will depend largely upon the teaching or peculiar belief of the physician. I doubt, however, if any will be found more efficacious than milk and eggs, and occasionally meat powder, and if a stimulant is wanted, wine or brandy, to all of which should be added a pinch of salt. Nor is it absolutely necessary to predigest the clyster, as it is not proven that the predigested albumins are more readily absorbed than the native. If there is a tendency for the bowel to expel the enema, which there often is after the method has been used for a time, fifteen or twenty drops of tincture of opium may be added. The temperature of the clysma should not be less than that of the body. It should be given through a tube inserted as far up the colon as possible. The patient should not be disturbed during the night, hence the last clysma should be given not later than eight or nine o'clock. Each morning the bowel should be washed out with a liter of warm salt solution that any remnants of the previous day's feeding may be removed, thus securing better absorption and preventing bowel distention as a result of decomposition. The intense thirst that is sometimes, indeed usually, met with in these cases may be allayed by injecting into the rectum one-half liter of physiological salt solution. Rectal injections should not be given more than three times a day,

at equal intervals, because if they are too often repeated the bowel becomes irritable and expels its contents. Moreover, the constant irritation of the intestine causes stomach secretion, the very thing we are anxious to avoid. On return to stomach feeding, much care will be necessary for a time, that this organ be not distended and that the food taken is properly digested. Small quantities of ice-cold milk, a tablespoonful of milk and lime water (three parts milk and one part lime water) may be given at two-hour intervals. The addition of the lime water will often prevent vomiting that might otherwise occur, and at the same time prevent the formation of curds. At this early period, enough milk cannot be given by the mouth to maintain nutrition, without disturbing and overtaxing the stomach. Hence, the addition of something bland becomes necessary. Meat jelly as recommended by van Leube and Fleiner may be added. This is made by boiling beef with calf's foot until it is thoroughly done, when a gelatinous mass is formed. While cooking, an egg is added, stirring the whole meanwhile, and the mixture strained. Salt is added to suit the taste and the food is given cold. Of this a teaspoonful may be administered at three-hour intervals. As time goes by, other easily digested and nonirritating foods may be added. The more food that is given by the stomach, the less will be necessary by the rectum. As one of the objects to be attained during the early feeding is to diminish as far as possible hyperacidity, care must be taken in the adminstration of the albumins. It may be necessary to administer some carbohydrates. Senator gives gluten, fat, and sugar with small quantities of albuminoids and decoction of gelatin. For the fats he uses, in addition to cream, small bits of frozen butter. His theory is that gelatin prevents hemorrhage and at the same time replaces in a degree the albumin. It would be impossible in the time allotted to this paper to give in detail the various articles of diet that may be used. Suffice it to say that the return to a mixed diet must be slow and gradual, reserving the meats for the last; and yet so good authority as Lenhartz allows a more liberal diet of the albuminoids such as milk, eggs, rice, scraped raw beef, ham, butter, zwiebach, and the like, claiming that they combine with the acids of the stomach, and thus hasten cure better than the somewhat strict diet of van Leube. And yet a glance at the diet list of van Leube shows it to be sufficiently protean in character. He divides the feeding into four periods or sections which I believe he strictly adheres to. The first section comprises a period of ten days, the second seven days, third six, fourth seven. *First period*, boiled milk; meat solution; beef tea, two zwiebach soaked, four cakes. *Second period*, in addition to number one, slimy soups, rice and sago in milk cooked soft with the whites of four eggs; raw and soft-boiled eggs, cooked calf's brain or sweetbread, boiled chicken and pigeon (without skin or fat). *Third period*, in addition to number two, boiled calf's feet, scraped raw ham, scraped beefsteak (half done), mashed potatoes, boiled rice in bouillon, a little coffee and tea. *Fourth period*, added to number three, tender roast beef (half done), roasted chicken or pigeon (without gravy), venison or partridge which has been killed some time, macaroni, noodles (sieved through), and a little white bread. From the fifth week on, slow return to solid and heavier food. He advises that the patient take his daily food in five meals, thus not getting too much at a time. During the rest in bed period the patient must have daily sponge baths and muscular massage, avoiding of course the abdomen.

On getting out of the bed, the individual is to be instructed as to his daily mode of living and particularly his eating and drinking. He should eat slowly, masticate his food thoroughly, and avoid completely all articles of diet that will in any way bruise or lacerate the stomach mucosa. He must also avoid all forms of alcoholic beverages. If there should be relapses, which there sometimes will be, or if the patient goes from bad to worse and complications arise, the services of a surgeon must be invoked. We can, in these latter days, survey this entire field with a calmer and more unbiased judgment and readily concede the fact that the treatment of ulcus ventriculi has a surgical as well as a medical side. A discussion of the former I leave to those who do that work, realizing that it is both interesting and instructive to the purely medical man.

ASTHMA: OBSERVATIONS ON 300 CASES.

By EMMET L. SMITH, M.D.,
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Asthma is a spasmodic affection of the involuntary muscular fibers of the small bronchial tubes, caused by a reflex irritation of the pneumogastric nerve which contracts these muscular fibers and gives rise to dyspnea of a paroxysmal character. This definition will harmonize the different theories on this subject, explain the action of various remedies and conditions, and prove out in the clinical test and in the permanent cure of this disease.

By the contraction of the bronchial muscles it is not intended to mean that part called the extrapulmonary bronchi, but the intrapulmonary bronchi or bronchioles, of which the physiologists estimate there are seven hundred and fifty millions in the lungs. In the extrapulmonary bronchi the cartilage and glands exist, but in the small bronchi and bronchioles, the involuntary circular muscles are well developed, and are controlled by the pneumogastric nerve. Of this nerve Ranney wrote: "Owing to the numerous connections of the pneumogastric with other nerves, its varied and extensive distribution, and the important character of its functions, this may properly be regarded as one of the most remarkable nerves of the whole body. It has been often known by the name of the 'par vagum,' from the wandering course of its fibers, which are distributed to five different vital organs, *viz.*, the heart, lungs, stomach, liver, and intestines, as well as to many other parts of secondary importance."

Cases of asthma have vasomotor disturbances, but to claim that true asthma is due to a vascular distention in the bronchial mucosa does not appear to harmonize with the classical physiological experiments or to prove out in the clinical tests. Spasms of the blood-vessels or even a turgescence of the mucosa of the bronchial tubes could not produce the phenomena of true asthma. Again, if turgescence of the bronchial mucosa was the cause of the asthma, then the use of atropine would be noneffective.

Acute bronchitis, fibrinous bronchitis, or angioneurotic edema of the bronchial mucosa may obstruct the bronchial tubes, but in these cases the râles indicate the obstruction is in a fixed locality, while in true asthma the obstruction is rapidly changing its location.

While it is evident that even in true asthma there is vasomotor disturbances, it is not the vasomotor

distention in the bronchial mucosa, but the asthma is due to the pressure on the asthmatogenous points (Brugelmann) in the nasal fossæ. This acts on the pneumogastric nerve and explains the various phenomena of true asthma. This pressure irritation may be on the nasal septum or rarely there may be no occlusion of the nares, and it may be due to a closed empyema of the ethmoid cells or sinusitis. This is the pathology of true asthma and it is confirmed by physiological experiments. It also can be confirmed in every case of true asthma by relieving the pressure on these areas, which gives almost instant relief to the spasm. The relief is made permanent by such treatment as will prevent such pressure.

Among the exciting causes given are inhalation of dust, certain powdered drugs, flowers, hay, and emanations from feather beds or pillows, horses, cats, and parrots. These, as well as others of similar character, cause or aggravate asthma by irritation, congestion, and pressure on the asthmatogenic areas in the nasal cavities. By wearing plugs of cotton in the anterior part of the nostrils or mechanical air filters, these exciting causes are noneffective. However, if these asthmatogenic areas are treated so that pressure cannot take place, then these exciting causes cannot cause asthma.

The following observations are common to asthmatic patients and are easily explained on this theory. If a person is chilled, or has cold, wet feet, or if the air is cold, or cold water is applied to the entire bodily surface, the result is vasoconstriction of the skin, and as the blood leaves the skin it causes internal congestion and increases the nasal pressure, which aggravates the asthma. However, if the skin circulation is normal, the effect of inhaling cold, dry air is to contract the nasal mucous membrane and to relieve the dyspnea in proportion as the nasal engorgement is relieved. Moist heat to the skin surface produces vasodilatation and as the skin reddens the nasal engorgement is relieved.

Cold, damp days aggravate most asthmatic conditions, and, conversely, dry weather, or the dry climate of Arizona, gives temporary relief in some cases. This is because the nasal membranes swell in damp weather—a condition which is observed not only in asthmatics, but in the great majority of people. Localities having dry air reduce the nasal swelling and give relief in proportion as the swelling (or pressure) is relieved. Not all persons get relief by change of climate, but upon examination of such as do not it will be found that there is a local reason.

The inhalation of chloroform for asthma may act (1) by local anesthesia on nasal turgescence, (2) by lowering arterial pressure (English Chloroform Commission), or (3) by the inhibition of the heart (Wood).

The action of iodine in asthma, when favorable, I believe is due to its well known action in reducing glandular (bronchial) swelling and pressure, and to its specific action on the nasal tissues. In cases of arteriosclerosis there are attacks of dyspnea simulating asthma, and the action of iodine in these cases has often been credited as helping asthma. According to M. Huchard "iodine medication is indicated when there is confirmed sclerosis, in which case the resolvent action of iodine on the sclerosed tissues may be obtained by phagocytosis." He also states that "in the period preceding sclerosis iodine medication for high arterial tension is useless, and it is better to have recourse to essential vasodilators (nitrites)."

The nitrites are general vasodilators, and amyl nitrite nitroglycerin, sodium nitrite, and erythrol tetranitrate act as such for from one minue to six hours. Any relief from the use of these in true asthma comes from their action in equalizing the entire vascular system and relieving the pressure on the asthmatogenic areas.

The use of adrenalin in asthma acts only as a local vasoconstrictor, and gives temporary relief in proportion as the turgescence in the nose is relieved. The internal or hypodermic use of adrenalin in asthma has been entirely unsatisfactory in my observation. Sprays or nebulized solutions in the nasal cavities act by relieving the pressure on the asthmatogenous areas.

Atropine in maximum doses, as advocated by von Noorden, Riegel, Campanella, and Rossbach, diminish the reflex excitability of the pneumogastric nerve. This not only gives temporary relief in asthma, but is useful in other conditions controlled by the pneumogastric nerve. During the paroxysm as much as one-eighth of a grain is given in twenty-four hours. The study of the solonaceous alkaloids is very interesting, but the trouble is that the chemists are unable to label these different alkaloids properly, as they generally all revert to atropine. I have used over 100 grains of the different German solonaceous alkaloids in the treatment of asthma. Daturine and hyoscyamine acted best, but their action was not uniform. Thus some observers may get better results than others, if their atropine should contain some daturine or hyoscyamine.

Berkart in his book on "Bronchial Asthma" says: "The fumes of burning nitre paper and smoke of cigarettes or powder, of which strammonium and nitre are the chief ingredients, act merely by the forcible cough which they excite when inhaled.' Then again, according to a recent paper by Francis Hare, these inhalations act by producing bronchial vasoconstriction. I have observed acute attacks in which the nasal cavities had been so completely stopped up with the accompanying acute rhinitis that the usual inhaling of smoke was without benefit. I have also plugged up the anterior part of the nasal cavities so that no smoke could be inhaled through the nose and the result was the same. I believe the temporary relief obtained by the use of these inhalations is due to the local vasoconstriction on the asthmatogenic areas. This explains why in some cases the use of the inhalations "wear out"—that is, that after a time they do not constrict, and consequently do not give the relief they did at first. Berkart says of these inhalations that they irritate the mucous membranes of the nose, pharynx, and bronchi, prolong the disease indefinitely, and paralyze the action of the heart.

If when asthma is treated as an uric acid condition there are favorable results, I believe the same are due to the giving up of sweets and other articles upon the antiuric acid diet list, as these have the tendency as well to engorge the nasal tissues and aggravate the asthma. In the so-called peptic asthma the stomach disturbance is a secondary cause. These peptic cases do not act directly through the pneumogastric nerve, but by engorging the nasal areas. These peptic cases and uric acid conditions aggravate asthma in proportion to the nasal engorgement they produce. The uric acid condition in the one and the disturbance of the stomach in the other may be the starting point, but neither is the real cause. The real cause is in the nasal fossæ, and this can be easily proven; and it can also be proven that the uric acid condition and

the stomach disturbance may be allowed to exist and yet there will be no asthma, if the nasal pressure is relieved. In any case of true asthma, where the nasal treatment has been to relieve all pressure on the asthmatogenic areas, I have found that articles of diet may be taken with no bad effect which formerly were certain to cause asthma. This I have proven time and again, and in cases where this treatment has been carried out I have even advised that the patients take such articles as had formerly caused their asthma, in order that they might test the result of treatment. In the treatment of these asthma cases I formerly used a special diet list, but now I give no dietary directions, and after the treatment has been started and the case is getting along satisfactorily I recommend the eating of different articles of food and the doing of those things that formerly brought on an attack. Patients are even advised to take a cold in the head, which is the crucial test for any line of treatment.

72 Madison Street.

MENTAL SYMPTOMS IN NASAL AFFECTIONS.

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"The exhilaration which comes from pure and refreshing air has a marked influence on our appreciations. To it is largely due the beauty of the morning, and the entirely different charm it has from the evening. It would be curious and probably surprising to discover how much the pleasure of breathing has to do with our highest and most transcendental ideas. It is not merely a metaphor that makes us couple airiness with exquisiteness, and breathlessness with awe; it is the actual recurrence of a sensation in the throat and lungs that gives those impressions an immediate power, prior to all reflection upon their significance. It is, therefore, to this vital sensation of deep or of arrested breathing that the impressiveness of those objects is immediately due."

In his charming essay on "The Sense of Beauty," from which the preceding paragraph is quoted, Santayana has touched on the physiological aspect of an interesting theme. The converse, it seems to me, offers phenomena of at least as great practical importance, and has been studied but little. The effect on mental processes and attitude, of deficient breathing or of vitiated air, offers a wide field for observation, and one from which it may be possible to glean some points in the treatment and prophylaxis of neuroses on the one hand and of nasal disease, on the other.

Nervous disturbances and psychical symptoms may have a two-fold bearing on nasal disease, according as they are in the nature of cause or of effect. The former are of subordinate importance from the practical side, although clinically at least as interesting. It is sometimes difficult to decide whether a patient is neurasthenic or hypochondriacal on account of old nasal trouble, or whether his vitiated nervous system has lowered resistance and increased irritability, so that there is morbid reaction to slight discomfort stimuli originating in the nose. However it may be, many rhinopathics, to coin a term, are also neurotic. Even the cocaine habit, which not infrequently becomes established in the effort to relieve nasal obstruction, may be considered as an indirect result of nasal disease or as a symptoms of a neurosis underlying both manifestations. In actual insanity the hallucinations of smell are much less frequent than those of sight and hearing, as might be expected from the comparative unimportance of the former function in soul life and cerebration. The relations of the sexual sense to that of smell have been studied by a number of scientists, and sexual osphresiology offers many interesting phenomena. In the lower animals the sense of smell is of great importance, not only in this connection, but in relation to perception of objects in the external world, self-protection, taste, nutrition, and other functions, and is, as we know, much more highly developed than in man. It would be as interesting as it is probably difficult to determine the influence of mental disturbances in these animals on the sense of smell and on the functions dominated by it.

Local symptoms are the most common manifestation of nervous disturbances in nasal disease. Neuralgic pain and headache are frequent accompaniments of obstructive forms, and more particularly of accessory sinus involvement. Face ache of a pronounced type, radiating to the teeth, ears, and brow, is common in acute antral suppuration, and even in serous effusion with increased tension. Retention of secretion and chronic hypertrophic inflammation with the production of granulations and polypoid growths, particularly those of the frontal sinus, may produce a dull, intermittent frontal or supraorbital ache which simulates malarial hemicrania closely, particularly as it is temporarily relieved by quinine. A diagnosis, *ex juvantibus*, is ambiguous here, as quinine has a marked effect in constricting blood-vessels, lessening secretion from mucous membranes and thus promoting drainage and reducing tumefaction. Many coal tar products, notably antipyrine, have a similar action.

In the field of motor disturbances, the most varied symptoms may be presented. Usually they are slight. Muscular unrest and slight twitching of individual facial muscles, either as an involuntary reflex, or as the expression of an habitual motion, is found in various forms of nasal disease, and produces an almost pathognomonic facies in many cases of adenoid hypertrophy with middle ear involvement. Pronounced facial tic and epileptiform seizures have been observed in cases of pendulous uvula embarrassing respiration, in foreign bodies of the nose or rhinoliths. The most marked mental complication is that observed in young mouth-breathers afflicted with adenoids, and known as aprosexia. The children are inattentive, listless, dull, do not seem to hear well if spoken to, or, if they give heed for a moment, soon relapse into a sort of day-dream.

The children fall behind their classes, and do not seem to be able to concentrate their minds on school work. Although this symptom complex may be partially explained by the diminution of hearing consequent on secondary involvement of the Eustachian tube and middle ear, it is a noteworthy fact that deafness alone does not produce intellectual torpor, nor seriously affect the ability to study or to concentrate attention. It has been said that these children use up all their nerve force, mental energy, and volition in getting air, leaving no reserve for cerebration. I have elsewhere* called attention to the fact that in mouth breathing less effort is actually required to fill the lungs than with nasal respiration. On the contrary it is just the ease of breathing which encourages superficial, lazy breathing which soon be-

*Nasal Obstruction as a Cause of Disorders of Nutrition, *New York Medical Journal*, April 22, 1905.

comes habitual, and later insufficient. When these children are bent over their books the motion of the thorax becomes still more inadequate, and a decided non-aeration is the result. Autointoxication may have something to do with the mental hebetude observed in these cases. That habitual superficial respiration is at fault is shown quite clearly by the after history, when the adenoids have been removed by operation. In many cases, after complete removal of the hypertrophies, mental hebetude, subnormal vitality, and susceptibility to colds and infection have persisted, until the habit of mouth breathing was broken up by exercise.

Stucky claims that acute or chronic disease of the nasal accessory sinuses frequently gives rise to serious forms of mental disturbance, as shown by the numerous cases of melancholia and suicide attributed to grippe. W. Sohier Bryant says that we have not yet determined whether these symptoms and conditions are due to intracranial pressure, direct or indirect meningeal irritation, reflex nervous conditions, disturbed cerebral circulation, or toxemia. The fact remains that in these cases ventilation of the occluded sinuses or cure of the purulent process often cures the psychosis. On the other hand, retention of secretion aggravated the mental defect, or return of the purulent infection in the sinus was accompanied by a return or aggravation of the psychosis.

65 East Fifty-eighth Street

THE EXPERIMENTAL EFFECTS OF TOBACCO UPON THE NERVOUS SYSTEM.*

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There is great need of careful and exhaustive study of the effects of tobacco upon the nervous system. The general prevalence of the habit, especially in the young, shows that we should have a full and sane knowledge of the effects of tobacco on the nervous system. Observations upon the subject in future should try to parallel the taking of tobacco as in common practice. Much data of older experiments has been found of little use because this fact has not been kept in mind. We hope some modern research laboratory may correct this defect at an early date.

A variety of substances have been found in tobacco aside from nicotine. Some of these are pyridin, picolin, tulidin, parvolin, collodin, rubidin, varidin; also carbolic acid and marsh gas. Krouse states that cyanogen is also present in considerable quantity. None of the above, aside from nicotine and pyridin, have been thoroughly studied. No little of the differences of opinion which observers have held regarding the action of nicotine may be due to the lack of exclusion of the other products in crude tobacco. This statement is particularly pertinent in studying the effects of tobacco on the nervous system. Tobacco only registers a permanent and definite impression in nervous structures when it is used for months or years. Tobacco deprived of nicotine may be made to produce contraction of the pupil, dyspnea, general convulsions, and death in animals. The neural action of pyridin is that of a respiratory paralysant and spinal cord depressor.

Inasmuch as it is fairly well proven that tobacco is a cardiovascular poison, many attempts to make tobacco substitutes have been undertaken, but it may be said that none has been successful. Not a few efforts of late years have been directed toward making a tobacco, nicotine-poor. One of the latest and most interesting experiments is that of the Austrian government, which, it will be remembered, has a monopoly of the tobacco trade. It has manufactured tobacco brands which are made almost entirely free from nicotine, but they did not meet with satisfaction, as the flavor suffered a marked loss; besides, the sedative effects were not obtained as formerly from the consumption of crude tobacco. Nevertheless, the government holds patents for reducing the nicotine and pyridin of tobacco at least fifty per cent. by means of a lime or potash treatment. A still better method has, however, been employed during the past year. It consists in heating ready-made cigars and cigarettes to a temperature of 200° C.; thus twenty to fifty per cent. of the nicotine is driven off at a single treatment. Physiological studies have already proven that this nicotine-poor tobacco is very much less harmful on the nervous and vascular systems. The latter experiments are the more interesting as it has been heretofore held that the intense action of smoking tobacco on the nervous system is due to the presence of the bases of the pyridin series, and not to alkaloid nicotine itself. However, it is not yet proven that all the essential alkaloidal series of tobacco do not suffer loss in this caloric or chemic treatment.

The experimental effects of tobacco on the nervous system may be divided into acute and chronic. It acts both on the peripheral organs and nerve centers. In its action on the cardiovascular apparatus its maximum effects are registered on the aorta and coronary arteries, producing, when taken in habitual excess, arterial sclerosis of these parts.* It induces also a peculiar form of cirrhosis of the liver, which does not immediately concern the main purpose of this paper. Nearly all the experimental work done on tobacco has been done by the use of graduated doses of nicotine.

The alkaloids of tobacco are chiefly absorbed by the mucous membranes, although it may be taken

*Read before the joint meeting of the New York and Philadelphia Neurological Society, March 16, 1907.

*Drs. Adler and Hensel have recently reported some pioneer work (*Jour. Med. Research*, September, 1906) on the ability of nicotine to induce atheroma of the aorta. They appear to have been unaware of the work done in this field by Anstio (Italian) about a year earlier. These American authors seem only to have been aware of some negative results obtained by Josne in this field (*Arch. gen. de Med.*, 1904, November 1). The authors used ⅓ c.cm. of a ½ per cent. of nicotine in water, which was injected daily into the ear vein of the rabbit. Ten minutes after each injection each animal had a violent and typical convulsion, lasting several minutes. But after such convulsion the animal behaved normally until following day, when injection was repeated. There developed neither cumulative action nor tolerance. Some animals received a hundred consecutive injections without any change whatever in the typical effects as detailed above.

The chief aim of the article is to show that by such intravenous injection rabbits, after a very variable interval, may develop lesions of the aorta. These greatly resemble those caused by adrenalin and digitalen. The first lesions appear as calcareous areas, which differ greatly as to size, shape, etc.

With progressive injections the areas continue to spread to the thoracic and abdominal aortas, and even to the iliacs. Naturally these areas tend to become the seat of aneurysms. The nicotine lesions are primarily necrotic in character. While closely resembling the lesions of human arteriosclerosis, there are many differences.

us by the skin. Animals have been killed by the latter method of administration.

The acute effects from toxic doses of nicotine administration are fairly well known to all; they embrace horrible nausea, vomiting, giddiness, intense malaise, with weakness, followed, if the dose has been sufficient, by burning pains in the stomach, purging, free urination, extreme giddiness passing into delirium, a rapid running and finally imperceptible pulse, cramps in the limbs, absolute loss of strength, a cold, clammy skin, and finally complete collapse and death. In the lower animals, especially in the frog—aside from the symptoms just enumerated, which have been encountered in man—violent convulsions of spinal origin are superadded, followed after a time by spinal paresis.

Tobacco is a powerful depressant to the motor or efferent nerves, acting primarily upon their peripheral filaments. The afferent or sensory nerves are much less affected, but are probably also depressed. The sympathetic ganglia are first stimulated and then depressed by nicotine. To these actions are probably due the increase of saliva and other secretions caused by small doses, and the lessened gland activity produced by large doses. The acuter effect of nicotine upon the nervous mechanism of the heart and circulation is very pronounced. While the initial rise in blood pressure is certainly due in part to direct stimulation of the heart muscle and a stimulating contraction of the peripheral vessels, the heart ganglia receive the greater part of the excitation. As is well known, the contrary holds good for alcohol. It is further probable that the final paralysis of the heart in nicotine poisoning is due to a double depressing influence upon the heart and arterial walls.

The acute toxic effects of tobacco upon the pupil induce a myosis, probably paralyzing the peripheral ends of the sympathetic; and it almost certainly stimulates the oculomotor nerve.

It first excites, then paralyzes the respiratory center. Prag states that retardation is universal in the animal kingdom, while among mammals acceleration is found. Traube teaches that the lungs always give out before the heart in acute nicotine poisoning; this he ascribes to paralysis of the respiratory center. Rosenthal has induced inspiratory cramp and death by sufficient doses of nicotine. However, no little difference of opinion exists among experimentors as to whether the final paralysis of the nervous mechanism of respiration is central or peripheral. Probably both are right. According to Mittenberg's experiments upon dogs, nicotine acts in accordance with the dose, either as a pure excitant to the respiration or as a first excitant and then paralysant, or as a primary paralysant. Excitation of the center in general means accelerated respiration, and paralysis means retardation of respiration, with long expiratory pauses. Death occurs through primary arrest of respiration.

In feeding the animals either crude tobacco mixed with food or the alkaloid nicotine, tolerance is easily and early established, requiring but two or three days. The animals lose neither flesh nor appetite. Adler fed four cigars daily to a female rabbit for six months; everything proceeded as in health; the rabbit became pregnant, giving birth to seven young, which she nursed successfully.

Cats are the most susceptible to nicotine of all mammalia. Birds are also easily affected. One drop of nicotine given to a pigeon will cause collapse, tetanic convulsions, and death in a minute. A sort of tobacco chorea has been induced in some horses. However, the toxic coefficient or the amount necessary to produce death has never been definitely determined.

In chronic poisoning there is more or less gastroenteritis of a hemorrhagic character. Ecchymosis occurs in the pleura and peritoneum. Hyperemia of the lungs, brain, and cord is found. There is a lowering of the hemoglobin content of the blood, which has been reported as low as forty per cent.; there is also a diminution of red corpuscles. Coarse lesions have been found in the brain and spinal cord. Walicka claims to have seen peripheral neuritis in animals which on autopsy showed the same changes in the peripheral nerves as that noted for the optic nerve in tobacco amblyopia. In Australia the horses which eat a variety of tobacco known as *Nicotiana anavcolens* develop severe chronic ocular disturbances analogous to tobacco amblyopia in man, and in extreme cases, at autopsy, the optic nerve is found degenerated. Virginia deer eat this tobacco plant without harm. Possibly they grow immune. Horses are more affected than cattle and sheep, to which latter class deer belong. Vas has shown that in the rabbit there are well defined abnormalities in the chromatin distribution and swelling of the cell body in the ganglion cells of the spinal cord. This change was uniformly found in all the spinal and large sympathetic ganglia. Parsons and Pandi claim to have seen degeneration of nerve fibers similar to that noted by Walicka.

In the experimental induction of nicotine poisoning in rabbits Papow and Modeston have frequently seen distinct pathological alterations in the retina of rabbits. Curiously enough no systematic study of the ocular lesions of tobacco poisoning has ever been undertaken. It is an interesting fact that tobacco abstinence in animals, previously made tolerant of toxic doses, is attended by symptoms analogous to those seen in man. The animals are extremely restless, irritable, insomnic, apprehensive, and subject to violent fits of anger.

A study of Kobert's work leads one back to our original view that the subject of tobacco poisoning on the nervous system, especially in its chronic (although also in acute) phases, is fraught with contradictions. An attempt to schematize the subject matter has been foiled by the facts. Why should one pharmacological authority class nicotine with muscatine, another with conine, and a third with pilocarpine? This alone teaches us the status of the action of tobacco. At the same time these incompatibilities give an independent observer some certain light and a chance to find facts suited to his individual views— a study in pragmatic philosophy.

From the animal experiments upon tobacco poisoning the following conclusions may be drawn:

1. It is fairly proven that tobacco is primarily a cardiovascular poison.

2. Its acute toxic effects on the neuromuscular apparatus are, first, as an excitant and mild convulsant; second, motor nerve depressant, and finally a paralysant of the central and peripheral nerves of the heart and lungs.

3. Its chronic toxic effect on the nervous system (as yet so inaccurately studied) is to induce toxic congestion of the brain, spinal cord, and peripheral nerves; inducing finally in the latter, a mild type of degenerative neuritis.

4. The toxic coefficient, even in animals, under strict test, is so very variable as to vitiate much of the attempt to derive any definite conclusions of its effects on the nervous system in man.

23 West Fifty-Eighth Street.

DIET IN PULMONARY TUBERCULOSIS.

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Diet is an extremely important factor in the treatment of tuberculosis. Nothing is so discouraging to the physician as a persistently rebellious stomach or bowels, and nothing so decidedly interferes with the recovery of the patient. Thanks, however, to the modern fresh air treatment, which stimulates the appetite and digestion, these difficulties are as nothing to what they were formerly. Nevertheless, it often requires much tact, patience, and good generalship to make a patient eat properly.

The big difference between the new system of feeding and the old is in the amount of food to be taken. Now we resolutely insist that the patient who is under weight shall eat large quantities of food up to the limit of his digestive powers; and if fresh air and rest do not enable him to assimilate of this enough to gain steadily up to his normal point or a little above, we must invoke special medicinal aid. Overfeeding, as it is often called, is so important that some in their eagerness to succeed overdo the matter, and from their results seem to aim to produce fat folks instead of well folks. While the gaining of flesh is generally an indication of an improvement in lung condition, it is not necessarily so, as some hopeless cases may become quite fat for awhile; and even when the lungs are getting into good condition, if the stuffing process is carried to the extreme, we may be confronted by the dangers (as in overfeeding well people) of inducing dyspepsia, gastric dilatation, lithemia, or the uric acid condition with its pseudorheumatism, intestinal putrefaction, etc., with gout, gravel, hepatic congestion, arterial and kidney degeneration, diabetes, obesity, etc. Besides, the carrying around of an excessive amount of fat brings too great a strain on the already weakened heart. These dangers, however, although real and occasionally met with, less often confront us than that of insufficient nourishment. The great problem generally is to make people eat *enough*. Appetite is no guide. It is almost invariably found that a consumptive can digest far more food than his appetite demands, and it is the physician's duty to show him how he can do this. Some patients think they cannot take milk, others that they cannot digest eggs, others meat, etc. In a few rare cases this may be so, but with the vast majority it can be done in one way or another, if the right methods are employed. If a patient can eat at a table where others are eating heartily, he will generally do better than if he eats alone. If on the day in each week when he is weighed he shows an increase, this will encourage him anew. The palatability of food is important in gaining weight, as is also the attractiveness of its serving. A cheerful dining room, a clean tablecloth and napkins, pretty dishes and thin glass tumblers are almost necessities as well as luxuries. Small, steady gains are better than large, irregular ones. When the patient weighs enough, he should be instructed to eat less.

When the overweighted patient who has been discharged with his disease arrested goes to work, he is apt to lose his superfluous flesh. If not, he should reduce his diet for the good of his general health. It is too much tax on his digestive and assimilative power to maintain this increased weight. In some cases where, from a variety of causes it is difficult for the patient to take sufficient food, the employment of a tactful trained nurse, if it can be afforded, will be a great help, even if she is not otherwise needed. Meals should be served with the greatest regularity. Only the pleasantest conversation should be allowed at the table. The patient should particularly avoid worry. He should eat slowly and masticate thoroughly, remembering that by doing so he ought to secrete and utilize for important digestive purposes a large amount (one quart, perhaps) of saliva each day. Gladstone used to chew each mouthful thirty-two times, once for each tooth in his head. The patient should not eat when very tired, nor exercise on a full stomach; and therefore, if necessary, he should rest both before and after eating. He should surely lie down for the quiet hour after his noon meal. If the symptoms of overeating come on, such as great fulness of the stomach, sleepiness after meals, flatulence, vomiting, diarrhea, muddy urine, intestinal fermentation, etc., and do not yield to medicines, the diet should be lessened in amount.

As to just what the food should be there is no invariable rule. Patients differ, and the physician should individualize. One man may do well on the coarse fare of a Western ranch or of the Maine woods, while another may need the most tempting viands prepared with the greatest skill and delicacy.

The diet should be mixed. No exclusive fads should be indulged, like the grape cure, the milk cure, the raw-meat cure. No one article of food contains the proteids, fats, and carbohydrates in proper proportion to be sufficient alone. Besides, a single food becomes after a while painfully monotonous and repulsive. Rubner estimates that a person of average weight (150 pounds) in health needs differing amounts of food according to his occupation. Twenty-five hundred calories would do for a clerk at the desk, while a blacksmith might need 5,200. The average man without much exercise might need about 3,000, and the average consumptive would need much more, especially if his disease were active and he were much under weight. A calorie (we must not forget) is the amount of heat required to raise one kilo of water one degree centigrade. Theoretically we ought to be able to figure out first for the healthy man and then for the consumptive in different stages and conditions just the amount and the relative proportions of proteids, fats and carbohydrates, mineral salts, and water which he needs. Practically, this theoretical diet often fails because we never know just how much of each of these classes of foods a defective alimentary tract may assimilate. Many experiments have been tried and are being tried along these lines, but so far without much success. Perhaps some time we may learn enough for a good working basis, but hitherto most of our good results have been empirical rather than derived from scientific deductions. In general, a consumptive's diet may for the present be considered fairly correct, if he regains flesh and strength after having lost both.

Except when we are making experiments there is no need to weigh the food eaten. It is easier, pleasanter, and better to weigh the patient once a week. Thus we can estimate the amount really assimilated, which is far more important than the amount ingested. He often gains for a while two or three pounds a week.

All of the necessary nutritive elements are in milk and in certain other foods, but their proportions vary. The proteids predominate in eggs, meat,

cheese and fish, the carbohydrates in sugars and starches. The fats are found in the flesh of animals and fishes, in cream and butter, in olive and cotton-seed oil and in nuts, and the mineral salts in vegetables. Fats are especially needed by consumptives, and they seem to be assimilated easily, if well chosen. The following proportion has been suggested, subject to further experimentation: Proteids 120 grams, fat 140, and carbohydrates 300. In caloric value a glass of milk is said to be equal to one ounce of cheese or to two eggs or to two ounces of bread, three ounces of lean meat, or sixteen ounces of oysters. We depend upon the proteids to build up the tissues, and these can be helped out by the fats and carbohydrates, the latter being better proteid sparers than the fats, and also being cheaper, but unfortunately being too bulky and hard to digest, if used in sufficient quantities without much fat.

In establishing a dietary there is no one routine advisable for all cases. In actual practice great variation occurs. But on one point there seems to be a wonderful unanimity of opinion among those who have helped the largest number of tuberculosis cases to recovery. The constant and extensive use of milk and eggs is deemed by all well-nigh essential. After one has got well started in the right way, he can be expected to take from two to three quarts of milk and from four to six eggs a day in addition to his regular meals of solid food. If he is not able at first to take these with his solid food, it may be wise to leave out the latter for a while and confine himself entirely to the milk and eggs. If he has a great repugnance to these, he can begin with very small quantities, an ounce or even less of milk and one egg, for example, to be taken at more frequent intervals. The milk should be taken in sips, very slowly, and the eggs should be tossed off whole, perhaps adding a little lemon juice or salt for a relish. The eggs should be as fresh as possible and the milk pure, unboiled, hot or cold, clean, rich, and daintily served. Cream may be added if desirable. Small quantities of milk may be constipating to some extent, but the large amounts which consumptives require, on account of the fat and water contained, are slightly laxative. Milk and eggs are usually taken for lunches between meals and before bed. Some who claim to be familiar with them think that the milks from asses and mares are more digestible and the best; but most of us, I fancy, even if we could get them easily, would be quite content with good cows' milk.

If necessary, the milk can be peptonized. Kumyss and buttermilk may help out our menu. Milk will sometimes digest better if a little salt is added. It will relieve the tediousness of raw eggs if the flavor is changed now and then.

Some physicians advocate three square meals a day with three lunches interspersed, and some only one hearty meal at noon; in the latter case more milk and eggs being taken at other times. A few advocate leaving out the lunches and eating only three times a day, including the milk and eggs at these meals. Most, however, believe in eating five or six times a day. Although milk and eggs come nearer to the ideal diet for consumptives than anything else, yet it is certainly unwise to use them exclusively. Even in fever up to 102° a solid diet is better, giving way to milk, malted milk, gruels, and broths if the temperature is higher. If for any reason we have to leave the solid and mixed diet, we like to get back to it as soon as possible.

The very best way to get in the necessary amount of fat required is by means of milk, cream, and butter. Every consumptive should eat large quantities of butter, preferably not cooked. Cod-liver oil, until lately so much used, is so nauseating to most that it should not be thought of. A little olive oil on salads or on other foods or alone is better, and many enjoy it or learn to like it. Cotton-seed oil is much the same and is cheaper. Bacon for breakfast is very appetizing, and sardines and salmon also contain much fat.

Most consumptives need a great deal of fresh meat, and should have it two or three times a day. It is much better rare than well-done, and should not be twice cooked. Raw beef would be better still if people would be willing to eat it. Some do and grow to like it after a while. It is more digestible and is often good for diarrhea. When scraped it may be rolled into balls easy to swallow, or put into sandwiches with anchovy paste or salt herring to give it a flavor. The yolk of raw eggs may be added. To tempt children it may be mixed with sweets, or when made into balls the outside of it may be cooked just enough over a quick fire to take away the raw taste of the whole. Thin soups or meat extracts do not contain much nourishment, but are appetizing and excite the flow of the gastric juice. Meat juice, on the contrary, is nourishing. It is pressed out of raw or slightly browned beef cut into small pieces after it has steeped for a while in an equal weight of warm water (a little salt being added), and should be freshly prepared. To make a good raw meat soup mix half a pint of finely minced fresh meat with enough milk to make a thick paste. When ready to serve add half a pint of hot milk or chicken or veal stock. Mutton, lamb, chicken and other poultry, game and venison are also to be included, and even veal and fresh pork are allowable if the patient has a very strong digestion. Pastry, candy, fried foods, and cabbage should very seldom be eaten.

Tea, coffee, cocoa, and chocolate may be allowed in moderation if they seem to agree. Excessive smoking should be discouraged, but a moderate amount out of doors may be allowed to those who have long been used to it and feel dependent on it. Alcoholic stimulants should be positively forbidden. Alcohol is now universally recognized as a very frequent cause of tuberculosis, and the treatment of the disease can surely be conducted far better without it.

The following dietary, subject to modifications, will convey some idea of how consumptives with good digestion should be fed, if under weight:

Breakfast.—7:30 A.M. Fruit, cereal, coffee, toast or muffins, one raw egg, two glasses of milk.

Lunch.—10 A.M. Two raw eggs, two glasses of milk, crackers.

Dinner.—12:30 P.M. Soup: rare roast beef, or lamb, mutton, chicken, turkey, steak, chops, sweetbreads, or raw chopped beef; potatoes, two vegetables chosen from among stewed tomatoes, corn, peas, beans, squash, spinach, beets, onions, turnips, asparagus, cauliflower, celery etc.; salad; baked or stewed apples or a simple pudding, custard, cornstarch, farina, rice, junket, or bread pudding.

Lunch.—4 P.M. Two raw eggs, two glasses of milk, bread or cheese sandwich.

Supper.—6:30 P.M. Hot or cold meat, bread, milk-toast, fruit or sauce, tea, one raw egg, and two glasses of milk.

Lunch.—9 P.M. Two glasses of milk.

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THE CANCER PROBLEM.

It must be confessed that in spite of the time, brains, energy, and money which have been expended during the past few years in the attempt to solve the problem of cancer, in almost all parts of the civilized world, little or no apparent progress has been made. Of course, this is not to say that the research work which has been carried on so earnestly by skilled investigators in America and elsewhere has been in vain, for many important and new facts relating to malignant tumors have been unearthed. But insofar as a final elucidation of the many obscure points which still wrap the mysterious disease known as cancer is concerned, the end is not yet even in sight. Theories in regard to its etiology have been abundant within the decade just gone by, some of which have been extravagant, some plausible, and one or two have been almost accepted as clinching the matter once and for all. However, a closer analysis of every theory as to the causation of malignant tumor has revealed a weak link in the chain of argument, and one after the other each theory has been rejected.

At the present time, the situation is this: In the United States, in Great Britain, and in Germany, research work having as its object the discovery of the nature and cause of the malignant growths, is being eagerly prosecuted by bands of skilled and energetic investigators; and now and then from one or other of these laboratories comes the news that a forward step has been made in the direction of the goal. It must not be forgotten also that there are in the field many independent investigators, and many scientific men, both surgeons and physicians, who, while they do not make a special study of cancer, at the same time miss no opportunity that may come in their way of increasing their knowledge of the disease.

To this latter class belongs Mr. Bland-Sutton, one of the best known of English surgeons, and who recently delivered an illuminative address on "The Cancer Problem" at the Institute of Hygiene in London. Mr. Sutton began his address by pointing out that while the public is persistently asking the profession to explain the nature and cause of the tumor diseases, grouped together for clinical convenience under the general term cancer, some observations have been made which tend to show that physicians and surgeons have failed to grasp the subject in its full meaning. Mr. Sutton is of the opinion that investigators would do well not to rely on histological methods alone for distinguishing between the various groups of malignant tumors, but to consider the larger structural details which serve for the identification of these neoplasms.

There are five distinct groups of malignant tumors, and Mr. Sutton draws attention to the fact that in dealing with these tumors the position is such that we are unable to point to any absolute histological indication of malignancy, and that clinical and histological characters must be considered together. Microscopical examination, even when conducted by the most expert microscopist, cannot determine with precise certainty whether a tumor be malignant or not. "The true character of such tumors can only be determined by careful observation of the patient." In the course of his address Mr. Sutton gave examples drawn from his own wide experience of the futility of relying wholly on histological methods to determine the nature of a tumor.

Perhaps the most interesting part of Mr. Sutton's lecture was that which related to the permeation of the cancer poison through the body. The old idea was that such dissemination depended on the invasion of the blood, but Mr. W. S. Handley showed that cancer was spread by way of the lymphatics. Mr. Sutton himself has always been puzzled by the fact that although, when cancer arises in organs such as the breast, eyeball, testicle, tongue, or lip, it is invariably unilateral, yet in the case of the ovary carcinoma is usually bilateral. This led him to suspect that in many instances bilateral cancer of the ovaries might be secondary, and further experience and observation have so strengthened his belief that it practically amounts now to conviction.

The point, however, of Mr. Sutton's address was that histological methods alone are not sufficient or accurate enough to determine clearly the nature of a tumor, but that these must be supplemented by careful observation of the patient in order to gain a correct diagnosis. In a few words this means that laboratory methods are not by themselves to be relied upon in order to determine the nature of tumors, but that practical bedside observation in this connection has a very important part to play.

BLOOD-PRESSURE APPARATUS.

Now that the determination of the blood pressure has established itself as an indispensable routine procedure in a very great variety of conditions it is natural that efforts should be made to improve the existing apparatus, both in accuracy and simplicity. While instruments of the Riva-Rocci type, particularly the Janeway sphygmomanometer, apparently leave but little to be desired in the way of accuracy, the records obtained with them when properly used probably not being more open to criticism than those furnished by the clinical thermometer, they suffer to some extent from structural disadvantages that justify efforts to produce a nearer approach to the ideal. Two new forms of apparatus for measuring the blood pressure are described in a recent issue of the *Berliner klinische Wochenschrift* (June 3, 1907), one of which is presented by its originator as being an advance in the direction of exactness, while the other has been devised as an improvement in mechanical construction.

Bing considers that it is preferable if possible to determine the end pressure in the axillary artery rather than the lateral pressure, which is the one usually measured by instruments in which an armlet is employed, since the latter is, theoretically at least, susceptible of modification by the degree of contraction of the vessels peripheral to the constricted district. In order to gauge this pressure, he employs two armlets, which are applied side by side above the elbow. The upper of these corresponds to the one in ordinary use, while the lower and narrower one is intended for the purpose of securing complete closure of the artery immediately below the point at which the pressure is being measured. The tubes from these two armlets enter a two-way stop cock, by means of which either one can be put in communication with the ordinary manometer and inflating bulb. Communicating with the lower armlet is a tube terminating in a U-shaped capillary tube containing a droplet of petroleum colored red. In order to use the apparatus the lower armlet is inflated to a point 20-30 mm. higher than that required to secure obliteration of the radial pulse. The stop cock is then adjusted in such a way as to permit inflation of the upper armlet. This is carried to a point at which the fluctuations of the red index in the capillary tube caused by the end impact against the upper border of the lower armlet disappear. The pressure is slowly lowered, and the point at which the pulsation as evidenced by the fluctuations of the index reappears is read as the systolic pressure. Systematic comparisons between this apparatus and the Riva-Rocci instrument gave readings that were consistently higher for the former; the difference usually being in the neighborhood of 10 mm.

Stillmark claims as the chief advantage of his instrument that no rubber is used in its construction, and that it is therefore practically indestructible under ordinary use, and that inaccuracies due to variations in the elasticity of the rubber components of the usual sphygmomanometer are eliminated. The instrument consists of a lever with unequal arms, the shorter of which is provided with a weight of 500 g. and has projecting from its lower surface a short vertical arm bearing a conical knob intended to serve for the compression of the vessel. The long arm of the lever is provided with a graduated scale and a sliding weight. At its extremity is a concave mirror having a focus of about 3 m. The instrument is used by placing a weight at the short end of the lever sufficiently great to cause complete obliteration of the patient's radial pulse. As an index of this the image of a lamp reflected by the concave mirror remains motionless. The sliding weight is now moved along the long arm until the blood wave just overcomes the compressing force, as is shown by a sudden oscillation of the light image. By means of a formula, the result in grams obtained in this way can be transposed into millimeters of mercury.

In regard to the first instrument, it may be said that it is somewhat questionable whether the advantage of measuring the end pressure instead of the lateral pressure is sufficiently great to offset the increased complexity of apparatus which it entails. Stillmark's instrument also does not appear to offer very decided advantages since it is open to serious criticism on the score of the fundamental principle of its construction, and certainly it is not adapted for use at the bedside.

OPERATIVE TREATMENT OF CARCINOMA OF THE STOMACH.

The operative treatment of carcinoma of the stomach may be radical or palliative, but unfortunately the mode of procedure can be decided upon only when the abdomen is opened, for only then can we see whether there are metastatic nodules in the liver or peritoneum. An exploratory laparotomy is indicated in almost all cases, but the only successful treatment is radical removal of the new growth. Of late the indications for radical removal have certainly become more numerous, as a few statistics go to show. From 1881 to 1898 Broquet operated in 52 cases; from 1898 to 1904 Matti made 45 resections of the stomach; and now Kocher, in an article in the *Correspondenz-Blatt für Schweizer Aerzte*, No. 9, 1907, reports 25 cases covering a period of only 2½ years. As regards the mortality, Broquet's was 34.6 per cent., Matti's 17.7 per cent., while Kocher had only four deaths, or a mortality of 16 per cent. In three of the latter's cases, the transverse colon was involved and required resection; in the fourth fatal case an abscess of the pancreas existed as a complication. Two advanced cases, with resection of the transverse colon, and the remaining nineteen uncomplicated cases of Kocher all terminated in recovery. As regards radical cure, much depends upon the possibility of making an early diagnosis. Makkas, in a series of 130 cases, reported a radical cure (*i.e.* freedom from recurrence three years after operation) in 18.4 per cent.; Matti reported 19.3 per cent. cured out of 95 patients operated upon, or 26 per cent. of those who survived the operation.

Kocher believes that the method of operation is of importance as regards both mortality and radical cure. Guinard collected statistics of 291 pylorus resections, of which 148 were performed according to the Billroth method No. 1, with a mortality of 35.3 per cent., and 64 according to Kocher, with a mortality of only 15.6 per cent.

Matti reported 97 resections (1881 to 1904), of which 71 were done according to Kocher, with a mortality of 16.9 per cent. Of the 25 cases reported by Kocher himself, 21 were operated upon according to his own method, with a mortality of 9.5 per cent. Of the patients reported radically cured by Matti, all but three were operated on by the Kocher method, *i.e.* a gastroduodenostomy was done each time when the pylorus was involved, a sure sign that recurrences do not appear in the duodenum, in spite of the arguments of the opponents of this method, who claim that enough tissue cannot be removed. According to Kocher the duodenum can be made more movable by cutting the parietal peritoneum on its right side. Furthermore, if a gastrojejunostomy is performed, the duodenum and stomach must first be closed separately, and through poor closure numerous patients have

died. Resection with gastroduodenostomy brings about more natural conditions than the other operative procedures, which explains the fact that patients feel well soon after the operation, and remain in good health for some time, even though recurrences take place.

Lead Poisoning from Encapsulated Projectiles.

It is ordinarily considered that aside from the possible mechanical disturbances they may induce, projectiles encapsulated in the tissues are more or less harmless. The possibility of systemic lead poisoning from this source is hardly thought of, though it is a rare, but still occasionally occurring, contingency. Braatz (*Münchener medizinische Wochenschrift*, May 28, 1907) has discovered records of six such cases, from a study of which it appears that neither the length of time that the tissues have harbored the foreign body nor the amount of metallic lead present is of importance in regard to the development of symptoms of plumbism. In making the diagnosis the blood examination is of the greatest value, and the detection of basophilic granules in the red cells, as described by Grawitz, affords a valuable diagnostic hint, providing that the few other conditions leading to this appearance, such as malignant disease, pernicious anemia, sepsis, and malaria, can be excluded. While the remote danger of plumbism will probably not cause any modification in the surgical maxim not to resort to extreme measures in endeavors to remove more or less inaccessible projectiles, it is evidently the part of wisdom to examine the blood with this idea in view in cases of obscure illness occurring in those known to be the carriers of such foreign bodies, and if indications of lead absorption are present to proceed at once to operation for removal of the offending body.

The Public Attitude Toward Consumptives.

An editorial in the *Lancet* of June 8, 1907, calls attention to a timely article in the *Westminster Gazette* by Mr. A. K. McClure, who, writing under the heading "Panic and Prejudice," says that a wider recognition of the fact that infection is chiefly conveyed by careless expectoration, would "do far more to prevent the spread of consumption than the callous ignorance which brands all consumptives as outcasts." This callous ignorance is already working hardships on many patients who are intelligent, fully understand their potential danger to the community, and most carefully observe every sanitary precaution. Many health resorts are already closed to them. Mere pleasure seekers appear to have ordained that all sufferers from tuberculosis who leave home must go to some sanatorium, whether they want to or ought to, or not. Persons who have the disease in a slight degree, and are careful, are discharged from their positions, forced to leave the wage-earners' ranks, and thus become dependent. The profession has labored long and earnestly to inform the laity of the dangers of the disease, but as so frequently happens the latter have misinterpreted the advice and drawn conclusions which are working an injustice to many worthy persons. How to adjust the balance is a very urgent problem before the numerous agencies now engaged in combating tuberculosis. We feel that much of the present unreasoning alarm is due to loose statements in some of the daily journals, and might be corrected by a more temperate and careful treatment of the subject in these organs of public opinion.

An Operation for Prolapsus Uteri.

At a recent meeting of the British Gynecological Society, Dr. Macnaughton-Jones presented for Prof. Jacobs of Brussels a paper (*British Medical Journal*, April 20, 1907) describing a radical treatment for prolapsus uteri as tried in seventy-seven cases, the ages of the patients averaging from forty-three to seventy-one years. The operation was named abdominal colpopexy, and consisted in exposing the uterus by a median incision and then exercising strong traction on it in an upward direction. The uterus was then carefully released from its attachments until held only by the vagina. Section of the latter was then made at a point lower or higher, according as the prolapse was pronounced, by V-shaped anterior and posterior incisions with widely separated limbs above at the junction of the vagina and the uterus. The margins of the incisions were then united by sutures, the knots turned into the vagina, and the pelvic floor reconstructed by whipping together the cut surfaces of the broad and round ligaments on each side so as to unite them above the newly formed vaginal vault. To prevent any return of prolapse the round and uterosacral ligaments on both sides were united to the vaginal stump, which was thus raised up in the middle of the pelvic cavity. The results in the small number of cases in which the operation was tried do not seem to have been very encouraging, as a perfect mass was obtained in but one case out of seven. In five cases there was a slight relapse consisting in cystocele with prolapse of the anterior vaginal wall, and one patient died from stomachic causes.

Exploratory Puncture of the Brain.

Operations for the relief of cerebral tumors are very often unsuccessful because the operation is not undertaken until the growth has extended beyond all hope of complete removal. Had a diagnosis been made earlier the result might have been different, but statistics show that in from twenty to thirty per cent. of all the cases a mistake is made in the diagnosis of the locality in which the tumor is situated. The successful surgical treatment of cerebral neoplasms depends principally on the perfection of diagnostic methods. Pfeiffer (*Archiv für Psychiatrie und Nervenkrankheiten*, Vol. 42, No. 2) considers that exploratory puncture of the brain affords the best means of determining the status of the case. He reports five instances in which a satisfactory early diagnosis was made, the exact locality of the lesion being determined. Naturally the results obtained by this procedure must be supported by a careful neurological examination and a clinical localization of the growth. In such cases cerebral puncture is practically without danger and affords a means of differentiating a tumor from other conditions present in the cranium, particularly hydrocephalus, whether external or internal. The fluid from a cyst or distended ventricle may also be evacuated by this means, and thus the latter becomes in effect a therapeutic as well as a diagnostic measure.

Low Arterial Tension as a Diagnostic Sign of Renal Tuberculosis.

Many investigators have found a lowered arterial tension in patients affected with tuberculosis of the lungs, and there seems to be no reason why the same condition should not be present in patients with

tuberculosis of other organs. K. Reitter (*Zeitschrift für klinische Medizin*, Vol. 62) found a constantly lowered arterial tension in a patient who showed all the symptoms of a chronic parenchymatous nephritis, but later turned out to have a tuberculous kidney. After this experience he tested the blood pressure in ten undisputed cases of tuberculous kidney, and found the arterial tension diminished in all. Control tests in cases of nontuberculous pyuria showed no such diminished tension. His examinations led him to conclude that the urine of all patients suffering from kidney disease, whose arterial tension is at the same time lowered, should be examined for tubercle bacilli.

News of the Week.

Quiet for the Hospitals.—At the instance of the Society for the Suppression of Unnecessary Noises, of which Mrs. Isaac L. Rice is president, Alderman Sullivan recently introduced an ordinance providing that signs, reading "Hospital Street," be placed at the corners of all streets on which hospitals are situated. The areas bounded by these signs will be known as hospital zones, and within them drivers will be compelled to walk their horses, motormen must send their cars as slowly and quietly as possible and refrain from clanging the gongs or suddenly applying the brakes except in case of absolute necessity, hucksters will not be allowed to cry their wares, the hurdy-gurdy and the hand-organ will be silenced, newsboys must refrain from calling their extras, and children and hoodlums will be kept away. The plan has the indorsement of Police Commissioner Bingham, who will see that the law is enforced, and of Health Commissioner Darlington. Fourteen hospital superintendents signed a petition urging the passage of the ordinance, which went through without serious opposition. Anyone making unnecessary noises within these areas of silence will be liable to a fine of $10.

Institute of Pathology for the City Hospital.—Mrs. Russell Sage has given the sum of $300,000 to found an adjunct to the City Hospital on Blackwell's Island to be known as the Russell Sage Institute of Pathology. It was largely through the efforts of Dr. T. C. Janeway that the desirability of establishing such fund was brought before Mrs. Sage, and the new institute is to be organized according to the plans and under the direction of Drs. E. G. and T. C. Janeway, with whom are to be associated on the Board of Trustees, as *ex-officio* members, the Commissioner of Public Charities of the City of New York and the President of the Medical Board of the City Hospital, and as individual members Dr. D. Bryson Delavan, Dr. Simon Flexner, and Prof. Graham Lusk. One of the objects of the institute will be to make use of the unexampled material of the city institutions on Blackwell's Island for the purpose of investigating heart and kidney diseases and the other morbid conditions attendant on advanced age.

Pasteurization of Milk.—In a report recently issued with the indorsement of the Secretary of Agriculture, the pasteurization of all milk is strongly advocated. The advantages and disadvantages have been studied by Dr. M. J. Rosenau, Director of the Hygienic Laboratory of the Public Health and Marine Hospital Service, and in his opinion the advantages so far outweigh the disadvantages that he "unhesitatingly recommends compulsory pasteurization of all milk not certified." Even in the case of certified milk home pasteurization is urged in order to guard against the slight risk of occasional contamination.

Health in the Canal Zone.—According to the latest report of Col. Gorgas to the Canal Commission, the health conditions in the Zone are better than ever before. The largest percentage of malaria for any week in the month of May was 65-100 of 1 per cent., and it has been as low as 52-100 of 1 per cent. The percentage of all disease has ranged from a minimum of 96-100 of 1 per cent. to 1 1-10 per cent. The prolonged dry season and the late beginning of the general summer rains have been productive of conditions unusually favorable to the rapid breeding of mosquitos, so that it has been necessary to carry out the work of mosquito extermination with greater activity than ever before.

New York City's New Water Supply.—On June 20 the work of excavation for the Catskill Aqueduct of the city's new water supply system was formally begun by Mayor McClellan at a point about two miles from the town of Cold Spring. The water is to come from the three reservoirs up in the Catskills in aqueducts which will pass under the Hudson at Storm King at a depth of about 700 feet and come up at Breakneck on the other side of the river. From here they will cross gullies and pierce hills in three conduits which enter the ground at the spot where the formal excavation was started. The new system is designed to deliver 600,000,000 gallons daily, and its estimated cost is $161,000,000.

Ambulance Accidents.—A Lebanon Hospital ambulance, in charge of Dr. Rottnoss, was run into by a junk wagon at the corner of Brook avenue and Westchester avenue and overturned, and wrecked. The patient, a child with meningitis, and the surgeon were thrown into the street, and the child died a few minutes later. An ambulance of the Hudson Street Hospital, in charge of Dr. Elliott C. Burrowes, was smashed at West Broadway and Worth street by a collision with a trolley car. The surgeon and driver were badly bruised and cut and the horse was killed.

St. John's Guild Ship and Hospital.—The St. John's Guild floating hospital, the *Helen C. Juilliard*, has been thoroughly renovated since last year, and will begin its regular work on July 5. The Guild's Seaside Hospital at New Dorp, Staten Island, is also ready for the summer season.

Civil Service Examinations.—The State Civil Service Commission will hold examinations July 13, 1907, for the following positions: Assistant in Clinical Laboratory, Manhattan State Hospital, $900 and maintenance; Medical Inspector of Factories, $2,400; Trained Nurse, State Institutions (men and women), $420 to $600 and maintenance; Woman Physician, State Hospitals and Institutions, $1,000 and maintenance. The last day for filing applications for these positions is July 6. Full information and application forms may be obtained by addressing Mr. Charles S. Fowler, Chief Examiner of the Commission in Albany.

St. Vincent de Paul Fresh Air Farm.—The children's free summer vacation season at the St. Vincent de Paul Fresh Air Farm at Spring Valley was opened on June 18 with a party of about 200 younger children from the day nurseries. The first party of school children will go on July 5, and the season will close late in September, when another party of children will be sent.

Automobile Accidents in Germany.—The Imperial German Statistical Bureau has published figures showing that on January 1 there were 27,926

automobiles in the country. According to these figures in the half year ended September 30 last there were 2,290 automobile accidents in Germany, of which 673 caused injury to persons. The number of persons killed and injured amounted to 1,570, including 51 killed. Of the latter, 9 were chauffeurs, 9 passengers of automobiles, and 33 other persons. In 1,024 cases the cause of the accident was determined, and in 478 of these too rapid running or failure to give the alarm signal was given as the cause, while 220 were caused by unskillful steering, 26 through disregard of stop signals, 53 through failure of brakes, 174 through lack of proper precaution on the part of persons in the streets or roads, 48 through slippery pavements, 20 through breakage of parts of the machine, and 5 through explosions. Suits were brought in the courts in 695 cases, and of these 625 were against chauffeurs.

Optometry Bill.—At the hearing on this bill before Governor Hughes last week, the measure was strongly opposed by the State Medical Society through Dr. H. L. Shaw of Albany, and others. The Governor reserved decision on the bill.

Opium Restriction in Shanghai.—In accordance with the recent imperial decree against the consumption, sale, or cultivation of opium, the opium shops in the native quarter of Shanghai were closed on June 22, and similar action is soon to be taken in the surrounding districts. Contrary to expectation, no trouble was encountered from the populace.

To Quarantine Consumptives.—Dr. W. H. Brumby, State Health Officer of Texas, has announced his intention of issuing a proclamation quarantining all persons suffering from advanced tuberculosis.

Commencement Exercises of the Chicago College of Physicians and Surgeons.—These were held June 4, when a class of 165 was graduated, the degrees having been conferred by President Edmund J. James of the University of Illinois. The doctorate address was delivered by Rev. Rufus A. White.

A Medical Night School.—Under the title of the Hippocratean College of Medicine a night school for the study of medicine has been opened in St. Louis.

Dedication of Michael Reese Hospital.—This new hospital, recently built at a cost of more than $700,000, was dedicated and opened for the care of patients June 16. It is said that the new hospital will accommodate 300 patients and 100 nurses. It is six stories in height, fireproof throughout, and is fitted with every modern equipment.

A Hospital in Dover, N. J.—A number of the residents of Dover, N. J., are planning to establish a hospital in that place, and a committee has been appointed to devise ways and means of carrying out the project.

Sanatorium for Hebrew Children.—The sanatorium for Hebrew children at Rockaway Park, L. I., has been opened, and now has more than 200 inmates.

Dr. **James Packard Mann** has been elected professor of orthopedic surgery in the Medico-Chirurgical College of Philadelphia. He has held the position of clinical professor in the same branch for ten years.

Dr. **Harmon Smith** has been appointed Surgeon to the Throat Department of the Manhattan Eye, Ear, and Throat Hospital.

Ambulance for Beth Israel Hospital.—An ambulance costing $700 was presented to this hospital last week by an organization of young women and girls who had raised the necessary sum of money.

Greenport Hospital Opened.—The new hospital of the Eastern Long Island Hospital Association has been opened at Greenport and is ready for patients.

Chicago Medical Society.—The annual meeting of this Society was held June 19, 1907, with Dr. George W. Webster in the chair. Reports were received and read of the work done by the thirteen branches of the Society. Dr. Harold N. Moyer reported that the Medico-Legal Committee had considered seventy-nine items. He used the word items advisedly because they could not be dignified as suits. These items varied all the way from complaints to threats and suits of malpractice. In four cases the committee won after legal battles. The committee had disposed definitely of eight cases, and he thought that nine-tenths of the others would not be heard of again. No judgment had been rendered against a doctor for malpractice in Cook County, and no compromise had been made by the committee in any malpractice case in four years, excepting in three instances. In one of these, clearly a malpractice suit, although trivial, liability was certain. The other two cases were disposed of in an amicable manner. The following officers were elected for the ensuing year: *President,* Dr. H. B. Favill; *Secretary,* Dr. Robert T. Gillmore; *Councillors for three years,* Drs. Adolph Gehrmann, William L. Noble, George Bell, Frank X. Walls, and William L. Baum; *Alternates for three years,* Drs. Heman Spalding, Charles E. Paddock, A. B. Keyes, W. E. Pickard, and E. C. Riebel.

Franklin County (Vt.) Medical Society.—At the annual meeting of this society, held in St. Albans on June 5, the election of officers resulted as follows: *President,* Dr. F. S. Hutchinson of Enosburg Falls; *Vice-President,* Dr. A. L. Cross of Swanton; *Secretary and Treasurer,* Dr. E. A. Hyatt of St. Albans.

Maine State Medical Association.—At the annual meeting of this organization held on June 13 in Portland these officers were elected: *President,* Dr. B. B. Fuller of Portland; *Vice-President,* Dr. Albert D. Sawyer of Fort Fairfield and Dr. O. C. S. Davies of Portland; *Secretary,* Dr. Walter L. Tobie of Portland; *Treasurer,* Dr. Arthur S. Gillson of Portland.

Rhode Island State Medical Association.—The ninety-sixth annual meeting of this association was held in Providence on June 13. The officers elected for the ensuing year were as follows: *President,* Dr. C. V. Chapin; *Vice-Presidents,* Dr. F. B. Fuller and Dr. Eugene Kingman; *Secretary,* Dr. S. A. Welch; *Treasurer,* Dr. G. S. Mathews.

Chattahoochee Valley Medical and Surgical Association.—The semi-annual meeting of this organization will be held at Opelika, Ala., July 9 and 10, 1907. Dr. J. A. Goggans of Alexander City is the *President* and Dr. W. J. Love of Opelika is the *Secretary.*

New Haven County (Conn.) Anti-Tuberculosis Association.—At a meeting of this society, held in New Haven on June 13, the following were elected officers for the ensuing year: *President,* Dr. Francis Bacon; *Vice-Presidents,* Professor Henry W. Farnam, Dr. C. W. Gaylord, and Dr. H. L. Swain; *Recording Secretary,* Professor Irving Fisher; *Financial Secretary,* E. L. Chapman; *Treasurer,* W. Perry Curtiss.

Obituary Notes.—Dr. Charles L. Mullholland of Brooklyn died on June 18 at his home in that city. He had practised for many years in the lower section of Brooklyn and was a graduate of St. John's College and the University of New York.

Dr. Willard Parker died at his home in this city on June 24. He was a graduate in arts of Columbia College in 1866, and in medicine of the College of Physicians and Surgeons in 1870. He was a son of the late Dr. Willard Parker, who was for years a leader of the profession in this city, one of the first American surgeons to operate for appendicitis, and the organizer of the first college clinic in this country. Dr. Parker was buried at New Canaan, Conn., on Thursday of this week.

Dr. Thomas Hill of Brooklyn died on June 20, at the age of sixty-two years. He was born in Ireland and was a graduate of Niagara University.

Dr. S. H. Frazier of Crescent, Mo., died suddenly at Lilbourn on June 8. He was graduated from a St. Louis college seven years ago.

Dr. George J. Bucknall of San Francisco died on June 11 at the age of seventy-one years. He was a native of New York State and had practised in San Francisco since 1856.

Dr. Edward H. Birckhead of Albemarle County, Va., died on June 14, at the age of forty-eight years. He was born in Proffit, Va., and received his medical education at the University of Virginia and the Bellevue Medical College, from which he was graduated in 1883.

Dr. Charles B. Gilbert of Washington, D. C., died on June 13, at the age of sixty years. He was born in Bath, Me., and received his medical education in Philadelphia. He had practised in Washington for over thirty years.

Dr. R. D. Wilkin of Cass County, Ia., died on June 6 after an illness of several weeks. He was sixty-nine years of age and had practised in the county since 1875.

Dr. C. L. Lewis of Nashville, Tenn., died suddenly on June 12, at the age of seventy-five years. He received his degree from the University of Virginia and had practised for many years in Nashville. A few years ago he retired from active work.

Dr. Arthur D. Hayes of Hartford, Conn., died on June 17 of tuberculosis, at the age of forty-one years. Dr. Hayes was born in Evansville, N. Y., and received his medical degree from the Dartmouth Medical College.

Dr. Henry E. Muhlenberg died at Lancaster, Pa., on June 17, at the age of fifty-seven years. He was descended from a long line of distinguished physicians and ministers. As a young man he entered the U. S. Naval Academy as a cadet, but he resigned before he had fully completed the course of study. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1871 and entered the U. S. Marine Hospital Service, from which, however, he resigned after four years to enter upon the practice of medicine in his native city of Lancaster. He was in time elected to City Councils and in 1900 Mayor of Lancaster.

Dr. Charles J. Schulze, the oldest practising physician in Bucks County, died at Reading, Pa., on June 16, at the age of eighty-nine years. He was a native of Germany and was a graduate of the University of Greifswald in 1846.

Dr. Israel Hart of Pennington, N. J., died on June 23, at the age of seventy-nine years. He practised medicine in Pennington until 1863, when he was appointed assistant surgeon in the army, where he remained until the close of the war. He then returned home and continued in practice until a few years ago.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent

GENERAL MEDICAL COUNCIL — HOSPITAL ABUSE — CHARITY ORGANIZATIONS' CONFERENCE — MYELOPATHIC TRICHOSIS — PERSISTENT URINARY FISTULA—PROLONGED PYREXIA—HEART-BLOCK—ITEMS—OBITUARY.

London, June 7, 1907.

The session of the General Medical Council was concluded within the week. The proceedings, subsequent to those I mentioned in my last, comprised a good deal of penal business, a discussion on the teachings of midwifery and gynecology, examination on these subjects, the presentation of reports of committees, and the usual closing formalities.

The question of medical and dental practice by companies has passed from the Council to Parliament, and on Monday the select committee of the House of Lords began to take evidence upon the bill. The president of the Council and Mr. Tomes gave evidence, and the committee examined some other witnesses yesterday and adjourned.

Last night the Metropolitan Branch of the B. M. A. held a meeting respecting hospital abuse. By dint of an urgent whip a fair attendance was obtained, and a resolution passed that a Central Hospital Authority for London should be constituted, on which the profession should be adequately represented. Drs. Knowsley Sibley, Lewiston Shaw, Forbes Ross, Southcombe, McCann, Heslip, F. J. Smith, Roche, Surgeon-Colonel Myers, and Mr. D'Arcy Power took part in the proceedings. Some other meetings have taken place in support of this view, but what will be the result is very uncertain. The British Medical Association will, no doubt, make every effort to dominate any representation the profession may obtain. That may not be much, considering how the lay element has hitherto monopolized all power.

The Charity Organization Societies have been holding a conference at Norwich, when the abuse of hospitals, the work of provident dispensaries, and kindred topics were discussed. In a paper, read by Lieutenant-Colonel Montefiore in place of Dr. Gray, who was detained in London, the cooperation between hospitals and dispensaries was held to be most important, but to attain the object many more provident dispensaries are required. The plan of appointing almoners, or inquiry officers, was commended. It was, however, said that at present many patients, finding such an officer at a hospital, left it and went to another where inconvenient inquiries were not made. When almoners are appointed at all hospitals their value will be realized. It was further said that cooperation between dispensaries should be general, so that a member having to move to another district could be transferred without loss of benefit. Dr. Beverley of Norwich said the working classes had for so many years had recourse to hospitals that they had ceased to regard themselves as objects of charity, to which the present rates of wages did not entitle them. He had had abundant opportunity of seeing the abuse of hospitals, both in London and the provinces.

Dr. Ballance gave the particulars of the working of the Norwich Public Medical Service, a society instituted to provide the working classes with attendance in sickness. The class they desired to aid was that just below the one that could pay minimum medical fees. Such people would be thrust on charity in illness, unless they had provided by contract for the help they needed in illness. The society was entirely provident—had no contributions from outside. There was no wish to impose a wage limit on entrance, but it found that some who benefited from the society when poor, and afterward became better off, would go on obtaining medical attendance at the trivial contribution when they could afford to pay a general practitioner.

Mr. Henderson raised the socialist issue, asserting that the whole thing should be put on the basis of citizenship, and every citizen who liked be able to avail himself of a public medical service. He was supported by a clergyman, when Mr. Loch protested that such a thing would be an extended poor law and the antithesis of the history of medical relief in this country. Mr. Day said if charity was bad so was the work of the provincial medical societies. This part of the discussion was, on further protest, ruled out of order; but on another day Mr. Henderson returned to the attack and said that Mr. Loch and the organization society only persecuted the shabby, begging-letter imposters, while landowners did the same thing in a wholesale way.

Sir Wm. Gowers has contributed to the Medico-Chirurgical a rare case of cervical myelopathic trichosis in a man of 41. Unequivocal symptoms of syringomyelia were associated with a growth of hair, which occupied a triangle, of which the inner side was along the middle line of the spine from the sixth cervical to the third dorsal vertebra. It

extended at one point nearly two inches from the spine. The condition, he said, pointed to a disproportion between the inner and outer layers of the epiblast in the lower cervical region. A notable feature was that the growth of hair was of greatest vertical extent at the middle line, corresponding to the edge of the neural ridge of the epiblast. Had the other side been affected also the area of trichosis would have presented a lozenge-shape, which was strikingly present in some of the recorded cases of lumbar trichosis in spina bifida occulta.

Mr. Haward, president, mentioned a case in which no defect in the vertebræ was detected, but the patient had loss of power and talipes, loss of sensation, and a great tendency to ulceration of the toes, leading to exposure of bone, requiring removal of the toes. The patient, now a young man, is still troubled with ulceration and discomfort of the foot.

Mr. Pernst thought the case must be unique. There were however, cases of artificial hypertrichosis recorded—one in which it followed an injury to a nerve in one upper limb.

Dr. Grainger Stewart had seen a similar case, under Dr. Ormerod, in a miner who had wasting and weakness of the right arm, with spasticity of that and both lower limbs. He had also dissociated sensibility. The seventh cervical spine was suspiciously prominent, and when a baby he had had a growth of hair in the cervical region, with a bag-like formation. It was thought the seventh spine was bifid. There was a scar in the middle line, or slightly to the right 1½ inches broad.

Sir William Gowers remarked that he doubted whether a bag connected with the spinal canal could fail to prevent closure of the arches.

A paper was then read by Major M. P. Holt on a case of persistent urinary renal fistula. Rupture of the kidney had been followed by extensive suppurations, and attempts to perform nephrectomy had had to be abandoned on account of furious hemorrhage. Supposing the secretion of urine in the abscess to be the sole hindrance to healing, Major Holt ligated all the renal vessels on that side through the transperitoneal route. Within five days urine ceased to be present in the discharge, and by the fifty-seventh day the sinus was completely healed—after two and three-fourth years' persistence. The patient has remained quite well up to the present time, nearly two years since the operation.

The concluding annual meeting of the Clinical Society was held on the 24th ult., prior to a special general meeting, when the final arrangements will be made for its becoming the Clinical Section of the Royal Society of Medicine.

Dr. de Haviland Hall read notes of two cases of prolonged pyrexia, one connected with tuberculosis, the other with ulcerative endocarditis. It was remarked that these were the most frequent causes, and in arriving at a diagnosis the family history was important. On the one hand hemoptysis, enlarged glands, and other suspicious symptoms in near relatives suggested tubercle, while a rheumatic family history pointed to the possibility of endocarditis. This would be more likely if the patient had been attacked with acute rheumatism, followed by cardiac trouble.

Dr. Sidney Phillips had turned to the list prepared by Murchison of conditions accompanied by continuous pyrexia; he found syphilis named. So, in a doubtful case, he had given mercury and the temperature at once fell. Ulcerative arteritis without endocarditis was another cause; so was ulcerative colitis.

Dr. Walter Carr mentioned a case in which no cause could be assigned, when insensibility suddenly supervened, and death in four days. A mass of vegetation was found at the post mortem on the mitral valve, which had caused no murmur during life. Dr. Box cited a case connected with basic meningitis, and Dr. Glover one of rheumatic origin.

Dr. A. M. Gossage read a paper on heart-block, and illustrated it by sphygmographic tracings on the screen. He pointed out that conductivity might be affected separately from other functions of cardiac muscle and that depression of conductivity showed itself in the fibers which connect the auricles and ventricles. Such depression was illustrated by tracings showing a lengthening of the normal interval between the contraction of the auricles and ventricles. Still further depression was shown by the dropping out of ventricular beats. This might occur as an effect of digitalis or be due to the action of the vagus. Tracings were exhibited where there were three auricular beats to every two ventricular, two auricular to one ventricular, and three auricular to one ventricular.

A new medical scholarship at Oxford, of the value of £100 a year, tenable for four years, has been founded by Dr. C. Theodore Williams.

The late Lady Kortright has left to the London Hospital £10,000, and also a share in her residuary estate.

Sir T. Barlow presided on Wednesday evening at a meeting on behalf of the Medical Missions of the Wesleyan Methodist Society. He announced a gift of £500 from a friend of the society toward a new hospital in Central China. Mr. Pearce Gould said nothing broke down the prejudice and superstition of heathen races so much as medical skill, combined with Christian charity and kindness. Dr. J. B. Hellier maintained that it was the presence of medical missionaries in lands like China that made it possible for other missionaries to be there.

Dr. Maxwell Tylden Masters, whose death has occurred at the age of 74 from heart failure, although he practised medicine for some years, was best known as a botanist. For forty-one years he edited the *Gardeners' Chronicle*, in which his most important contributions to botany appeared. From 1865 to 1868 he lectured on the subject at St. George's Hospital. He also served as an examiner at the London University. He was a fellow of a number of learned societies, including the Royal and the Linnean, an officer of the Leopold Order, and a corresponding member of the Institute of France. He took L.S.A., 1854; M.R.C.S., 1856, and M.D.St.And., 1862.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

SURGERY OF THE HEART—SURGERY OF THE VESSELS—PULMONARY SURGERY—SURGERY OF THE LIVER—FRACTURES OF THE THIGH—HYPERTROPHY OF THE PROSTATE—CONGRESS OF THE ROENTGEN RAY SOCIETY.

BERLIN, May 15, 1907.

A FEW notes relative to the Surgical Congress held last month may be of interest.

A review of the subject of surgery of the heart was given by Rehn of Frankfurt, who was the first to perform suture of this organ, and was able to report 124 cases. In regard to the operative technique, he said that any tendency to stereotyped methods was to be deprecated, and the main object was to avoid injury to the pleura and to make the incision in such a way as to render satisfactory drainage possible. If the hemorrhage was abundant compression of the venous trunks leading to the right auricle might be tried. Interrupted sutures of fine silk and cylindrical needles were most satisfactory. Sauerbruch of Greifswald explained that pneumothorax in cases of heart injury at first had a hemostatic effect, but later induced cardiac weakness, and he therefore recommended the use of the pneumatic cabinet for such operations. Numerous speakers recommended resort to cardiac massage through a laparotomy wound in cases of chloroform syncope.

To the subject of surgery of the vascular system, Lexer of Königsberg contributed reports of two cases, in one of which after extirpating an aneurysmal sac he had been able to do an end-to-end anastomosis of the popliteal artery, and in the other he had restored the continuity of the subclavian artery through implantation of a piece of the patient's saphenous vein. Küttner of Marburg reported two cases of splenectomy, one of which was for a gunshot wound, while the other was one of extirpation of a greatly enlarged spleen in myelogenous leukemia. In the first case polycythemia resulted, but in the other there was no effect on the blood picture.

Friedrich of Greifswald discussed the surgery of the lungs, and said that echinococcus, pulmonary abscess, and gangrene afforded the best opportunities for operative interference. The operation should be performed at one session and the incision should be made with a knife rather than with the cautery. As the prognosis is good in acute cases, the results should be satisfactory in about 70 per cent. Injuries should be treated expectantly. Several speakers spoke in favor of the Brauer method of hyperpressure for use in operations on the lung. Gluck of Berlin presented a patient from whom ten years previously he had resected the entire lower lobe of one lung. Sinuses after pulmonary operations or injuries were discussed by Garré of Breslau, who said that, like bronchiectases, they were often very difficult to cure. In chronic cases extensive resection was often necessary. Lenhartz of Hamburg reported eighty-five cases of gangrene with fifty-three cures, and five abscesses with four cures. The presence of globules of fat in the sputum in 05 per cent. of the cases points to the presence of a new growth. Brauer of Marburg reported good results from the induction of artificial pneumothorax in cases of contraction of the pleura such as accompanies pulmonary tuberculosis. Schlange of Hanover has treated severe hemorrhage from tuberculous cavities by resecting the third rib and packing the resulting opening.

In discussing surgery of the liver and bile passages, Sprengel of Braunschweig described the formation of a

retroperitoneal abscess secondary to perforation of the cystic duct by a stone, and expressed the opinion that such an occurrence was not uncommon. Anschutz of Breslau reported twenty cases of resection of the liver and said that the danger of hemorrhage was not very great, for the operation itself had never caused death in his experience. In resecting small portions the vessels are ligated, but if larger areas are to be removed the tissues must be tied off *en masse*, the ligatures being slowly tightened. By incising the triangular ligament and resecting the costal arch the operative field is rendered much more accessible.

The treatment of fractures of the thigh was discussed by Bardenheuer of Cologne, who recommended his method of multiple extension with heavy weights. In 179 cases of this sort, union was secured without shortening in 159. König of Altona was in favor of operative interference, especially in dealing with younger patients. In the discussion it was stated that results like those of Bardenheuer could be obtained only by the closest attention to the details of the method, which preferably should be learned in Bardenheuer's own clinic.

Kümmell of Hamburg stated that in hypertrophy of the prostate operation was indicated only in the severest cases that required frequent catheterization, in which the bladder was infected, or stones were present. Prostatectomy was to be preferred to all other methods on account of the freedom from relapses. In most cases the vesical route was preferable to the perineal operation. His mortality was 22 per cent. Most of the speakers were in favor of suprapubic prostatectomy and recommended local and lumbar anesthesia. Pulmonary emboli from the prostatic plexus were a frequent cause of death. Rovsing of Copenhagen resorts to prostatectomy only after resection of the vas or the formation of a vesical fistula has been without result. This speaker has also performed total extirpation of the bladder in three cases of carcinoma, the urine being collected in a satisfactory manner in a suitable apparatus.

The third Congress of the German Roentgen Ray Society expressed the official opinion that the use of the Roentgen rays for diagnostic and therapeutic purposes by individuals not qualified as physicians was an infraction of the laws regulating medical practice. It was also decided that in therapeutic radiations the degree of hardness of the tubes used should be noted, and one of the approved direct or indirect methods of measurement of the rays should be employed. A case of death after insufflation of oxygen into the knee joint was reported by Jacobsohn of Breslau. A few hours after the procedure cyanosis and death occurred. No gas emboli could be discovered, though it is possible that the oxygen might have been absorbed before the autopsy, which was not performed until twenty-four hours after death. Holzknecht of Vienna reported a similar case in which a considerable amount of gas was found in the heart. In regard to the value of the Roentgen rays in the diagnosis of brain tumors, it was concluded that in this direction there was but little to be hoped for from their use. Krause of Breslau stated that metabolism was modified through the Roentgen rays and that healthy persons when exposed to them acquired a hyperleucocytosis followed by a leucopenia. Forsterling found that the limbs of young animals exposed to the rays were backward in growth. By exposing the head to the rays the development of the entire body of the animal was impaired. Hahn of Hamburg had treated two boys for lupus, and found, as a result, that one-half of the face remained smaller than the other and that the development of the teeth was defective. Köhler of Wiesbaden presented cinematographic presentations of the act of respiration; these pictures had been obtained by taking separate views of the phases of the respiratory act and then combining these in the cinematograph.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

COLLECTING THE PHILIPPINE LEPERS—CHOLERA CASES TREATED AT THE SAN LAZARO HOSPITALS — LOCO-WEED DISEASE — QUARANTINE AGAINST CHINA—EXAMINATION OF THE MILK SUPPLY OF MANILA—A NAVAL HOSPITAL AT BAGUIO.

MANILA, P. I., May 1, 1907.

THE work which was recently undertaken by the Bureau of Health in concentrating the lepers upon the islands of Samar and Leyte for the purpose of transferring them to the Culion leper colony, located on the island of Culion, afforded considerable additional evidence that the number of lepers in the Philippines is probably not as high as has been thought heretofore to have been the case. In order that the matter might be placed on a definite, scientific basis, the steamer which was sent out for the purpose of collecting the lepers was fully equipped with a bacteriological outfit, and several competent microscopists accompanied it for the purpose of making microscopical examinations of all cases before they were taken aboard, and also for the purpose of studying some of the skin lesions which are so frequently encountered, and many of which have no doubt been erroneously classed as leprous. In this way the mistake of taking nonleprous persons from their homes and segregating them in the Culion colony was avoided, while at the same time none of those actually infected with the lepra bacillus were left behind to serve as centers of infection.

In order to aid this work as much as possible, and with the hope of having an opportunity to see as many of the skin lesions as possible, instructions were sent out in advance to the local officials to have all present themselves for microscopical examination who showed any evidence, even though slight, of being afflicted with leprosy, or who had any ulcers or contractions of any sort. In this way several hundred persons were brought, who, in many cases presented a most repulsive appearance, but who, on careful examination, were found to be afflicted with tropical ulcers, phagedenas, or syphilis. Quite a number of cases of the latter were found, particularly on the island of Samar, at places where troops had been stationed heretofore. The spirochete was demonstrated in quite a number of cases.

In concentrating the lepers no serious difficulty was encountered, and so far this feature of the work has given rise to less friction than would ordinarily be expected to be the case. This attitude of the people is, however, no doubt largely brought about by the excellent accommodations and care that is given the lepers at Culion. In the great majority of cases they, no doubt, have better houses, better clothing, and more food than they enjoyed before their incarceration, and this, coupled with the fact that they are not compelled to work, has a strong tendency to make them contented. In this connection it is interesting to observe that the steady decrease in the number of lepers in the islands still seems to continue. For the quarter ended December 31, 1906, there were 3,225, and for the quarter ended March 31, 1907, there were 3,151 as against 3,580 reported August 31, 1905.

A review of the record of the cholera cases treated at the San Lazaro hospitals during the past year shows that of 100 cases in which the diagnosis was actually verified by laboratory methods, 46 had a temperature of normal or above, several reaching 103°, and 54 had a subnormal temperature. These figures would indicate that, while a subnormal temperature is an excellent symptom in making a diagnosis, yet it is not so certain as the average textbook would have it appear.

The regular monthly meeting of the Manila Medical Society was held at the St. Paul's Hospital on the evening of April 8. A case of Weil's disease was reported upon by Dr. Thornburg. Dr. H. T. Marshall, Pathologist of the Bureau of Science, read a paper on "The Loco-weed Disease in Sheep," from which he concluded that no such disease existed as a specific entity; that the term "loco-weed disease" was a name given to a number of different kinds of disorders that occurred in animals.

The United States Quarantine Service, on account of the appearance of plague in different places of China, and in accordance with the usual annual custom which has been observed since 1900, has declared a seven days' quarantine against vessels arriving from that country, which is to date from the time the disinfection is completed in the Philippines. It is provided, however, that vessels coming from ports in China at which regular officers of that Service are stationed, and when proper facilities for disinfection exist, that the quarantine will be waived. The quarantine became effective May 10, 1907.

About ten days ago the Bureau of Health started to make a systematic laboratory examination of the milk sold in the city of Manila. Reports of the analyses are being awaited with much interest.

Dr. H. G. Beyer, Medical Inspector and Fleet Surgeon, Asiatic Fleet, has proceeded to Baguio, Benguet, upon instructions of the Admiral of the Pacific Squadron, with a view to reporting upon the desirability of establishing a Naval Hospital or sanatorium at that Philippine health resort. It will be remembered that the Army and the Civil Government have already established hospitals at that place, and reports have been made from both these independent sources, which indicate that Baguio possesses great advantages for the cure of certain forms of tropical disease, and more particularly amebic dysentery.

The report of the committee which was named for the purpose of investigating the deaths which occurred at Bilibid prison among some prisoners who were inoculated by Dr. R. P. Strong is now in the hands of the Governor-General. It is generally understood that at least one report is favorable to Dr. Strong.

Progress of Medical Science.

New York Medical Journal, June 15, 1907.

Traumatism as an Etiological Factor in Appendicitis—This subject is considered at length by J. B. Deaver, whose conclusions are thus summarized: (1) From personal experience and from a study of the cases found in the literature the author does not consider that trauma is ever the direct exciting cause of acute appendicitis in a perfectly normal appendix. (2) He believes that an acute attack of appendicitis can follow a severe blow upon the abdomen or fall upon the abdomen, or be due to muscular contractions of the ileopsoas muscle in an appendix which has been previously inflamed only under the following conditions: (*a*) In a latent or residual abscess or extensive pathological lesion of the appendix, where the appendix does not occupy a deep pelvic position, but is in close proximity to the anterior abdominal wall, severe direct traumatism may precipitate an acute attack. (*b*) Strong contractions of the ileopsoas muscle cannot in my opinion be the immediate cause of an acute attack of appendicitis, where the appendix is chronically diseased or where it has extensive pathological lesions, unless it is firmly adherent to and not simply in apposition to the peritoneum overlying this muscle. (*c*) The degree of traumatism to be a factor in the causation of appendicitis must be direct and of considerable force; such force applied to the right iliac fossa may tear the underlying parietal peritoneum and so simulate an acute attack of appendicitis that only opening the abdomen and exposing the appendix could definitely settle the matter. (3) The acute attack of appendicitis of traumatic origin is observed more frequently in males than in females on account of their more active life and greater liability to injury and strains, and between the ages of ten and twenty-five years. (4) In an appendix previously diseased the liability to an acute attack of appendicitis supervening upon injury is in direct ratio to the degree of injury, and depends entirely upon the pathological changes present in the appendix at the time of injury. (5) He maintains that it is exceedingly rare to find a case of acute appendicitis in which it can be definitely stated that traumatism is the direct exciting factor. This statement is borne out by a review of 1,400 cases. (6) The mortality is very high in these cases, on account of (*a*) the failure to recognize the condition until the disease is well advanced, (*b*) the rapid gangrene and perforation which come on, and (*c*) the delay in operation. (7) The author strongly urges a more careful study of this class of cases, and insists as soon as a diagnosis has been made, upon an immediate operation if the best results are to be attained.

The Bubonic Plague As Seen in Siam.—Some notes are presented by C. S. Braddock, Jr., who was formerly the chief medical inspector of the Siamese Government. The disease presents no peculiarities in the locality named. The author considers that the best work done in checking its ravages in the Far East has been done by the American physicians in the Philippines. In his own attendance on plague cases he always used plenty of coal oil on his shoes, stockings, and leggings, as this kept the infecting fleas away. He also noted that the coolie employees of the oil companies did not contract the disease. The fleas leave an infected scab as soon as the animal dies, and are apt to settle on the pariah dogs. These are fed and petted by children, and among the latter the disease was especially common. One of the most effective measures to stop the disease after all disinfection and sanitation was accomplished was to wash all floors and furniture with crude coal oil, and sprinkle it with a watering pot in large quantities under the houses and over the ground in the vicinity. He never found medicine to be of any use. In the detention camps on his daily morning and evening rounds he always used quinine as a diagnostic agent. On examining suspects and finding any one with fever, either with or without pain or soreness in groin or axilla, he was at once given twenty to thirty grains of quinine at one dose. Six hours later if the fever was less in the slightest degree it was not plague. If the fever was higher it was plague, and the patient was at once sent to the detention hospital. In all of his patients this proved an infallible test.

The X-ray, Ultraviolet-ray, and High Frequency Currents in Diagnosis and Treatment.—S. Tousey gives a general description of these remedial agents from both the physical and therapeutic points of view. He calls attention among other matters to the importance of the proper quality of *x*-ray in therapeutics. He states that the least penetrating rays are arrested and absorbed by the skin. They produce a therapeutical or a pathological effect dependent upon the condition of the skin and the distance, intensity, duration, and frequency of the application. These soft rays, as they are called, are useful in treating eczema, psoriasis, ringworm of the scalp, and some cases of lupus and epithelioma. In some cases the tube may advantageously be regulated so as to produce only soft rays. They are the rays which produce *x*-ray burns, if the exposure is too great. These rays, which would be absorbed by the skin and would cause an *x*-ray burn in case of over exposure, may be arrested by interposing a piece of sole leather between the *x*-ray tube and the patient. Such a shield should always be used when making *x*-ray examinations and in *x*-ray treatment, especially about the face. This has reference to cases in which the tube has a medium degree of vacuum and is giving out rays of various degrees of penetration and in which the rays which are desired are those which will penetrate the flesh and produce a picture or an effect upon the deep tissues. Rays of medium penetration are beneficial in cancer, tuberculosis, leukemia, colitis, rheumatism, neuralgia, glandular swellings, and similar conditions. Rays of very great penetration are of little or no use for therapeutic or radiographic purposes, but overexposure to these will produce a dermatitis or even a periostitis.

Journal of the American Medical Association, June 22, 1907.

Sodium Cacodylate.—S. L. Dawes and H. C. Jackson found that sodium cacodylate could be detected in the urine after hypodermic injection of daily doses of from .050 to .200 gm. within periods ranging from ten to thirty-six days or more, and that organic arsenic was eliminated in two cases under observation in twenty-two and forty-four days respectively. The amount eliminated was small, and personal idiosyncrasy seemed to play a considerable part. The authors feel sure that cacodylic acid is deposited in the tissues. That such large doses are required to produce effects is undoubtedly due to the fact that the drug is only partially decomposed to inorganic arsenic, and the beneficial effects are to be ascribed to a self-regulation and automatic immunity which the organism acquires by the constant presence and new formation of arsenic of the inorganic type in the body. The production of arsenious or arsenic acid in a nascent state is probably not an unimportant factor, as in this condition smaller amounts of the ions become more active and give better results than arsenic given as such per os. It is not impossible, however, that cacodyl or its oxide, which is also produced, may have an action of its own, and not unlike that of the inorganic arsenic compounds. The blood picture when the drug is given is a very constant one. In anemic cases there is always an increase of hemoglobin, usually a small increase of red cells, but little variation in the number of whites; an increase in the percentage of polymorphonuclears and large mononuclears, with a corresponding decrease in the small mononuclears. In nonanemic cases there seems to be no special effect on the hemoglobin or red cells, but there is usually an increase of the polymorphonuclears. Therapeutic results in forty-five cases, including eczema, psoriasis, anemia of different types, Hodgkin's disease, gastralgia, and various neuroses, are reported. Thirty-four patients were cured or very much benefited, eleven were not helped, and two were apparently made worse. In several of the second class the dose used was probably too small and the technique faulty, they being among the first treated with the remedy. The authors' present practice is to dissolve the drug in the syringe with hot water just before injecting, as solutions do not seem to keep well. The effective dose in the reported cases seems to average between 0.05 and 0.15 gm., though very much larger ones were employed in one case of anemia reported.

Typhoid Perforations.—C. D. Selby remarks on the almost uniform fatality of typhoid perforation as compared with the better results obtained in the similar surgical condition of bowel perforation in appendicitis. Of the 400 cases of operation reported in the literature, recovery took place in 25 per cent. Nevertheless, it has been statistically demonstrated that the mortality from typhoid perforation runs from 8,000 to 16,000 annually in the United States. The conclusion inevitably follows that the vast majority of cases are either not diagnosed or diagnosed so late that operation is hopeless. The mitigating circumstances for the physician are that the text-books are not sufficiently definite on the subject; that the accident occurs in a disease with infinite variations in its symptoms, severely testing the diagnostic ability of the medical attendant, the blunted sensibility of the patient rendering subjective symptoms unavailable and frequently also masking, to a great extent, the early objective ones, on which a timely diagnosis depends. Selby points out the various indications and

their value in some detail, but says that, unfortunately, there is no one symptom, nor syndrome, indicating with certainty the existence of perforation. The diagnosis must be based largely on the judgment of the physician, who has watched the case and its variations so attentively that he subconsciously recognizes the changes brought about by the perforation, and the surgeon, seeing the case for the first time, must be guided by the opinion of the physician. But when the three cardinal symptoms—suddenly appearing abdominal pain, rigidity of the muscle wall, and tenderness on pressure—appear in any case of typhoid fever, the assumption is warranted that perforation has occurred, and operation is not only indicated, but demanded.

The "Open Method" Treatment of Cancer.—W. D. Witherbee advocates the treatment of cancer by first enucleating the growth and involved glands, and then, instead of closing the wound, leaving it open to heal by granulation and giving daily *x*-ray treatments until the wound has healed. He claims for this method the advantages of perfect drainage of the whole infected region and the changing of a deep or subcutaneous cancer into a superficial one, which can be more directly attacked by the rays, the value of which in superficial growths has been demonstrated. He has had very favorable results with this method in a number of cases, four of which are reported. The same has been the case in one case of tuberculous ulceration of the skin.

The Lancet, June 8, 1907.

The Nature of Infectivity in Relation to Tumor Growth.—D. A. Welsh says the essence of infection is that bacterial cells have entered the tissues and there begun to multiply. As regards cancer, it may be said that its cells become differentiated at a very early stage and sharply marked off from all other cells of the organism. The growth of cancer cells proceeds independently of and at variance with the requirements of the organism and orderly growth in parent tissue is replaced by the unregulated and disorderly growth of the tumor. Cancer cells grow also independently of one another, particularly at the margin of a cancerous deposit. They are essentially parasites and have the attribute of infectivity. The author declares that all growths are essentially malignant and that the so-called benign tumors represent merely a difference in degree and not in kind. Clinically, malignant growths are made up of cells whose infective capacity is high, whereas benign growths are made up of cells of low infective capacity. Cancer cells are endowed with great vitality and longevity. They appear to possess a reserve of vital energy in excess of that retained by the natural tissues of the body. In their growth they appear to be free from the laws governing the growth of tissues in general. Certain forms of nuclear division appear early in cancer cells. Such nuclear divisions are found only in cells of reproduction tissues preliminary to maturation (and in leucocytes) and nuclear exchanges take place between wandering leucocytes and developing cancer cells. Is there any condition, asks the author, which might predispose a group of tissue cells to assume the character of reproductive cells? As a matter of fact, there is evidence that two conditions are commonly present—one general and the other local—both of which may possibly influence this transformation. The general condition is a chemical change in the reaction of the body fluids. It has been shown that developing cells may be induced to undergo increased and abnormal nuclear divisions when the chemical reaction of their environment is altered and when, in particular, the alkalinity of the medium is increased, and there is evidence that the body fluids of a cancer patient commonly exhibit this increased alkalinity. Hence it may at least be said that the body fluids of a cancerous subject are commonly in a condition which independent biological research has shown to be favorable to abnormal nuclear transformations.

Two Cases of Infection by the Paratyphoid B. Bacillus.—The cases are reported by E. A. Gates. In case 1, that of a woman of 54 years, there was a continued fever with four relapses, venous thrombosis, acute bronchitis, cholecystitis, lentigines, and agglutinative reaction, with paratyphoid *B. bacillus*. Recovery followed. Case 2, a young woman of 21 years, the daughter of the foregoing patient, presented catarrhal jaundice, slight fever, and the agglutinative reaction. This patient also recovered.

Ligature of the Renal Vessels by the Transperitoneal Method for the Cure of Persistent Urinary Fistula.—One case is reported by M. P. Holt. His patient was a sturdy young man who nine months previously had sustained a rupture of the left kidney from a kick at football. His very short subcostal space was filled with scar tissue and a sinus through which pus and urine were freely discharged. Concerning the technical feature of the operation, the author notes the necessity of a careful search for accessory or abdominal renal afferent vessels. Asepsis can be secured only by avoiding the suppurating area at all costs; this is effected by keeping as far from the kidney as possible and as close to the aorta and vena cava as is safe to apply a ligature. Access to the renal pedicle in abdominal nephrectomy is claimed to be safer when made through the outer layer of the mesocolon by reason of less danger to the colic blood supply; to follow this route, however, would almost certainly open up the septic area, and, moreover, the colon may be found inseparably united to the kidney. In his case no evil resulted from approaching the renal vessels through the inner mesocolic layer, and this notwithstanding that a search was made for possible renal afferent vessels. The advantages claimed for this method are that if it is properly carried out there is little or no risk from hemorrhage, shock, or sepsis. As regards (a) hemorrhage, this method is in great contrast to any form of piecemeal nephrectomy; (b) it is an aseptic operation which nephrectomy would certainly not be; and (c) subcapsular or piecemeal nephrectomy is at best a very severe operation; ligature is not so and shock should not occur; there is inappreciable risk as regards possible damage to the colon or other surrounding organs and serous cavities (septic infection). The author concludes by saying that he would not hesitate to employ renal vessel ligation as a substitute for nephrectomy where this latter operation promised great difficulty and the likelihood of such severe hemorrhage as would suffice to turn the scale between life and death in an exhausted patient. Moreover, as a preliminary to a subsequent nephrectomy (a septic operation) an aseptic ligation of the renal vessels would be sound surgery, though the author claims that nephrectomy would then be unnecessary, as the ligature would be followed by rapid and permanent cure. Ligature of the renal vessels is surely a great improvement on any form of subcapsular piecemeal nephrectomy or morcellement. The former is a simple and the latter a very serious, procedure, and both effect the same result.

British Medical Journal, June 8, 1907.

Asthma Caused by Impacted Tooth.—A. J. Rice Oxley reports the case of a housemaid who went to have some teeth extracted, and took gas rather badly. Directly after she began to have the typical symptoms of asthma, which were relieved by belladonna tincture and the iodides. They continued, however, in varying degrees for nearly eighteen months, when, in a paroxysm of cough, the patient expectorated a fairly large portion of tooth, with immediate relief and permanent cure of the asthmatic attacks.

Treatment of Birth Asphyxia.—J. W. Malini relates that in a recent case the child was born in a state of white asphyxia. He tried the Sylvester and Schultze methods of recuscitation without avail, and then mouth-to-mouth inflation. The child was pale and limp; there was no attempt at respiration, and apparently the heart was not beating; but a little dark blood oozed from the child's untied cord. The baby being wrapped in a warm blanket, he breathed into the mouth and inflated the lungs, and at the same time attempted to compress the heart externally by placing the right thumb parallel to and below the left costal arch, with the fingers extended over the precordia; simultaneously the left hand was applied to the right side of the chest in order to express the air from the lungs. No air appeared to pass into the stomach, but perhaps his hand prevented it. After a few minutes the child's skin flushed and the untied cord had to be secured owing to the commencement of hemorrhage. Natural respiration started after about a quarter of an hour.

Aortic Pressure in Post-Partum Homorrhage.—In a recent case under the care of M. Henry, he relates that after the head had been for one hour on the perineum without making any progress he gave chloroform, applied forceps, and delivered easily. The body followed shortly after. There was very little hemorrhage before the third stage was completed, but the uterus remained flabby and did not contract for about twenty minutes after the second stage. He held it firmly all the time. An enormous gush of blood came away with the placenta, and was followed by a very copious flow. The handy woman who was assisting, and who is accustomed to attend labor cases among the working classes, fainted when she saw such an amount of blood, and he was left to his own resources, as there was no one else in the house. He turned the patient on her back and pressed on the abdominal aorta, which at once controlled the hemorrhage. In about half an hour the

uterus began to contract, and in one hour it was firm and hard. He gave her two or three grains of ergot, when the placenta, which came away entire, was born. The puerperium was satisfactory and the patient is now well, though somewhat anemic.

Complete Vocal Rest During the Sanatorium Treatment of Laryngeal Tuberculosis.—The paper of N. Bardswell and B. Adams is based mainly on six personal cases, the symptoms of which are preserved in tabulated form. Patients on the silent treatment are allowed to take their walks with other patients and to eat at the common table. Care should be taken in choosing companions for silence cases, as on the commonsense of these companions is largely conditioned the ability of the silence patients to maintain the observance of the restrictions under which they are placed. The silence treatment, carried out under the circumstances above referred to, is much less irksome than when the patients are isolated, for by signs and scribbling pads the patients can, to a considerable degree, take part in the conversation and amusements around them. In the cases referred to, the silence treatment carried on for a period of five months, the laryngeal disease immensely improved. Four of the six patients had ulceration of the cords in addition to their congestion. The remaining two had swelling and congestion of the cords, and of the arytenoid mucosa or interarytenoid region. The ulcers all cicatrized in the first group, while the swelling and congestion very much diminshed or greatly cleared up. In the fifth case normal voice was restored after previous hoarseness, while in the sixth case the hoarseness was greatly lessened. In all the cases the laryngeal improvement was associated with great improvement in the lungs and in general health.

Münchener medizinische Wochenschrift, May 28, 1907.

Phimosis as a Cause of General Disturbances.—Witzenhausen says that while attention has already been directed to phimosis as a possible etiological factor in the causation of urinary disturbances and nervous symptoms in children, it has not been recognized to a sufficient degree that other conditions may also be referable to this abnormality of the prepuce. He reports a number of cases in which constipation in infants was relieved by the operation of circumcision, and explains the beneficial effect of the procedure as follows. As a result of the stenosis of the preputial opening the act of urination is rendered difficult and ultimately the bladder is imperfectly emptied, becomes dilated, and a more or less serious state of overflow incontinence results. As a consequence of this the pelvic organs are crowded by the enlarged bladder, the rectum is pressed upon and constipation results. In consequence of this early perversion of function more or less serious and persistent disturbances are caused which may require a long time to subside even after the initial source of the trouble has been relieved by circumcision.

Examinations of the Urine in Practice.—Grube says that the habit of having urinary examinations carried out by others than the attending physician is one that is to be seriously deprecated. It is open to numerous objections, among which are the facts that the patient loses confidence in a physician who does not carry out the examination himself, and then it is not always wise to have the patient know the results of the analysis, as is the case when he is told to take the specimen to a laboratory himself. The author takes the stand that it is not necessary to carry out the elaborate analyses that chemists are in the habit of supplying and states that in practice the most important substances for determination are sugar, albumin, diacetic acid, bile pigment, and indican. Of these the only one that requires quantitative estimation with any great degree of accuracy is the sugar. For this the Pavy method is excellent, but the author describes a still simpler procedure by means of which sufficiently exact results for practice may be obtained. For the albumin determination the rough method of estimating the amount of precipitate resulting from the heat and acid test is practically as satisfactory as the more elaborate analytical methods.

Deutsche medizinische Wochenschrift, May 30, 1907.

The Technique of Symphyseotomy and Hebosteotomy.—Sellheim, under the latter terms, designates what is usually spoken of as hebotomy or pubiotomy. He describes the various misadventures that may assail the operator in performing the operation, such as snapping of the saw, uncontrollable hemorrhage, cutting through only one ramus of the pubis, omission to cut through the ligaments, etc. He emphasizes the fact that the inexperienced operator is likely to encounter many difficulties and suggests that theoretical instruction, watching others operate, and operating on the cadaver, be supplemented by operations on the living body of an animal. For this purpose the sheep is particularly suitable, as the dimensions of the anterior part of its pelvis and other anatomical considerations render it in this regard particularly similar to the human female. The inguinal region is not excessively fatty and the vagina is sufficiently spacious to allow the necessary control of the steps of the operation from this direction. The time during which the animal lies unconscious as the result of the violent blow on the head given it by the butcher before slaughtering may be utilized for the performance of the operation, and the condition of the parts may be accurately studied at the subsequent dismemberment of the animal.

The Use of the Murphy Button in the Large Intestine.—Vogel says that while the Murphy button may safely be employed in operations about the stomach and small intestine, its use in dealing with conditions in the large intestine, particularly its lower part, should be avoided. He describes two cases of resection of the splenic flexure in which the Murphy button was used, but in which a fatal termination was caused through the formation of a fecal abscess about the anastomosis. In the one case the intestinal stumps were united end to end and in the other a lateral anastomosis was done. In each instance the perforation was found in the same relative position, viz., just at the point where the intestine passed over the rounded shoulder of the proximal half of the button. The lumen of the button was completely occluded by a plug of feces. The author considers that as a result of this obstruction the proximal intestine becomes much distended and the pressure of the gut against the button leads to necrosis and perforation.

French and Italian Journals.

Therapeutic Indications in Cancer of the Uterus Complicating Pregnancy.—Oui considers the influence of cancer of the uterus on the course of pregnancy and the life of the fetus, as well as the effect of pregnancy on the development of the cancer. The author considers it very doubtful whether pregnancy does in reality cause a more rapid development of the cancer. The mortality of the mothers after labor is not from the presence of a rapidly developed cancer, but from puerperal infection. The infant is sacrificed in about one-quarter of the cases, but this might in many cases be prevented by a cesarean section done before the child had been exhausted by prolonged labor. In inoperable cases we should not undertake any but palliative treatment, giving to the child the chance of delivery. In operable cases, during the first two months it is justifiable to perform hysterectomy in small cancers that are distinctly limited. Induction of premature labor is useless to the mother and deleterious to the child. Curettage of fungosities with cauterization will in all probability sacrifice the child by producing interruption of the pregnancy. If the pregnancy has reached term and the cervix is little involved it may dilate, and delivery take place normally. If the cervix is rigid a cesarean section should be done early enough to save the child, and in inoperable cases a Porro operation done at once will prolong the life of the mother. In operable cases an immediate hysterectomy should be done, thus removing at once the growth and the source of infection.—*Annales de Gynécologie et d'Obstetrique*, April, 1907.

Prolonged Retention of the Ovum after Abortion.—R. Garipuy states that complete or partial retention of the ovum after abortion has been threatened forms a condition that is exceedingly difficult of diagnosis. The placenta alone may be retained, and hemorrhage and infection may both be absent. The placenta not being separated, the circulation is maintained and no changes may go on, or there may be a gradual transformation into a malignant growth. Again, the placenta may be eliminated in pieces at stool without the knowledge of the patient. If the entire ovum is retained it will be expelled intact without any transformation. The uterus will close on the ovum as if it were alive, there being absolutely no symptoms to guide the diagnostician. If pregnancy has been previously diagnosticated, this is an aid in diagnosis, but if there has never been any examination made previously the diagnosis is still more obscure. There is no hemorrhage and no pain or contractions. The cervix may be closed, and there may be little modification in form of the uterus. The only reliable sign is the consistency of the uterus, which an experienced touch will reveal. It is neither of the peculiar softness of pregnancy nor of the normal hardness, but of a consistency between the two. Metritis and subinvolution must be differentiated, but in them there is generally some tenderness. It is justifiable, having excluded pregnancy, to dilate the cervix and remove all that is found in the uterus.—*La Presse Médicale*, April 24, 1907.

Society Reports.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-second Annual Meeting, Held in Washington, D.C., May 7, 8 and 9, 1907, in Conjunction With the Congress of American Physicians and Surgeons.

FRANCIS P. KINNICUTT, M.D., NEW YORK, PRESIDENT, IN THE CHAIR.

(Special Report to the MEDICAL RECORD.)

(*Concluded from page* 837.)

Thursday, May 9—Third Day.

Pathological Anatomy of Lymphosarcoma; Its Status with Relation to Hodgkin's Disease.—Dr. W. G. MACCALLUM of Baltimore, Md., discussed in this paper the status of lymphosarcoma in relation to Hodgkin's disease. A fairly constant and characteristic histological picture had been shown by the study of a series of cases of lymphosarcoma. This had been described by Kundrat and others. This histological picture, together with the mode of origin and distribution of the new tissue, and with the examination of the blood, made it possible to arrive at a definite diagnosis of the condition. It might be distinguished from true sarcomata on the one hand, and from lymphatic leukemia and the lymphosarcomatosis of Sternberg on the other. The histological description of the lesions of Hodgkin's disease given by Dr. Reed rendered it easy to differentiate lymphosarcoma from that condition. Of six cases studied at Johns Hopkins Hospital three agreed fully with what Dr. Reed had said in his paper. He detailed briefly the histories of these cases.

Dr. H. A. CHRISTIAN of Boston thought the distinction which Dr. MacCallum, Dr. Reed, and others had drawn between lymphosarcoma and Hodgkin's disease was rather sharper than could be applied clinically. Hodgkin's disease, as described by Reed, was a perfectly definite entity, but from the clinical point of view this distinction could not be borne out. In 1895, at the Boston General Hospital, he saw a number of cases which clinically were Hodgkin's disease, but none of these had the cytological characters described by Reed and others. There were border-line cases and others which were closely related to the leukemia group.

Dr. MACCALLUM, in closing the discussion, said that he had hardly seen a case in which the appearance and distribution of the lesion resembled that of Hodgkin's disease which did not, upon microscopic examination, differ materially from it, and he had no hesitation in making the distinction. He had not seen a case in which the cytological features were like those of Hodgkin's disease which did not resemble it clinically. Lymphosarcoma, as he had seen it, was always sharply differentiated.

Chylous Ascites and Chylous Pleurisy in a Case of Lymphocytoma Involving the Thoracic Duct.—Dr. GEORGE DOCK of Ann Arbor, Mich, read this paper, in which he detailed briefly the history of a case, under observation only for a short time, in which there were chylous exudates in the peritoneum and pleural cavities. There was moderate enlargement of the superficial lymphatic glands. A tumor mass, resembling an enlarged spleen, filled half the abdomen, and there were other smaller abdominal tumors. There was a relative increase of lymphocytes in the blood. Autopsy revealed the following: Lymphocytoma ("lymphosarcoma"), causing enormous thickening of the thoracic duct; a large mass in the abdomen of similar tissue, filling the mesentery; lymphocytomatous change in numerous abdominal and superficial glands.

Dr. W. G. MACCALLUM of Baltimore, Md., said this case fell very well into the class of leukosarcoma. He cited two cases and emphasized the importance of systematic classification of these cases.

Dr. ALFRED S. WARTHIN of Ann Arbor, Mich, had seen four cases of lymphosarcoma which, followed out several years, became leukemic. He took issue with Dr. MacCallum in his attempt to differentiate between cases of the large-celled type and those of the lymphoid type, citing a list of thirty-seven cases. He had also had interesting cases of the myeloid type.

The Histological Lesions in Experimental Glanders. Dr. C. W. DUVAL of Montreal, Canada, in this paper reviewed the opinions held by different authors as to the cytogenesis of glanders, and presented a series of lantern-slide sections from the pathological and bacteriological laboratories of McGill University showing the various lesions produced by the glanders bacillus. He called attention to the analogy between the proliferative changes produced by the glanders bacillus and miliary tubercle.

Dr. W. G. MACCALLUM of Baltimore, Md., cited a case which died of pneumonia in which the cytological study showed the glanders bacillus, and showed that the lesions in the lungs were those of bronchopneumonia.

Multiple Myeloma; the Histological Comparison of Six Cases.—Dr. HENRY A. CHRISTIAN of Boston presented this paper, illustrating it with lantern slides. He said the cells in myelomata are premyelocytes, myelocytes, lymphocytes, plasma cells, or erythroblasts according to the interpretation of the individual observer. Almost all agreed that myelomata form a distinct class of tumor and have their origin from the bone marrow. These differences of opinion as to the nature of the tumor cells must have arisen either from the fact that a variety of tumors are included under the term myeloma, or from the fact that different observers have assigned different origins to cells possessing similar histological characteristics. The latter explanation seemed preferable. Few observers had studied as many as two cases. He had compared six cases, finding that they possessed many characteristics in common, and that there were minor individual differences, which, however, were no greater than occur in individnal examples of other tumor groups. The tumor originated from cells of the bone marrow. In normal bone marrow a few cells occurred which bore close resemblance to the cells of these six myelomata, and could be regarded as the ancestral cell from which the tumor cells originated. It did not seem possible to exactly determine the nature of this cell type. It bore a strong resemblance to a plasma cell, but presented certain differences. The latter were prominent in some of the tumors. There was no evidence of an erythroblastic origin.

Typhoid Endaortitis.—Dr. ALFRED S. WARTHIN of Ann Arbor, Mich., in this paper, detailed two cases which he had carefully studied. The gross lesion was what is usually called fatty degeneration, and in each case these areas corresponded to the axis of the vessel. The changes in the aorta showed the various stages of arteriosclerosis. In many of the areas it was possible to demonstrate bacilli corresponding to typhoid bacilli. A number of lantern slides were shown, and in only a few of the sections did the lesion extend through the intima and involve the media.

The Antagonistic Action of Alcohol and Carbolic Acid.—Dr. ALONZO ENGLEHART TAYLOR of Berkeley, Cal., said, in this communication, that the statement commonly made, to the effect that alcohol exerts an antagonistic action upon carbolic acid, might be tested directly by the following procedure: The antiseptic action of carbolic acid is employed as the medium of measurement. A yeast, known to be tolerant to alcohol up to a concentration of nearly fifteen per cent., serves as the object of the experiment. By the froth of this yeast upon a standard solution of sugar, with relative and varying quantities of carbolic acid and alcohol, the measurement

of the carbonic acid evolved in the fermentation will be the index of the activity of the yeast and, conversely, of the action of the carbolic acid upon the yeast, and of the effect of the alcohol upon the antiseptic influence of the carbolic acid. The experiment indicated that alcohol has no direct antagonistic action to carbolic acid; it does not lessen the antiseptic action of carbolic acid.

Dr. T. Sollmon of Cleveland, Ohio, said that alcohol favored absorption, its action being not physical, but physiological, and that carbolic acid was slightly more toxic in the presence of alcohol.

Demonstration of Large Phagocytic Cells from the Circulating Blood.—Dr. H. A. Christian, for Dr. F. Van Nuys of Boston, Mass., presented pictures of these cells. The patient from whom the blood was taken was a Russian Jew, who was suffering from aortic insufficiency, bronchitis, and a tumor. It was not known whether the cells originated from the tumor or from some leukemic condition. The cells were interesting in that they varied from ten thousand to ninety-eight thousand in twenty-four hours.

Dr. Richard C. Cabot of Boston, Mass., cited another case which Dr. Van Nuys will report later. This patient was a Russian Jew, suffering from aortic regurgitation, but with no evidence of tumor. The variation in the blood count was the result of technique. The high counts were from the ear, not from the finger or toe, being eighty thousand from the ear and ten thousand from the finger. Just why there should be such an enormous difference between the ear and any other part of the body was not known. The ear itself was perfectly normal.

Unclassifiable Fevers.—Dr. James Tyson of Philadelphia, Pa., presented short reports of a few typical cases, illustrating the difficulty in classification which grows out of the occurrence of certain cases of fever which do not meet the requirements of a diagnosis for typhoid fever, influenza, malarial fever, or other fever due to discoverable irritative causes.

A Contribution to the Study of Long Continued Fevers.—Dr. Herbert C. Moffitt of San Francisco, Cal., detailed in this paper the history of a woman, forty-seven years of age, in whom recurrent fever had been the chief symptom over a period of ten months. The attacks at first were of a few days' duration, separated by an interval of ten to fourteen days of apparent perfect health. Subsequently the periods of fever lasted for twenty-two days, with an interval of seven days, and finally fever of remittent-intermittent type lasted for twenty-seven days. There were occasional chills and frequent sweats. A history of lues thirteen years before was obtained, of cough every winter for ten years, of an appendix operation eight years before, of several attacks of abdominal pain in the last two years, suggesting cholelithiasis. The patient had traveled extensively during the past three years. During the first attacks there was aching in the muscles and bones, but later no symptoms were manifest other than fever and weakness. The temperature was chiefly remittent, occasionally intermittent, 103° or 104° in the afternoon hours. There was evidence of an old process, slight, at both apices. Extreme myosis was evident, the pupils were irregular, reaction to light very slow. No other signs of lues. The heart was markedly dilated, and a systolic murmur was heard over the precordia. No glands palpable; spleen never palpated. Abdomen distended; no tenderness. No pigmentation. There was a peculiar enlargement of the liver upward; the edge not felt. Dullness at fourth rib, and at angle of scapula behind. Moderate secondary anemia; leukopenia 2,600 to 5,500; large mononuclears 9 to 18 per cent.; blood culture negative. Mercury, iodide, and later arsenic, were employed in the treatment. Autopsy revealed the following: Lymphosarcoma of one retroperitoneal gland near the right kidney, multiple nodules in the liver.

Dr. Richard C. Cabot of Boston, Mass., said he had recently gone over the records of the Massachusetts General Hospital with reference to long continued fevers, and had found that over ninety per cent. of fevers of over two weeks' duration fell under one of three heads, viz., typhoid, sepsis, and tuberculosis in one form or another.

Dr. Alfred Stengel of Philadelphia, Pa., cited the case of a young man who had had typhoid fever of several months' almost continuous duration, with slight fluctuations. He had lost fifty or sixty pounds. Previously he had been in perfect health apparently, with no indication for the development of the disease so far as was known. He had emaciated sufficiently for Dr. Stengel to follow up a mass in the abdomen which he thought to be a tumor at the head of the pancreas. The abdomen was opened and a mass of retroperitoneal glands the size of the fist were found. A small nodule was taken, the rest of the mass left, and the abdomen closed. The patient improved, and was seen again two weeks before, having gained sixty pounds in weight. This tumor was slightly palpable at that time. This was a case of retroperitoneal tuberculosis. Dr. Stengel cited a number of other cases.

Dr. S. Weir Mitchell of Philadelphia, Pa., asked if there were not individuals in whom the temperature normally was higher than what is usually attributed as normal to man. He cited a number of cases in which the temperature normal to the individual was higher or lower than the generally accepted normal.

Dr. George Dock of Ann Arbor, Mich, cited a case of a man operated upon for gallstones. The gall-bladder was found to be perfectly normal, but over the surface of the liver were found tumors, thought to be secondary carcinomatous masses. One of the masses was removed and the wound closed. The diagnosis of tuberculosis was made by a pathologist. The man subsequently consulted Dr. Dock, who asked to see the pathological specimens. There was absolutely no obtainable history of syphilis, but upon examination of the specimens Dr. Dock found not tuberculosis and not cancer, but a large gumma. He subsequently obtained from the family physician a history of syphilis eleven years before, when he had treated the patient for a primary sore. Antisyphilitic treatment brought about complete recovery. The case emphasized the importance of old syphilitic lesions, which should be thought of in connection with these cases of long continued fever. He called attention to the still continued use of quinine in long continued recurring fever, which he deprecated.

Dr. W. S. Thayer of Baltimore, Md., cited two cases of recurrent fever diagnosed as typhoid which subsequently proved to be carcinoma of the liver.

Dr. Reginald H. Fitz of Boston, Mass., cited the case of a man, under observation for the last two months, who had recurring attacks of fever. Examination revealed an enormous enlargement of the spleen, moderate abdominal distention, and somewhat symmetrical enlargement of the liver. There was a deficiency in hemoglobin. He had been treated with large doses of quinine and arsenic. During the greater part of the time he had shown no diminution of nutrition, and for the past six months had been at work. The temperature was high and irregular. The diagnosis of splenic pseudoleukemia was suggested.

Dr. Joseph Sailer of Philadelphia, Pa., cited a case in which a woman, thirty years of age, had had chronic relapsing fever for over a year. The causal factor in this instance was a dermoid cyst. The patient made a complete recovery.

Further Studies on the Spirilla of Relapsing Fever.—Dr. F. G. Novy of Ann Arbor, Mich., presented this paper. Since the preparation of the paper at the last meeting of this association, showing the existence of two and possibly three distinct relapsing fevers, several foreign work-

ers had confirmed the specific differences between the *Spirillum Obermeier* and the *Spirillum Duttoni*. The eastern relapsing fever, as met with in Russia and India, was probably equally distinct. The cultivation *in vitro* had not been accomplished, but it was now possible to grow both of these organisms in collodion sacs in the peritoneal cavity of certain animals. Some immunity experiments and further facts relating to the nature of the spirochetes were detailed.

The Measurement of Functional Heart Power.—Dr. Richard C. Cabot of Boston, Mass., presented in this paper the results of his attempts to measure the functional heart power by the methods of Graupner, Herz, and Levy. Direct examination of the heart, that is, by auscultation and percussion, even when supplemented by radioscopy, the study of the pulse and blood pressure movements, revealed but little as to the amount of power possessed by the heart. The evidence of peripheral congestion (lungs, liver, kidneys, stomach, extremities) came relatively late, after the damage which it was desired to prevent had already occurred. The strength of the heart muscle and of the whole circulatory apparatus should be measured early in the course of both functional and organic diseases.

The paper was discussed by Dr. W. S. Thayer of Baltimore, Dr. Charles G. Stockton of Buffalo, N. Y.; Dr. Henry Sewell of Ann Arbor, Mich, and Dr. Cabot closing the discussion.

Observations Upon Certain Reflexes, Lowering Blood Pressure, which Arise from Stimulation of the Inflamed Pleura.—Dr. Joseph A. Capps and Dr. Dean D. Lewis of Chicago detailed in this paper, which was read by Dr. Capps, the results of their experiments along the line indicated by the title of the paper. In healthy dogs it was found that irritation of the pleura by mechanical, chemical, thermal, and electrical stimuli caused very little change in blood pressure. In dogs with artificially produced pleurisy, stimulation of the pleura sometimes gave rise to a marked or even fatal fall in blood pressure. Analogous conditions were seen in man during operation upon the thorax.

Clinical and Pathological Studies of Arteriosclerosis. Dr. W. S. Thayer and Dr. Marshall Fabyan of Baltimore, Md., presented in this communication, read by Dr. Thayer, a study, clinical and pathological, of the radial arteries in forty cases. The distribution of the arteriosclerotic changes in the various cases was given in detail.

Cerebral Types of Arteriosclerosis.—Dr. Alfred Stengel of Philadelphia, Pa., read this paper, in which he discussed the subject under the following heads: (1) Convulsive attacks, local or general, due to cerebral arteriosclerosis with or without thrombosis. (2) Stupor and coma. (3) Psychic manifestations. (4) Differential diagnosis from brain disorders, toxic conditions, and various neuroses. He emphasized the fact that the diagnosis of uremia is exceedingly difficult, and that undoubtedly many cases of supposed uremia, particularly those treated in large hospitals, are not uremia at all, or if uremia the uremia is a terminal condition rather than the principal condition. He believed it to be not uncommon that persons dying slowly from any cause may become uremic at the end. This would apply to persons with arteriosclerosis. Just before death uremia might develop, in proportion, of course, as the kidneys had been affected by the preceding disease. The same might be said of gastrointestinal troubles.

Further Studies on Experimental Arteriosclerosis.—Dr. I. Adler and Dr. O. Hensel presented in this paper, which was read by Dr. Adler, the results of further experiments with nicotine, alone and in combination with other substances. The total material employed in these experiments consisted of ninety rabbits, which were treated with nicotine in various combinations; of these there were only twelve which showed macroscopic lesions.

Dr. Henry Sewall of Ann Arbor, Mich., in discussing the three papers on arteriosclerosis, asked what part of the arterial system was involved specifically, if there was a specific local involvement in producing the functional changes which depend upon arterial elasticity and its loss —in other words, what is arteriosclerosis?

Dr. A. Jacobi of New York City said just what it meant could not be decided in every case. Arteriosclerosis might be in the brain, it might be renal; it would never be a uniform process. He called attention to one symptom of senility which he had long noted, and which was perhaps less intellectual than moral, viz., a sudden change of temperament. In a person of advanced age a sudden, marked change of temperament was certainly indicative of arteriosclerosis of the brain, and meant approaching death.

The three papers were further discussed by Dr. Joseph Weaver and Dr. Joseph Sailer, and the discussion closed by the readers thereof.

Motor Insufficiency Due to Perigastric and Duodenal Adhesions.—Dr. Frank Billings of Chicago presented this contribution. Among the causes of perigastric and duodenal adhesions might be mentioned infection of the stomach, duodenum, or some neighboring organ or organs, most frequently the gall-bladder; chronic ulcer of the stomach; surgical procedure, etc. Of these the most important might be said to be the gall-bladder, second, surgical procedure, third, ulcer of the stomach. He outlined the methods of detecting disturbed motility resulting from these conditions, and suggested that the indications for treatment pointed to processes underlying the condition.

Dr. J. H. Musser of Philadelphia, Pa., cited three cases of pyloric and duodenal obstruction, with vomiting, occurring in early convalescence from typhoid fever.

Gastric Disturbances Associated with the Presence of an Excess of Acid.—Dr. Joseph Sailer of Philadelphia, Pa., in this paper outlined the methods of determining approximately the total quantity of hydrochloric acid secreted by the stomach, and the distinction between actual and relative excess. He also spoke of the irritability of the secretory apparatus of the stomach; excessive secretion, associated with hypermotility, approximately normal motility, and retention; and the apparent excess of hydrochloric acid, found in cases of retention of the stomach contents.

On the Lenhartz Treatment of Gastric Ulcer and Hyperchlorhydria.—Dr. S. W. Lambert of New York City gave in this paper some of the practical objections to the older methods of treatment, and the principles upon which the Lenhartz treatment is founded. He detailed briefly the method of Lenhartz, discussing some of the special points of interest in cases reported, and the conclusions to be drawn therefrom, the claims advanced by Lenhartz in favor of his method and the relation of the method to surgical treatment.

The Effect on Blood Pressure of Nauheim Baths in Various Types of Heart Disease.—Dr. Philip King Brown of San Francisco, Cal., presented statistical results showing that, contrary to the accepted view at Bad Nauheim, blood pressure is raised by the baths, except in cases of very advanced myocarditis, arteriosclerosis, and the arteriosclerotic renal conditions. The conditions under which the blood pressure may be increased or lowered by the treatment were detailed.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held April 22, 1907.

The President, Dr. Walter Lester Carr, in the Chair.

Cardiac Hydrothorax. Report of a Case Aspirated 311 Times.—Dr. W. Travis Gibb reported this case, which was interesting on account of the large number of times the man's chest was aspirated and the enormous quantity

of serum withdrawn in a comparatively short space of time. The patient was a physician, forty-six years old, not in active practice, and who had always led a fairly active, more or less outdoor life, and, while not in robust health, had never had any serious illness. At the age of twenty he discovered that his urine contained a small percentage of albumin. At twenty-five years of age he contracted syphilis. His family history was excellent. When Dr. Gibb first examined him in 1903 he found the heart greatly hypertrophied with obstructive murmurs at both mitral and aortic valves. There was no fluid in the chest or abdomen at that time. The urine contained .5 per cent. of albumin and a few hyaline casts. During the summer of 1903 and 1904 he sailed a small yacht, and on several occasions, especially in 1904, he was in considerable danger and compelled to overexert himself. Shortly after a particularly severe exertion, when his boat went ashore in a storm, dyspnea on the slightest exertion began to develop, his feet and legs became edematous, and he found a small amount of fluid in both pleural cavities. His condition became rapidly worse, the fluid in his chest increased, ascites appeared, and the edema reached his buttocks. He aspirated the chest for the first time October 15, 1904, and from that time until he died on May 19, 1906 (580 days), he aspirated his chest 311 times, averaging one aspiration every 1.9 days for the entire nineteen months. The total amount of fluid withdrawn was 10,690 ounces, or about 83 gallons, weighing nearly 700 pounds. The amount of fluid withdrawn at each aspiration varied from 12 to 110 ounces, averaging 34 ounces. There was an average daily loss through this channel of about 19½ ounces. As he averaged less than 16 ounces of urine each day, he passed more fluid through the aspirating needle than through his kidneys. The patient's average weight throughout his illness was about 140 pounds, and as he withdrew about 700 pounds of fluid from his chest in nineteen months, there was a loss through this channel of an amount equal to his body weight every 118 days. Of the last 200 tappings, 103 were on the left and 97 on the right side. The 103 left side tappings yielded about 3,100 ounces, an average of 30 ounces, and the 97 right side tapping yielded about 2,700 ounces, an average of almost 28 ounces for each tapping. These frequent operations were of necessity a great tax upon his time, but he found that by simplifying and systematizing the procedure he could sterilize the instruments, his hands, and the site of puncture, and complete the tapping in about twenty-five minutes, at the same time doing the operation aseptically. Although the chest wall was punctured more than 400 times there never was the slightest evidence of infection. So far as he could ascertain from the medical literature at his disposal, this record of 311 aspirations of the pleural cavities, with the withdrawal of 10,690 ounces of serum in nineteen months, was one which had never been surpassed.

Heart Disease Complicating the Infectious Diseases of Infancy and Childhood.—Dr. Henry Koplik read this paper. He said that it should be recognized at the outset that in infancy and childhood the peculiar conditions, anatomical and dynamic, made the heart a favorite object of attack in any infectious conditions. That organ was working under a constant physiological strain; its larger size, as compared to the body weight, seemed one of the provisions of nature to meet the great excess of energy put forth with every bodily movement at this period of life. The greater activity of this organ in a normal state was still greater in conditions of disease. The very anatomical and dynamic conditions peculiar to the heart in infants and childhood made a diagnosis of lesions much more difficult than at a later period of life, especially in young infants the differentiation of certain rare murmurs as to their congenital or acquired origin. The myocardium was peculiarly open to attack in the acute infectious diseases, and in a much more dangerous manner than either the peri- or endocardium. In preparing his paper Dr. Koplik studied a group of 100 cases of cardiac disease, valvular in character, occurring in his hospital service. Sixty-two per cent. of the cases were rheumatic; with these rheumatic cases there was concomitant chorea in four. Thus the exanthemata could not be considered as a potent factor in the causation of valvulitis in children. In passing through the latest report of the scarlet fever hospital, the absence of valvular cardiac affection in some 300 cases was striking. On the other hand, affections of the heart muscle in conditions of profound sepsis was frequent. Even in mild or moderately severe cases of the exanthemata, it was quite common to obtain murmurs over the pulmonic and at the apex, which subsequently disappeared, and which might partly have been due to a relative insufficiency, as well as hemic in origin. These murmurs were also frequent in other infectious diseases, such as typhoid fever. In the severe states of toxemia, as in a complicating peritonitis of typhoid fever, the myocardial infection was quite marked. Valvulitis or pericarditis were uncommon in typhoid fever as they were in the exanthemata. The grippal or catarrhal infections of the tonsils and nasopharynx were often the starting point of the severer affections of the heart. Of the 100 cases of cardiac disease a distinct history of a tonsillitis preceding the invasion of the joint and endocardial disease was found in 13; in many others there was a history in the past of repeated attacks of tonsillitis. Among the infectious diseases pneumonia had attracted most unexpected attention as a causative agent in endocardial affections. Cases of endocarditis occurring in the course of pneumonia had been published and had been said to originate in a pneumococcus, or a strepto- or staphylococcus infection, originating from the brachial nodes. It was quite common in children to find, after a pneumonia had run its course, an affection of the myocardium manifested in cardiac weakness. The innervation of the myocardium was affected, and cases of so-called infectious or toxic bradycardia were not infrequent. He had never seen attacks of syncope or tachycardia or cardiac paralysis similar to what was so much feared in diphtheria. Many cases in infants failed to rally at the lysis or crisis because the heart muscle had become overwhelmed with the poison of the disease, and failed the patient at the most needed period. Of all the diseases pneumonia placed the greatest tax upon the heart. A pneumonic endocarditis was infrequent in children. That the malignant forms of endocarditis, with all the septic and pyemic symptoms described by Litten in the adult, did occur in children, he showed by citing a case. It followed and complicated an unresolved pneumonia. In closing, he said that it was striking that in the exanthemata the fevers, such as typhoid fever, the endocardium, and thus the valvular apparatus, should escape injury, whereas the myocardium bore most of the burden of the toxemic infections. The explanation of this was that, with the exception of scarlet fever, bacteriemia was uncommon in these diseases, and the endo- and pericardium was not as susceptible to infections as in other conditions, such as grippe and pneumonia.

The Heart in Infectious Diseases; Adult Life.—Dr. C. H. B. Camac presented this communication. He said that Dr. Koplik, in treating this subject in its relation to childhood, with his extensive clinical experience, had given them much information applicable to the adult life, as well as that of childhood. In the brief time in which it was possible to speak, Dr. Camac said it would be practical to treat of but one aspect of this broad subject. The child, having passed through a cardiac complication in an infectious disease under the care of a pediatrician, came to the internist in adult or early adult life. The questions which were of paramount importance were the mechanism of *compensation* and the integrity of those structures by which this was accomplished. Compensation was, therefore, the part of the subject Dr. Camac selected for consideration.

The Vascular System as a Factor in Compensation.—In analyzing 799 autopsy records at the New

York Foundling Asylum (the opportunity having been afforded by the courtesy of Drs. Bishop, Bovaird, and Mathias Nicoll), the writer found not a single case of vascular disease in children under ten years of age. In childhood the healthy vascular system, together with a greater reserve force in the heart muscle, was a great factor in aiding compensation. The vascular and cardiac systems should be considered *as one*. In adult life the condition of the vascular system in the question of compensation *should be our first consideration*.

Part of the Heart Involved; Power of Compensation Varied According to Part Involved.—While the vascular system and heart should be considered as one, the pericardium, myocardium, and endocardium should be considered separately owing to the great diversity of compensating power, as one or the other of these was the seat of disease. Dr. Camac here reviewed the anatomical arrangement of these structures, showing the relation of the diaphragm and pleura with the *pericardium*, and therefore the greater tendency of the latter to become infected in pleurisy and pneumonia. The *endocardium*, including the valves, being continuous with the intima of the blood-vessels, was more exposed to bacterial infection circulating in the blood. He showed preparations of the sheep's heart, demonstrating the complete separation between auricles and ventricles, except for the bundle of His, and the continuous "S"-shaped arrangement of the ventricular muscles. This unity of the right and left side of the heart was a very important feature of the *myocardium*, which if involved proved the most incapable of compensation.

Diseases Which Show a Selective Power Over These Portions of the Heart.—Dr. Camac here gave a clinical subdivision of the infectious diseases in accordance with their present knowledge of their etiology. These were grouped under the three following main headings:

(1) Rheumatic group; (2) septic group; (3) infectious diseases not included in (1) and (2), keeping in mind that (a) power of compensation differed according to the part of heart involved, and that (b) diseases showed tendency to select various parts of heart. Clinical experience gave the following:

Pericardium—Rheumatic group. Pneumonia—relative to extent of lung involved, and whether right or left lobes. Scarlet fever.

Endocardium—Including valves, benign, malignant. Common—Septic group, scarlet fever, rheumatic group. Uncommon—Diphtheria, typhoid, tuberculosis. Rare—Smallpox, measles, chickenpox.

Myocardium—Typhoid, diphtheria, tuberculosis, scarlet fever.

It was this last group which compensated least thoroughly. In the pericardial and endocardial group, compensation was usually good and of long standing. Fatal cases in these latter, as a rule, were due to the severity of the infection, and not to heart failure. Dr. Camac then illustrated on the blackboard the histological changes which took place in the myocardium. These in the fatal cases were usually diffuse, in those which reach adult life they were focal and militated against compensation, being often the direct cause of fatal heart failure.

The Rate, Rhythm, and Intensity as Index of Compensatory Power.—These were considered and Professor Wenckeback's admirable work on "Arhythmia" referred to.

Relation of Right Heart to Left in Compensation.—The work of McCallum at Johns Hopkins and Haven Emerson at the College of Physicians and Surgeons, New York, was referred to as experimental evidence that the right heart promptly aided the left in establishing equilibrium. Dr. Camac reported six cases followed by him during the past winter, in which this "safety valve action" of the tricuspid valve was directly concerned in maintaining the compensation. Five of these were walking about during this right heart involvement, without detriment. He gave the signs by which tricuspid regurgitation could early be detected. From the anatomical facts demonstrated earlier in this communication, together with the experimental evidence just given, it was clear that we should no longer regard the right and the left heart as separate, but as essentially one structure.

The following summary was then given: In weighing the ability and means of the heart to compensate, (1) heart and vascular system should be considered as one; (2) the pericardium, the endocardium, and the myocardium should be considered as separate structures; (3) the selective power of the infectious diseases for these structures, especially those attacking the myocardium, should be remembered; (4) the unity of the right and left heart should be recognized and the "safety-valve action" of the tricuspid early detected, and nature cooperated with in this effort to establish compensation.

The Treatment of Cardiac Conditions of the Acute Infectious Diseases.—Dr. David Bovaird, Jr., read this paper. He confined his remarks to a consideration of the conditions resulting from changes in the cardiac walls, the condition which they grouped under the heading of myocarditis, including the degenerative or inflammatory changes in the cardiac muscle and in the interstitial tissue of the heart walls. It seemed best to limit himself to the more common diseases, such as measles, scarlet fever, diphtheria, pneumonia, typhoid, and septicemia. The discussion of the subject was taken up under the following heads: (1) Circulatory failure at the height of the acute infectious diseases; (2) cardiac dilatation (acute); (3) bradycardia irregular or intermittent heart action; (4) asystole.

Circulatory Failure at the Height of Infectious Diseases.—Certain observers had studied the effects of infections with pneumococci, diphtheria bacilli, and the *Bacillus pyocyaneus* in various animals. Of these only the diphtheria bacillus produced definite changes in the myocardium, and their careful experiments demonstrated fully that the circulatory failures seen in fatal cases of such infections was the result, not of cardiac failure properly speaking, but of a vasomotor paralysis produced by the effect of the toxins on the vasomotor center in the medulla. The vasomotor paralysis affected especially the vessels of the splanchnic area; the animal, as it were, bled into his own veins, thus depriving the vital parts of an adequate blood supply. The heart failed because of a lack of blood to act upon. To strengthen cardiac action, therefore, one must restore the tone of the vessels, particularly the splanchnics. According to experimental investigations, the remedies most efficient were caffein, camphor, infusion of normal salt solution, and abdominal massage. Although neither caffein nor camphor was readily soluble, both could be given hypodermatically, as was usually required, camphor in the form of a 10 per cent. solution in olive oil, and caffein as a sodiosalicylate made according to Tanret's formula. Dr. Bovaird's own experience with these two remedies had not led him to put great confidence in them. Especially in children were they likely to fail. Theoretically, adrenalin chloride met the indications better than any of the drugs named but its action was very transient and uncertain. H. C. Wood said that he had seen patients who he thought were being killed by trusting to the powers of adrenalin as a circulatory stimulant. Dr. Bovaird had never seen the beneficial effects claimed for adrenalin. The remote dangers, however, of producing atheromatous changes in the arteries should not prevent its use in the crisis of infectious diseases if it had real benefit. All were convinced of the value of normal saline solutions to help the failing circulation but there was good reason for caution in its use in pneumonia else they only added to the burden of an overtaxed right heart. Despite the apparent failure in experimental work the best clinicians still relied upon alcohol, strychnine, and digitalis to meet this circulatory failure of the acute infections. With the value of abdominal massage to improve the tone of the splanchnic

vessels he said he had had no experience. As a substitute for this Forchheimer advised the application of two or three icebags to the abdomen to act upon the abdominal reflexes, increase the blood pressure, and reduce the frequency of systole.

Acute Dilatation of the Heart.—This, resulting from myocardial changes directly, might occur at the height of any of the acute infectious diseases, but it was more frequently seen during the period of convalescence. In most cases it might be avoided by proper care of the patient after the subsidence of the fever, such cases requiring rest in bed until the pulse had been normal for some days. The danger of acute dilatation was greatest from diphtheria. It might come on independently of exertion of any kind. It might occur suddenly with intense symptoms of cardiac failure, increased rapidity of the pulse, but with no marked systemic disturbance. The treatment of this emergency demanded the most rapid and vigorous stimulation of the heart. For this purpose they employed first camphor and ether, and whiskey, given hypodermatically, then strychnine and digitalis. Caffein might also be given, or strong black coffee. Once the crisis of the onset had passed they relied upon the systematic use of strychnine and digitalis. On account of the liability to vomiting in these cases, it was desirable to avoid the administration of any medicine by mouth for some days. As a substitute for the tincture of digitalis, they had used with satisfaction a soluble preparation of digitoxin. The general care of these patients was of the utmost importance. If there was restlessness or pain, morphine or opium was of great help, especially in children. This aided the laboring heart. The convalescence of these patients often presented difficult problems. Often a point was reached where progress ceased. The safest plan was to keep these patients quiet until the heart and pulse returned to normal, and then to gradually allow the patient to get up and about. So long as there were signs of cardiac weakness there was a risk in allowing any liberty, especially in children. After getting up they should be cautioned against unusual exertions.

Irregular or Intermittent Heart Action and Bradycardia.—In certain cases of acute infectious disease the heart action was modified in force and rhythm without increase in the size of the heart, or increase in the pulse rate. In some instances there was a notable slowing, with or without irregularity, the pulse dropping to 50, 40, or even 30 beats per minute. This was most commonly seen during convalescence, and perhaps most frequently met with in diphtheria. The gravity of this disturbance varied greatly. Occurring during the height of diphtheria or pneumonia they excited the greatest alarm. In the convalescence from pneumonia or typhoid fever, bradycardia was quite harmless. In diphtheria, however, any disturbance of the pulse must always be viewed with concern, and every effort made to prevent possible serious cardiac failure. These patients should be managed as carefully as those in which acute dilatation had already occurred, and their convalescence should be watched with the same care. Medication was of secondary importance. If there was faintness or prostration associated with any irregularity, give alcohol, caffein, or strychnine. Digitalis or strophanthus were not of service in these conditions.

Asystole.—The sudden stopping of the heart was a rare climax of the myocardial changes in the acute infectious diseases. It might occur in any of them, but was fortunately infrequent except in diphtheria or pneumonia. The possibility of its occurrence was the final argument of a careful observation of the heart in all cases of acute infectious diseases, and for care in the transition from rest in bed to active effort. The responsibility rested with the patients after they had been warned. Once disaster came there was no opportunity to retrieve it, death being instantaneous.

Dr. A. Jacobi said there was no such thing as a hemic murmur in the very young. He had heard a few murmurs in small babies which he had reason to believe were not organic because, a few years after, they had disappeared without any change in the heart muscle. But they were very rare. When one found a murmur in a baby of one or two years it should not be considered functional, but an organic murmur, or valvular murmur. Later in life, when dealing with murmurs, they knew they might be endocardial in type. What had been said regarding the heart changes in infectious diseases he agreed with, and diphtheria was the worst of all; in this disease it was a common thing to find a myocardial murmur which might last a long time. When it lasted one year the case might be considered as hopeless, for the patient was liable to die of pneumonia or some intercurrent disease. In diagnosing a myocardial from an endocardial murmur an important point was that endocardial murmurs were found posteriorly, but not myocardial murmurs. So far as the myocardial changes were concerned, there was a hyaline degeneration, but no fragmentation; the latter was only found in the dead. There were myocardial changes which resulted in embolic deposits in the heart muscle, the changes in the heart being mostly found in those who had the right to atheromatous degeneration. Adrenalin had but little if any effect when given internally. Since he began teaching in the 60's he employed camphor; it was his standby, and he always carried it in his emergency satchel in solution, one part camphor to four parts sweet almond oil. Camphor might be used in emulsion.

Dr. Beverley Robinson said that in many instances of pneumonia, influenza, diphtheria, acute articular rheumatism, etc., unquestionably at times one could learn by physical examination that there was a certain amount of dilatation of the heart. Sometimes it seemed as if it was limited to the left ventricle. Again it seemed as if the right heart was particularly attacked as in pneumonia. These cases were handled differently. There was one agent he relied upon a great deal, strophanthus. If there was a considerable rise of temperature, the icebag applied locally was of value; but, if there was much depression, the hot water bag. He also relied upon the best alcohol, that was the best brandy. This gave the patient the best fighting chance, especially when there was consolidation of pneumonia. He was confident that if they used more local blood letting, but in a moderate way with children, and more aggressively in adults, over the heart or right lobe of the liver, a flip might be given to the heart's contraction which could not be started in any other way.

Dr. Henry Dwight Chapin said that an irregular and intermitting heart was not a bad condition especially, and was improved often by letting the patient out of bed, while another child would present more distress, even though the physical signs were the same in each case. One child would be improved by getting up; the other not. In his opinion the greatest danger was when the heart became slowed. In one of his cases the heart dropped to 25 beats; invariably these cases were followed by death. In some cases the heart might become suddenly very fast, and these were bad cases as well. When the heart and stomach together were affected, a fatal result was apt to follow, *i.e.* if the pulse was quick and weak, and the child vomited. He emphasized the importance of using morphine in small, nonnarcotic doses; this was a sheet anchor in cases of failing heart. It caught hold of the heart like digitalis and strengthened systole. It controlled the restlessness, particularly in children with weak and irregular hearts.

Dr. Charles E. Nammack said that, judging from his clinical experience, his results were the same as Dr. Koplik's, except in reference to the use of digitalis in the pneumonias of children; in view of its unreliability, he thought it better to use other drugs belonging to the same class as digitalis. He heartily agreed with Dr. Robinson when he said he preferred to use strophanthus in those cases where it seemed that digitalis was indicated. The

heart should not only be studied in the acute and general infections, but the condition of the blood-vessels as well, and the blood pressure in particular. They were too apt to regard the blood-vessels as appendages of the heart, when in truth the heart was an appendage of the blood-vessels. At Bellevue Hospital adrenalin was much used in cases of heart failure; it was used in cases of pulmonary edema and collapse in the acute infectious diseases in which it seemed desirable to raise the blood pressure.

Dr. Bovaird closed the discussion.

College of Physicians of Philadelphia.

At a stated meeting, held May 1, Dr. William L. Rodman presented a communication entitled "Complete Excision of the Tongue by Kocher's Latest Method," and he exhibited a man, 46 years old, from whom he had amputated the tongue for carcinoma of four years' standing, attributed to the irritation caused by a jagged tooth. Dr. Rodman recited the several operations that had been proposed and performed successively for the relief of carcinoma of the tongue, referring especially to ligation of the lingual or external carotid arteries for the control of hemorrhage or the purpose of starving out the growth. In some operations the tongue is approached directly through the mouth; in others an opening is made in the cheek; in still others removal is effected through the floor of the mouth, also resection of the inferior maxilla through the symphysis has been practised. A modification of this last method, extensively practised by Kocher, has yielded admirable results, and it is this operation that Dr. Rodman performed. An incision is made to one side of the median line from the mucous margin of the lip down to the hyoid bone, and, after the removal of one or two teeth, the bone is sawed through in this plane with the aid of a Gigli or a Hay saw. The floor of the mouth is incised through the lingual inversion and the tongue is thus rendered accessible, without division of important muscles or nerves, and the hemorrage is inconsiderable. In Dr. Rodman's case the tongue was divided as far back as possible, after a median incision had shown that the growth could not be included in a hemisection, and removal was effected by means of the thermocautery. There was little bleeding except from the bone. The patient was able to swallow on the day after the operation, and he was soon encouraged to sit up. Primary union took place, except at the point where a drainage tube had been introduced, and the alignment of the teeth was perfect. The danger of aspiration pneumonia, so common after other operations on the tongue, is largely obviated by the operation described by reason of the preservation of important muscles and nerves, rendering swallowing possible early and permitting free use of the stump of the tongue left behind. When glands in the neck are enlarged, as in the case reported, they are removed at a secondary operation. The enlarged glands are to be removed within a day or two. Operating in two stages is to be preferred to making so large an incision as would be required in a single operation, with the resulting grave dangers of infection and imperfect union. In the case exhibited union ensued without complication, and the result, in so far as it has gone, has been excellent.

Subinvolution of the Uterus.—Dr. Joseph B. De Lee advises the following to prevent subinvolution of the uterus: Avoid sepsis; conduct the labor with the same antiseptic precautions that one uses in laparotomies. Leave the case to nature as much as possible. Avoid practices to shorten the duration of normal labors. Avoid lacerations of the cervix; repair them if deep or if they bleed; repair the torn perineum accurately. Leave the uterus empty of clots, membrane, and placenta; therefore conduct the third stage of labor properly. If the uterus does not decrease in size rapidly in the early puerperium, give ergot. Don't allow the patient to lie on her back too long. Build up the general system.—*Southern Medicine and Surgery.*

Surgical Suggestions.

Induction of Labor.—Joseph B. Cooke recommends for this purpose in the case of a multigravida with short, softened, and dilated cervix, so-called expansion rings, which the obstetrician can easily make for himself. The appliance consists simply of a soft rubber catheter with the tip cut off, into which is passed a long spiral watch spring of the cheaper grade. This forms a circle when in place, and the approximate ends of the catheter are sewn together. When boiled the instrument is sterile and ready for use. It is then pinched up at one point and tied with bobbin tape, in a bowknot, with short loops and long ends, and grasped with a bullet forceps. The anterior lip of the cervix is now drawn down and held by an assistant or nurse, and the constricted segment of the ring, guided by the fingers of the left hand of the operator, is introduced by means of the bullet forceps into the cervix and just through the internal os. The nurse now pulls on the long end of the tape, unties the knot, and releases the spring. The operator, still holding the bullet forceps firmly in place while the anterior cervical lip is steadied by the nurse, grasps one side of the ring between his thumb and forefinger and pushes it slowly and gently into the uterus, until about half has passed the internal os. This is accomplished without pain or discomfort to the patient and with absolutely no danger of rupturing the membranes. When the ring is in place, in the form of a figure 8, with its greatest constriction at the level of the internal *os uteri* the vagina is packed with gauze and labor may be expected to begin within a few hours or even minutes. It is well to attach a tape to the vaginal portion of the ring, lest it work its way into the uterine cavity.—*American Journal of Obstetrics.*

Turpentine for the Hands.—Pure turpentine is a strong antiseptic and is very useful in cleaning the hands for operation, when one cannot use the permanganate of potassium and oxalic acid method (which ought to be employed when one has recently had the hands in pus and yet must operate). It is generally used improperly. The correct procedure is to scrub the hands with soft soap and warm water—running water if possible; if not, the bowl emptied and refilled at least twice—for at least five minutes; then to dry the hands thoroughly upon a clean, (but not necessarily sterile) towel; and then to cut the finger nails "to the quick." The turpentine is then poured over the hands and rubbed in thoroughly around the roots and ends of the nails and between the fingers, two minutes at least being devoted to this. Finally the hands and fingernails are to be scrubbed in soap and clean warm water and then soaked two minutes (by the watch) in 65 per cent. alcohol. They are then ready for immersion in the 1 to 2,000 sublimate solution.—*American Journal of Clinical Medicine.*

Tracheotomy.—Many valuable lives have been lost by the practice of sucking a tracheotomy wound in cases of emergency; but there can hardly be any case in which a surgeon is justified in resorting to such a dangerous method, which is almost certain to infect him with a very serious disease. The immediate dangers of a tracheotomy always seem greater than they are in reality. Even when the patient has ceased to breathe during the operation, the opening of the trachea with all convenient speed and the subsequent performance of artificial respiration, without attempting to introduce a tube, but merely with the edges of the trachea held apart, nearly always restore the patient to life. Blood can be prevented from entering the trachea by making the opening in it sufficiently large and bringing it up to the edges of the skin incision at once. Blockage of the tube by membrane is more difficult to treat, but it is generally sufficient to remove the membrance with a feather and to pick it out with a pair of laryngeal forceps.—*The Hospital.*

Surgical Observations in Manchuria.—From practical experience in the Russo-Japanese war, von Manteuffel of Dorpat would operate in neck wounds for hemorrhage only. In the thorax await effusion, and then in evacuating do it gradually, as otherwise infection may be sucked from the lung. Wounds of heart, "touch not." Manteuffel has seen seven shot wounds of heart heal smoothly. The spine gives nothing new; only the old, gloomy picture. In transverse palsy do not operate. If the palsy is not exactly transverse but irregular, laminectomy may be done. Improvements were few. Generally one should await possible absorption of blood clot. Shrapnel wounds are generally infected. Bladder wounds heal smoothly. With the extremities, follow the old von Bergmann precept—do not disturb and plaster-of-Paris at once; this is established by both positive and negative trials.—*Annals of Surgery.*

Books Received.

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MODERN MEDICINE. Edited by WILLIAM OSLER, M.D. Vol. I., 8vo, 937 pages, illustrated, muslin. Lea Brothers & Co., New York.

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Medical Items.

Health Reports.—The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 21, 1907:

SMALLPOX—UNITED STATES.

		CASES.	DEATHS
California, Berkley	May 25–June 1.	1	..
Los Angeles	June 1–8	1	..
Illinois, Chicago	June 8–15	1	..
Springfield	June 6–13	1	..
Indiana, Elkhart	June 1–8.	1	..
Evansville	June 1–8.	1	..
Indianapolis	June 2–9	3	..
South Bend	June 1–8	1	..
Iowa, Jessup	May 16–June 12	16	..
Keokuk	May 1–31.	3	..
Kentucky, Louisville	June 6–13	3	..
Louisiana, New Orleans	June 1–8.	8	..
Shreveport	June 1–8	8	..
Massachusetts, Lawrence	June 1–8.	1	..
Michigan, Detroit	June 1–8.	6	..
Huron County	June 12.	..	Present
Saginaw	June 1–15.	6	..
Minnesota, Stillwater	May 1–31.	4	..
Winona	June 1–8.	1	..
Missouri, St. Louis	June 1–8.	1	..
North Carolina, Charlotte	June 8–15.	1	..
Ohio, Cincinnati	June 7–14.	3	..
Pennsylvania, Homestead	May 29–June 7.	2	..
Tennessee, Nashville	June 8–15	2	..
Texas, Galveston	May 31–June 7.	3	..
Utah, Ogden	May 1–31.	2	..
Washington, Spokane	June 1–8.	10	..
West Virginia, Charleston, Kanawah County	Jan. 1–June 14.	68	Present in county
Wisconsin, Milwaukee	June 1–8.	8	..

SMALLPOX—FOREIGN.

Brazil, Bahia	May 18–25.	11	..
Para	May 18–June 1.	13	9
Rio de Janeiro	Apr. 29–May 12.	1	3
Canada, Halifax	June 9–15.	4	..
Toronto	Apr. 28–June 1.	17	..
Chile, Iquique	May 6–13.	..	Present
China, Hongkong	Apr. 6–27	31	23
Colombia, Cartagena	May 12.	..	Present
France, Paris	May 25–June 1.	11	2
Germany, General	May 18–25.	9	..
Great Britain, Southampton	May 25–June 1	1	..
India, Calcutta	Apr. 28–May 4.	..	47
Italy, General	May 23–30.	24	..
Florence	May 26–June 2.	1	..
Messina	May 18–25.	2	..
Java, Batavia	Apr. 27–May 4	2	..
Madeira, Funchal	May 26–June 2	20	13
Mexico, Aguas Calientes	June 1–8.	..	13
Monterey	May 26–June 2.	..	1
Nuevo Laredo	June 7.	2	Imported
Portugal, Lisbon	May 25–June 1.	10	..
Russia, Moscow	May 9–18.	3	2
Odessa	May 18–25.	12	2
Warsaw	May 4–11.	..	5
Spain, Barcelona	May 21–31	..	3
Valencia	May 26–June 2	9	..

YELLOW FEVER.

Brazil, Para	May 18–June 1.	4	3
Rio de Janeiro	Apr. 29–May 12.	5	3
Cuba, San Nicolas	June 12–18.	1	..
West Indies, Trinidad, Port of Spain	May 18–25.	3	1

CHOLERA

India, Calcutta	Apr. 28–May 4.	..	35

PLAGUE—UNITED STATES.

California, San Francisco	May 23–26.	1	1

PLAGUE—FOREIGN.

Australia, Brisbane	Apr. 6–20	3	2
Port Douglas	Apr. 6–13.	2	..
Sydney	Apr. 6–20.	5	1
Brazil, Bahia	May 18–25	1	1
Rio de Janeiro	Apr. 20–May 5.	1	1
Para	May 25–June 1.	1	1
Chile, Antofagasta	May 6–13.	19	19
China, Hongkong	Apr. 20–27.	1	1
Egypt, Alexandria	May 18–23.	3	1
Provinces—Assiout	May 16–23.	18	25
Beni Souef	May 16–23.	2	1
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Peru, Callao	Apr. 24–May 1.	1	..
Chiclayo	Apr. 24–May 1.	1	..
Ferrenafe	Apr. 24–May 1.	1	..
Lima	Apr. 24–May 1.	12	4
Paita	Apr. 24–May 1.	6	2
Pimentel	Apr. 24–May 1.	2	1
Tambo	Apr. 24–May 1.	5	3
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